POSTER ABSTRACTS

PSYCHIATRY: INTEGRATING BODY AND MIND, HEART AND SOUL

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MEDICAL STUDENT-RESIDENT COMPETITION POSTERS

MAY 16, 2015

MEDICAL STUDENT-RESIDENT COMPETITION 1

ACUTE PSYCHOSES SECONDARY TO MEDICAL ETIOLOGY: COMPLEX DISPOSITION FOR COMPLEX CASES: CASE REPORT AND LITERATURE REVIEW

Lead Author: Cristina Montalvo, M.B.B.S., M.D.
Co-Author(s): Jennifer R. Brown, M.D.

SUMMARY:
Purpose: As consultation liaison psychiatrists, one of the main responsibilities lies in diagnostic clarification and disposition planning. However, when a medical diagnosis is identified, we are often asked to facilitate psychiatric admission despite ongoing medical issues that may impact the psychiatric presentation. Using this case study, we sought to bring to attention the difficulty in differentiating medically induced psychosis and possible complications of admitting such patients for psychiatric treatment when further medical intervention and monitoring is required.
Methods: We present the case of a 46 year old female with history of temporal lobe epilepsy (TLE), traumatic brain injury, depression, and PTSD evaluated in the ED after she was found wandering unable to verbally communicate. The patient's husband reported gradual changes in her behavior 3-4 weeks prior with intrusive thoughts of contamination, discontinuation of topiramate for seizure control, and dysgeusia and dysomia which were prodromal symptoms in the past. Further medical workup was requested given her seizure disorder and discontinuation of antiepileptics. The patient was admitted to medicine, and C/L psychiatry was consulted for "bizarre behavior". We evaluated the patient and noted that she exhibited repetitive arm movements with periods of inattention, mood and affective lability, tangential thought process, and paranoid delusions. We recommended a neurology consult. When seen by neurology, she was minimally interactive, had bilateral waxy rigidity of her upper extremities, diffuse hyperreflexia, and slowed finger to nose. The patient was restarted on topiramate, started on quetiapine for psychosis, and sent for involuntary inpatient psychiatric commitment with neurology outpatient follow up.

Conclusions: Medical basis for psychosis should be frequently considered in a differential diagnosis. However, a physician's inquiries into symptoms are less thoroughly investigated when a medical explanation is unclear and the patient has a psychiatric history. In one study, 59% of staff did not appreciate that the patient's medical comorbidities were complicating the psychiatric presentation prior to making the psychiatric referral. In TLE, the prevalence of postictal psychosis (PIP) is reported to be up to 6.4%. Furthermore, it is important that the medical risks are fully appreciated when admitting these patients to an inpatient psychiatric hospital. In an analysis of 7 psychiatric hospitals, mortality risk was highest in those with organic mental disorders. This data highlights the complexity of disposition needs when dealing with both medical and psychiatric comorbidities and understanding what should take precedence.
Further studies need to be done to better understand what long term monitoring facilities should be utilized for individuals with coexisting psychiatric disorders with potential medical etiologies or contributing medical comorbidities.

SUPERFICIAL SIDEROSIS AND PSYCHIATRY: A CASE REPORT AND LITERATURE REVIEW

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

SUMMARY:
Background: Superficial siderosis is a rare condition that is caused by a repeated or continuous leak of blood into the CSF. Glia cells metabolize hemoglobin and subsequently deposit it into the superficial layers of the CNS leading to both gliosis and neuronal cell death. Hindbrain structures are typically the most affected, with the cerebellum often showing the most damage. The inferior frontal lobes are also often involved and patients frequently present with anosmia. Patients exhibit a range of deficits in various domains including language, visuospatial cognition and executive

functioning. While cerebellar activation has been implicated in emotional modulation, little is known about the specific cognitive and behavioral effects of superficial siderosis.
Case: The patient is a 50 year old African American male with no psychiatric history who was brought the ED by his sister who was concerned about patient's mental status. Described disorganized behavior, minimal interactions, and indicated that patient was unable to perform basic self-care. She reported that he had not spoken in two months and had been wearing his clothing backwards. Denied substance use, no history of any head trauma.
Patient had been living independently, was reliable at work until two years ago when he began showing up late to work. Ultimately lost his job and subsequently his housing. Moved in with family who noted a more recent acute decline.
On initial interview, patient did not respond to questions, was observed to be catatonically-stanced and vacant, did not make eye contact. Basic medical workup including CBC, CMP, UA, TSH, UDS, ETOH, head CT were negative. Admitted to inpatient psychiatric unit with diagnosis of unspecified catatonia. Some improvement was seen after lorazepam challenge. He was then given six ECT treatments and was noted to be more communicative with family. Neurology was consulted and initial work up was negative. Venlafaxine started for depression and patient was discharged.
Three months later, patient decompensated and family brought him back to the hospital. TAT testing was performed due to disorganized behavior and was negative, Hamilton depression and anxiety testing were both negative and cognitive testing was unremarkable except for some amnesia of recent events. MRI remarkable for superficial siderosis and cerebellar atropy.
Discussion:
While little has been studied regarding the behavioral aspects of superficial siderosis, knowledge regarding the areas most commonly affected would suggest that deficits in not only cognition but also social cognition would be seen in patients afflicted.

CASE REPORT ON MUNCHAUSEN SYNDROME

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

SUMMARY:
The case of a 41 year old Caucasian female, who has been admitted in a state psychiatric facility and manifests symptoms of Munchausen Syndrome, is presented. 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 in multiple psychiatric facilities and emergency rooms, 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 clinician's own counter transference, 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 behavior.

TREATMENT OF NEW-ONSET PSYCHOSIS INDUCED BY THE USE OF BATH SALTS

Lead Author: Amina Z. Ali, M.D.
Co-Author(s): Ifeoma Nwugbana, M.D., Prathila Nair, M.D.

SUMMARY:
Bath salts are a new group of emerging drugs that contain synthetic cathinone and have stimulant-like properties. These drugs are becoming popular as drugs of abuse and have been shown to cause not only medical complications but also induce psychotic-like symptoms in people with no previous psychiatric disorder. Few cases in the literature have shown various psychotic symptoms produced in the use of bath salts as well as treatment options for these patients. This is a case of a 19 year old male patient with no prior psychiatric history who presented with symptoms of paranoia, agitation, ideas of reference, grandiosity, hallucinations and disorganized behavior. Urine toxicology was

negative however collateral information revealed the recent use of bath salts in the patient. The patient was treated with low-dose anti-psychotic medication to help diminish symptoms. It is important for physicians to be aware of the use of synthetic drugs and recognize the psychiatric effects of these drugs. The use of anti-psychotic medication to minimize symptoms in acute and long-term settings will be discussed.

DIAGNOSIS AND TREATMENT OF ORGANIC AGGRESSION SYNDROME IN A PATIENT WITH A HISTORY OF TBI, SEIZURE, AND BIPOLAR DISORDER

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

SUMMARY:

Posttraumatic aggression is a well known complication of traumatic brain injury (TBI).
Organic Aggression Syndrome is one of the described patterns of posttraumatic aggressive behavior. 33% of adults develop aggression in the first year. (1) Characteristic features of organic aggression syndrome including reactive, non-reflective, non-purposeful, periodic, explosive and ego-dystonic aggression episodes. (2)
This poster describes a case of organic aggression syndrome complicated by other neurological and psychiatric illnesses and symptoms. The presence of aggressive behavior in the context of multiple mental and medical disorders may affect the diagnosis and recognition of the cause of the episodic rage.
Previous studies showed the effectiveness of valproic acid in treating the destructive aggressive behavior in patients with TBI. In addition, valproic acid improves the mood and manic symptoms. (3,4)

HYPERPROLACTINEMIA IN A DEAF AND MUTE ADOLESCENT FEMALE PRESENTING WITH SCHIZOPHRENIA, BORDERLINE INTELLECTUAL FUNCTIONING, AND WAARDENBURG SYNDROME

Lead Author: Kiana A. Andrew, M.D., M.P.H.
Co-Author(s): Julie Bernstein DO, Lalit Singh MD MPH, Eric Leonhardt DO

SUMMARY:

Hyperprolactinemia is a common side effect of second generation antipsychotics and is commonly manifested by galactorrhea, amenorrhea, gynecomastia, and anorgasmia, along with other presentations. In this case report we summarize the manifestation and resolution of hyperprolactinemia in an adolescent female with Schizophrenia who is also deaf and suffering with a rare genetic syndrome, Waardenburg Syndrome. The patient's highest prolactin level reached 98.3ng/ml, resulting in galactorrhea and mastalgia, after starting the patient on paloperidone. With the use of aripiprazole, the patient's prolactin level normalized leading to resolution of her symptoms. The patient's Schizophrenia was also ultimately managed with the the use of long acting aripiprazole. The patient's prognosis was further complicated by significant psychosocial stressors.

A “BAD TRIP”. LATE ONSET PSYCHOSIS AND INCREASED SUICIDAL IDEATION AFTER INGESTION OF ˜MAGIC MUSHROOMS”: A CASE REPORT

Lead Author: Ashik Ansar, M.D., Ph.D.
Co-Author(s): Carolina Retamero, MD.

SUMMARY:

Background:
"Magic mushrooms" (M-M) are becoming increasingly popular among drug users, as they are believed to be more harmless than other hallucinogenic drugs. Hallucinogen-like psilocybin is an ingredient of M-M. Quick onset of euphoria and subsequent sensory distortion (30 min - 2hrs), and frank hallucinations or panic attacks are often reported. Acute psychosis can also occur, and the duration of symptoms typically last up to 12 hours. We report a challenging case of delayed onset psychosis following the ingestion of M-M.
Objectives:
Identify Psychedelic effects and mechanism of action of M-M.
Methods:
PubMed search engine, using key words: 'magic mushroom', 'hallucinogens', 'lysergic acid diethylamide (LSD)', 'psilocybin', 'psychedelic', 'risk assessment'.
Case vignette:
JE is a 23 year old working male with no prior psychiatric history who was brought to the CRC by police voluntarily after he expressed to significant other an increased suicidal ideation with plan to 'jump off a bridge'. He had ingested

dried magic mushroom approximately 4 days before presentation and his UDS was negative upon presentation. He was paranoid and frightened at times, and ecstatic and happy at other times. On day 3 post admission, he reported overwhelming auditory hallucinations, "multiple voices" and sound intolerance that prompted him to attempt suicide to cut his throat with a chip of Plexiglas bathroom mirror that he had broken into pieces. He attempted twice in two days in a row despite the presence of his 1:1. He was aggressively treated with antipsychotics and his symptoms remitted by day 7 of hospitalization.
Discussion:
Effects of Magic Mushroom broadly resemble those of LSD. The effects of hallucinogenic drugs generally appear to be partly related to actions on the serotonergic transmission system, but the mechanisms relating to mushrooms in particular are not known. Use of magic mushrooms is relatively safe as only few and relatively mild adverse effects have been reported elsewhere. The low prevalent but unpredictable provocation of panic attacks and flash-backs remain, however, a point of concern, and some patients may be more susceptible to these presentations. In such cases, aggressive management with antipsychotic medications and close observation may be necessary while symptoms persist. Patient and family education about the psychedelic properties of M-M and safe discharge planning are the key to prevent recurrences and serious complications.
References:
(1) Van Amsterdam J, et al. Harm potential of magic mushroom use: A review. Regulatory Toxicology and Pharmacology 2011; 59:423â€“429.
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40-YEAR OLD FEMALE WITH ANTI-NMDA RECEPTOR ENCEPHALITIS: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Rita M. Aouad, M.D., M.P.H.
Co-Author(s): JaHannah Jamelarin, M.D.

SUMMARY:

HPI: 40 yo Caucasian female with no psychiatric history presented with new onset psychosis, fatigue, confusion, diplopia and nystagmus. She called police to report having been abducted, and for the past month, had insomnia, mood lability and was found laughing to herself. She had a prodrome including headache, nausea, vomiting, diarrhea, abdominal pain, fatigue and weakness, beginning 1.5 months prior to presentation and lasting 3 weeks, followed by worsening psychosis. She reported a history of child abuse, resulting in placement in foster homes. She denied any recent drug or alcohol use.
Clinical course: She was admitted for subacute encephalitis and continued to have intermittent altered mental status and agitation. MRI brain was nonrevealing. She was started on Acyclovir 10mg/kg which was later discontinued when HSV returned negative. She was started on Solumedrol 1 gm/day for 5 days. Extensive infectious, autoimmune, and paraneoplastic workups were done; infectious and autoimmune workups were nonrevealing, except for LP revealing predominant lymphocytic pleocytosis and elevated protein. Paraneoplastic workup including Anti-NMDAR was pending, and so she continued on a 5-day course of 1g IV Solumedrol. Symptoms improved following IV steroids, and third repeat LP showed further improvement in pleocytosis with reduction of lymphocytes. Following discharge, episodes of confusion, paranoia, and aggression resumed and she began to have muscle spasms and somnolence. Her CSF anti-NMDAR antibody returned positive and she was readmitted to complete 7 days of plasmapheresis alternating with a 5-day course of IV Solumedrol. PET and CT scans were completed given association of NMDAR encephalitis with ovarian teratoma, and were negative for malignancy. Mental status improved significantly with combination plasmapheresis and IV steroids. She was discharged on Prednisone taper followed by Rituximab maintenance.
Discussion: Anti-NMDAR encephalitis is associated with anxiety, sleep disturbances, mood lability, psychosis, agitation, and catatonia. Stereotypical progression of the disease begins with viral-like prodrome, followed by psychiatric symptoms, neurologic symptoms and autonomic instability. Behavioral disturbances are the norm. She

lacked dyskinesias, choreoathetoid movements, dystonic posturing seen in many other cases; however she did have abnormal eye movements. She was also without malignancy. An LP with CSF analysis is the gold standard and may reveal lymphocytic pleocytosis, elevated protein, oligoclonal band, and anti-NMDAR antibodies. MRI, CT, ultrasounds are needed to look for neoplasms. First-line treatment is IV glucocorticoids and plasmapheresis. Second line treatments include rituximiab and cyclophsphamide. Considering anti-NMDAR encephalitis in younger women with acute behavior change is important for all psychiatrists since early diagnosis is important and delays may worsen prognosis or be fatal.

A NOVEL CASE OF PHYSIOLOGICAL TREMOR SECONDARY TO PTSD SUCCESSFULLY TREATED WITH ACUPUNCTURE

Lead Author: Darinka M. Aragon, M.D.
Co-Author(s): Michael Hollifield, MD

SUMMARY:
INTRODUCTION
Post-traumatic stress disorder (PTSD) is characterized by re-experiencing aspects of the original trauma, avoidance and numbing of trauma reminders, and general hyperarousal. The lifetime prevalence of PTSD in community samples is around 6.8% and as high as 30% among Vietnam veterans. We present a novel case of a Vietnam Veteran who presented with a physiological tremor related to PTSD which was successfully reduced with acupuncture.
PATIENT DESCRIPTION
A 67 year old Vietnam Combat Army Veteran with a past medical history of PTSD, depression NOS, Anxiety disorder NOS, and alcohol dependence in remission, presented for the treatment of a tremor. The patient had undergone 12 weeks of cognitive processing therapy and had been treated with prazosin and he continued to have symptoms of PTSD. His symptoms included: nightmares occurring 2-3 times a week, avoidance of crowds, flashbacks 3-4 times a week, feelings of guilt about surviving the war, poor concentration, hypervigilant behavior, easy irritability, and anger outbursts. The patient reported the tremor had been present since he returned home from war. The tremor was described as intermittent, at rest but more prominent with movement, associated with stress, and exacerbated by questioning of war and alcoholism. He had been treated with primidone for the tremor and noted some improvement. However he sought treatment as the tremor was still present and interfering with his work as an artist. Upon physical exam, the tremor was noted on both upper and lower extremities, and it was highest in the upper extremities. The tremor was noted to increase upon conversations about war.
INTERVENTION & RESULTS
The patient was treated with 7 sessions of acupuncture (b/l at PC6, HT7, LI 11, LI 4, ST 36, SP 6, LV 3, and unilateral Yintang), augmented by pleasant imagery. The patient reported cessation of tremors immediately after acupuncture with partial recurrence a day after the session, but with overall 50% reduction particularly in the resting component.
DISCUSSION
Physiological tremors can be exacerbated by increasing sympathetic activity. The patient's PTSD symptoms that came about after combat exposure slowly led the physiological tremor to the point of detection and impairment. Acupuncture's effects are mediated in part by the autonomic nervous system and prefrontal and limbic brain structures, neurological systems that are involved in the pathophysiology of PTSD. It is our belief that the sympathoinhibitory effects of acupuncture decreased the patient's physiological tremor. PTSD is a complex illness with high psychiatric and medical comorbidity. Acupuncture's effects on PTSD have not been researched until recently. To our knowledge there are no publications describing acupuncture as a treatment of physiological tremors related to PTSD. This case highlights the importance of further definitive research on acupuncture as a treatment of PTSD and its related medical comorbidity.

SIGNIFICANT SIALORRHEA WITH RISPERIDONE CONSTA USED TO TREAT SCHIZOPHRENIA AND RESPONSE TO COGENTIN: CASE REPORT AND LITERATURE REVIEW

Lead Author: Noel M. Baker, M.D.

SUMMARY:
OBJECTIVE:

To ascertain evidenced based treatment for as well as the proposed etiology of risperidone induced sialorrhea.
Case Report:
Mr. G is a 67 year old male with schizophrenia r/o schizoaffective disorder. His history is significant for greater than 10 psychiatric hospitalizations including a long term stay at a state psychiatric hospital. His symptoms range from disorganized thought process with bizarre delusions to irritability, aggression and intense emotion. Despite symptom response with oral risperidone, he nonetheless continued to have multiple re-hospitalizations due to non-compliance because of patient's belief that his mental illness was cured. In 11/2013 patient was started on the injectable form of risperidone (risperidone Consta). After previous medication trials of chlorpromazine, olanzapine, and haloperidol, the patient has been most stable and maintaining community living with the combination of risperidone Consta 37.5 mg IM every 2 weeks, risperidone 1 mg orally twice a day, clonazepam 0.5mg orally twice a day, and divalproex sodium 1000 mg orally at bedtime. He reported no extrapyramidal symptoms and his Abnormal Involuntary Movement Scale (AIMS) score was negative after months of this regimen. However, he was noted to be drooling on visits in March and April of 2014. Although it is listed among risperidone's side effects, excessive drooling is not common nor is its etiology clearly elicited. Given patient's clinical stability his oral risperidone was decreased with hope of this improving the drooling. However, there was no such improvement noted. It was at this time Cogentin 0.5 mg orally twice a day was added. Patient did show improvement that was noticeable on the next visit and subjectively by the patient. Cogentin was titrated to 0.5 mg orally in the morning and 1 mg orally at bedtime with positive effect. Patient no longer had the excessive drooling and was compliant with medication and follow up thereafter.
METHODS: Literature review was performed
RESULTS: There is very little research or information known about the incidence or pathophysiology of risperidone induced sialorrhea save for a few case reports. Much of the studies and evidence for neuroleptic induced sialorrhea are results from studies with clozapine induced sialorrhea which is more common.
CONCLUSIONS: This review points out possible mechanisms behind which Cogentin and other anticholinergics are effective in treating those with clozapine induced Sialorrhea. As a result we as physicians utilize evidence based treatment strategies gathered from review of research with clozapine induce sialorrhea (which is more common) and apply that to other Neuroleptic induced sialorrhea (which is far less common).

MILITARY THERAPY DOGS AIDING SOLDIERS: APPLICATIONS IN BEHAVIORAL HEALTH

Lead Author: Connie L. Barko, M.D.
Co-Author(s): Bryan Bacon, D.O.

SUMMARY:

Since embarking on The Global War On Terror, the United States military has attempted to assist injured service members in the long process of recovery with the ultimate return to active duty or a transition to veteran status. Due to the complexity of injuries, several alternative methods of treatment have been pursued to aid service members in the healing process. For example, there is growing evidence of a physiological and psychosocial benefit of animal-assisted activities (AAA), animal-assisted therapy (AAT), and service animals among patients with medical and mental health disorders. Historically, the military has implemented the use of trained canines since World War I. These animals have more recently been used in the rehabilitation of service members with behavioral health problems, and have deployed to Afghanistan and Iraq as components of the US Army's combat and operational stress control teams in order to minimize mental health stigma.

This case report highlights the use of therapy dogs in military psychiatric settings and serves as a platform for how these techniques can be implemented in the civilian behavioral health community. A thirty-three year old, married, Caucasian female service member, who was deployed to Afghanistan in 2010, was injured during a rocket-propelled grenade attack. Her exposure to the blast and subsequent motor vehicle accident resulted in her loss of consciousness, a ruptured left eye, orbital fractures, shrapnel to her face, maxillary fractures and loss of several teeth. She underwent more than twenty surgeries, but the

attempt to salvage her left eye was not successful. The patient was also diagnosed with post-traumatic stress disorder, major depressive disorder, panic disorder with agoraphobia, and cognitive disorder secondary to traumatic brain injury. Due to the severity and frequency of her panic attacks, she acquired a trained service dog who accompanied her everywhere. Her anxiety symptoms became well-controlled, and had less social isolation, improved ability to complete tasks, and a decrease in the intensity and frequency of panic attacks.

From the beginning of the most recent conflicts, the military has given priority to recognizing and managing behavioral health symptoms among service-members. They have also utilized innovative ways of treating patients who suffer from devastating and complex injuries. One innovative treatment involves service animals, which has been associated with a physiological and psychosocial benefit. The military's experience with animal assisted treatments and activities could be expanded to their civilian counterparts to improve occupational performance, psychosocial functioning, and mental health status among patients.

INTERFERON-BETA 1B INDUCED DEPRESSION AND SUICIDAL IDEATION IN MULTIPLE SCLEROSIS

Lead Author: Mariame Barry, M.D.
Co-Author(s): Ashik Ansar, M.D., Sachin Mehta, M.D., Carolina Retamero, M.D.

SUMMARY:

Introduction:
Multiple sclerosis (MS) is a chronic inflammatory disorder of the central nervous system (CNS) with demyelination of the motor and sensory systems. It is well known that patients with MS have comorbid psychiatric disorders due to the progressive and disabling nature of the illness, and due to the side effects of medications like various types of Interferon (IFN). Psychiatric adverse effects of depression and suicidal ideation have been reported for IFN-alphaand IFN-beta 1a, however, there is limited data establishing such adverse effects for IFN-beta 1b.

Case:
A 57 year old single Caucasian female with history of bipolar disorder, who had been stable as outpatient for 9 years, presented with complaints of worsening depressed mood after her dose of IFN-beta 1b was increased from 0.5mg to 0.75mg. As the medication was increased to its maintenance dose of 1mg, the patient developed severe suicidal ideation with plan to jump in front of a train. She reported this urge to be so intense that she could not present to her usual outpatient psychiatric appointment by taking public transportation and took a taxi instead. Physical examination and laboratory findings were within normal limits. The patient was on a well tolerated maintenance dose of lithium with levels within therapeutic range. The patient was admitted on the psychiatric unit and IFN-beta 1b was discontinued and the patient reported significant improvement of her psychiatric symptoms and was able to deny any suicidal ideations within a few days of admission.

Methods:
A retrospective chart review was conducted and a PubMed search was completed using the words: interferon beta, multiple sclerosis, psychiatric side effects and suicidal ideation.

Discussion:
Psychological distress and psychiatric disorders have been associated with MS. Patients with a history of psychiatric illness seem to be more susceptible to the psychiatric adverse effects of INF with some studies showing a dose-dependent relationship. This appears to be the case of our patient as she did not report any decompensation of her psychiatric illness at half the dosage on INF-beta 1b. It is crucial for clinicians to screen patients for susceptibility prior to starting INF treatment and to provide close monitoring during treatment.

References:
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SUICIDE ATTEMPT AFTER REBOUND ANXIETY FROM ALPRAZOLAM

Lead Author: Michelle Benitez, M.D.
Co-Author(s): Zuleika A. Arroyo, M.D, Rashi Aggarwal, M.D

SUMMARY:

Alprazolam (APZ) creates addiction, withdrawal and paradoxical reactions. Although this is well known in the medical community, APZ is currently the most prescribed and abused benzodiazepine (BDZ) in the United States. Rebound anxiety is part of the paradoxical reactions that have been delineated for this medication, and it's described as a very severe anxiety that is often grater than what the patient experienced at baseline. Here we present a case report of a female patient that presented to an inpatient unit after a severe suicide attempt by hanging that was precipitated from rebound anxiety after regular dosing of APZ.

Case

A 51 year old Japanese woman was brought to the emergency department by her husband with left periorbital echymosis and ligature marks around her neck after a suicide attempt. She reported depression associated with multiple stressors but no prior suicidal ideation or attempts. Patient had visited her primary care physician and was prescribed APZ 0.5 mg po TID PRN for anxiety and fluoxetine (SSRI) 20 mg for depression. The day before her suicide attempt, patient took her prescribed doses due to increased anxiety. Her mood had remained depressed but unchanged for months. She described that after waking up the next morning she had an intense surge of anxiety unlike any previous episode, followed by a panic attack. Patient reported she next took a cable cord and a stool, stepped into her closet and proceeded to hang herself. Her next memory is waking on the floor with intense left facial pain.

Paradoxical and rebound reactions of BDZ

BDZ act as anxiolytics, anticonvulsant, muscle relaxant and hypnotic agents. Although BDZ have a wide range of use the potential for addiction, paradoxical and rebound effects make this medications controlled substances which are not intended for long term use. In the case of APZ the molecule shows increased affinity for the GABA-BDZ-chloride-ionophore receptor complex. This property allows APZ to have rapid and effective anxiolytic effect while also increasing it's potential for addiction and precipitating in some patients severe paradoxical or rebound reactions as well as a difficult detoxification regimen. Paradoxical and rebound reactions include insomnia, rebound anxiety, muscle spasm, psychotic states and agitation, due to APZ short half life and increased affinity this reactions can be often present when used even when tolerance has not ensued.

Discussion

BDZ and it's multiple uses have lead them to be prescribed world wide in substantial numbers, APZ is the most widely prescribed BDZ with multiple specialties and primary care relying on it for treatment of anxiety. Although most physicians are aware of it's potential for addiction and dangerous withdrawal, the most immediate risk are sometimes overlooked which may lead in some cases to severe rebound reactions and in the case of our patient a serious suicide attempt.

WEATHERING THE TRANSITION TO MOTHERHOOD - PATTERNS OF POSTPARTUM DEPRESSION ACROSS CULTURES

Lead Author: Amritha Bhat, M.D.

SUMMARY:

Purpose: To present a case of postpartum depression in a Somali female and highlight factors that may impact detection and treatment of postpartum depression in patients with different cultural backgrounds.

Case Report: Ms.M, a 35 year old Somali female G7P5 postpartum week 4 was brought in by her family as she was not eating, sleeping or caring for her infant. She had regular antepartum visits, and delivered within the same hospital system, however did not seek help until she had poor intake (with ketonuria) and had failed lactation. On admission to the psychiatric ward the patient and her family were resistant to discussions of anything other than sleep or appetite. She also began to describe sensations such as "a dog in her abdomen" and felt that her illness was caused by her husband.

She was started on an antidepressant and an antipsychotic which she took hesitantly. Ultimately the family took her home against medical advice, got the help of a spiritual healer and she is reported to have recovered.

Discussion: Postpartum depression can be considered to be a universal disorder or a culture bound syndrome. Apart from difficulties

in assessment caused by language barriers, it has been noted that somatization is an expression of depression in Hispanic, Asian and African cultures as compared to sadness and guilt in western cultures making both semantic and conceptual equivalence difficult to establish. Thus culture can mediate the experience, attributions, and expression of postpartum depression. Culture bound phenomena such as possession syndromes may be seen, which can be difficult to distinguish from psychotic symptoms. Treatment of postpartum depression can be complicated by interference with culture specific postpartum rituals or the patient's choice of healer(religious / spiritual).
Conclusions: A culturally informed approach is important to detect and manage postpartum depression given the far reaching consequences of maternal depression on maternal and child health. Accounting for the protective effects of postpartum rituals and allowing the patient to incorporate her own explanatory model can help, in addition to interventions like visiting nurses to observe / support the mother in her own cultural context.
References:
Bina R. The impact of cultural factors upon postpartum depression: a literature review. Health care for women international. 29: 568-592.
Educational objectives
To identify cultural factors relevant to the detection and management of postpartum depression.
To highlight the challenge of differentiating psychotic symptoms from culture bound phenomena such as possession syndromes.
To propose a culturally informed approach to detect and manage postpartum depression.
Relevance of the presentation:
In an increasingly multicultural patient population it is important to note that it is helpful to be flexible in our diagnostic and treatment approach.

SCHIZOTYPAL PERSONALITY DISORDER AND DEPRESSION: THE IMPORTANCE OF PROPER DIAGNOSIS AND TREATMENT

Lead Author: Azka Bilal, M.D.

SUMMARY:

BACKGROUND
Patients with schizotypal personality disorders display unique cognitive perceptions, eccentric behaviour and experience difficulty maintaining interpersonal relationships. When this is accompanied by a mood disorder, the symptoms become more complex, making it difficult for psychiatrists to diagnose and treat the patient. This case study will illustrate the situation of a 29 year old male patient, who was diagnosed with schizotypal personality disorder and major depression during his brief inpatient stay, and how a treatment plan was formulated for him considering his unique personality characteristics.
CASE
The patient is a 29 year old male who was transferred to our hospital from another facility after being petitioned for 'disorganized thoughts, agitation, thought blocking and dishevelled appearance'. He described being 'in a state of crisis' and feeling 'overwhelmed with life' while reporting a depressed irritable mood for one and a half month, sleep cycle disturbances, feelings of worthlessness and 'general apathy'. He denied any suicidal ideation, intention or plan. On further interviewing, the patient was noted to use metaphorical language and intellectualizing his thoughts. He described himself as being diagnosed with bipolar disorder in the past. He also reported being overly suspicious of others with difficulty maintaining relationships. Using the DSM-IV diagnostic criteria, he was diagnosed with Axis I Major Depressive Disorder (MDD). Keeping in mind his psychoticism, he was given an Axis II diagnosis of schizotypal personality disorder. The patient was encouraged to voluntarily seek antidepressive treatment in the hospital but he was fixated on the belief that the environment was not suitable for him as 'they take away your freedom, your bodily fluids, puncture you" and 'cooperating with you is asking me to cooperative with my rapist'. Keeping in mind his unique personality traits and cognitive perception, the patient was provided supportive therapy and his symptoms were discussed in detail. He slowly warmed up to the treatment team, and became more open to the idea of seeking treatment. He was discharged with the agreement that he will follow up at an outpatient clinic associated with our facility for further treatment.
DISCUSSION

This case highlights important points for discussion. Patients with schizotypal personality disorders are often misdiagnosed.Our patient was petitioned for disorganized thoughts and eccentric appearance, and was also misdiagnosed with bipolar disorder in the past. His depressive symptoms were almost masked by his schizotypal personality traits, and vice versa.It took successive detailed interviews and an extensive psychiatric evaluation to properly diagnose him. Therefore, there is a great need for research to determine how major depression can manifest in patients with schizotypal personality disorder, how it can be diagnosed and what effective treatment strategies can be developed.

THE DESIRE FOR DEATH: A CASE PRESENTATION WITH LITERATURE REVIEW OF A REQUEST FOR EUTHANASIA

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

SUMMARY:

Introduction: Major depressive disorder has been documented to occur in varying degrees of terminally ill patients, and suicidal ideation in this population is not a rare occurrence. Pain, loss of dignity, depression, and sense of burden-ness, among others, have been identified as risk factors for a desire for death (DFD) in this population. Requests for euthanasia by terminally ill patients should be viewed as a variant of active suicidal ideation. It is important to identify potential risk factors for DFD so that contributing factors can be treated and mitigated, hopefully leading to improved quality of life for terminally ill patients. This case illustrates a patient with metastatic lung cancer who experienced progressive decline of function and repeated hospital admissions, and ultimately made a one-time request for euthanasia to the consulting psychiatrist.
Case: The patient was a 91 y/o African-American male with a history of metastatic lung cancer with recently discovered esophageal cancer status-post debulking, who was admitted for a one month history of increasing weakness, fatigue, and difficulty handling secretions. The patient had previous hospital admission 3 months prior in which he was evaluated for passive suicidal ideation, and was initiated on treatment with liquid formulation fluoxetine. The consult service was again consulted for suicidal ideation and found the patient to be endorsing depressed mood, fatigue, and insomnia. He disclosed once to the consulting resident his desire for euthanasia. The consulting service made recommendations to optimize the patient's pharmacologic management of his pain and depression, and the patient was discharged back to rehab.
Conclusion: Terminally ill patients suffer from myriad medical problems. Often, these medical issues can be managed sufficiently, but a special population of patients experiencing more severe symptoms, including difficult to manage pain, functional decline, and loss of dignity, are at unique risk to develop depressive symptoms, suicidal ideation, and desire for euthanasia. As euthanasia is not an acceptable nor appropriate course of action, careful attention must be paid to potential symptoms and situations that may place patients at risk for developing a DFD, so that appropriate interventions may be undertaken and any and all possible improvements in quality of life can be made.

DRESS (DRUG REACTION WITH EOSINOPHILIA AND SYSTEMIC SYMPTOMS) SYNDROME INDUCED BY ANTIDEPRESSANT SERTRALINE: CASE REPORT AND LITERATURE REVIEW

Lead Author: Meredith M. Brandon, M.D.
Co-Author(s): Daniel Finch, M.D.

SUMMARY:

Background: SSRIs are associated with notable side effects including GI disturbances, headaches, sexual dysfunction, insomnia or sedation, sweating, and bleeding. Less commonly, however, are dermatologic symptoms. In cases of treatment resistant depression, SSRIs are combined with atypical antipsychotics such aripiprazole or quetiapine, which also carry little to no risk of dermatologic reactions. Here, we present a case involving a 14-year old female who developed DRESS syndrome during the use of sertraline and aripiprazole. There are no documented cases of DRESS syndrome induced by either sertraline or aripiprazole in the literature to date.
Case: Our case involves a healthy 14-year old female with a psychiatric history of depression and anxiety, who was hospitalized after presenting with complaints of a new-onset generalized, erythematous, and pruritic rash.

Her labs were significant for a leukocytosis of 15, 200/mm3 and eosinophilia of 11.5%. Based on her clinical presentation and histological confirmation, she was diagnosed with DRESS syndrome. Both sertraline and aripiprazole were discontinued prior to admission and during her hospitalization she was treated with intravenous prednisone, diphenhydramine, hydroxyzine, and underwent daily hydrotherapy. After six days the rash improved and the patient was discharged home.

Discussion: DRESS syndrome is a rare, potentially life-threatening, drug-induced hypersensitivity reaction that includes skin eruption, hematologic abnormalities (eosinophilia and atypical lymphocytosis), lymphadenopathy, and internal organ involvement (liver, kidney, lung).[1-3] The diagnosis of DRESS syndrome is based upon the combination of clinical features (history of drug exposure), cutaneous findings, systemic findings (fever, lymphadenopathy, and visceral involvement), laboratory findings such as leukocytosis with eosinophilia >700/microL and/or atypical lymphocytosis, and histologic findings. DRESS syndrome is primarily a drug-specific immune reaction caused by latent viral reactivation of various herpes viruses.[4,5] The reaction usually begins two to six weeks after the initiation of the offending medication.[6] Antiepileptic agents and allopurinol are the most frequently reported causes. Identification and prompt withdrawal of the offending drug is the mainstay of treatment.[3]

In this case, the diagnosis of DRESS syndrome was confirmed both clinically and histologically. We conclude that sertraline was most likely the causative agent as aripiprazole has no reports of associated rash in the literature.[10] Furthermore, DRESS syndrome has been associated with the use of antidepressants such as desipramine, amitriptyline, and fluoxetine.[11]

Conclusion: DRESS syndrome is a potentially life threatening adverse drug reaction that can be infrequently induced by some of our most commonly prescribed antidepressant medications.

HIGH DOSE LORAZEPAM EFFECTIVE AND SAFE IN THE TREATMENT OF SEVERE, TREATMENT-RESISTANT ANOREXIA NERVOSA: A CASE REPORT

Lead Author: Brendon Brockmann, M.D.
Co-Author(s): Jody Rawles, M.D.

SUMMARY:

INTRODUCTION

Anorexia nervosa is an eating disorder characterized by an intense fear of gaining weight and immoderate food restriction, resulting in persistent behavior that interferes with weight gain. Anxiety disorders are commonly comorbid with anorexia nervosa (as high as 50% of the time), and the process of refeeding is often particularly anxiety-provoking in this patient population. In these situations, benzodiazepines may be a useful adjunct to the treatment plan, particularly during the initial refeeding phase of treatment when optimizing a patient's nutritional status is critical. We present a case in which very high doses of lorazepam were effective and safe in stabilizing a patient with severe anorexia in critical condition.

CASE SUMMARY

A 24-year-old woman with anorexia nervosa, purging type, was admitted to the medicine service for treatment of electrolyte abnormalities (hypokalemia, hypophosphatemia, hypomagnesemia), and hypotension caused by severe malnutrition from poor oral intake. Patient's BMI at time of admission was 11.9 kg/m2 (a BMI <15 kg/m2 is considered "extreme" in DSM 5), and her potassium was very low, fluctuating in the 2.5-2.9 range. The patient required continuous supervision to monitor for severe purging behavior. Nasogastric tube placement was necessary due to poor oral intake, but she frequently refused nasogastric tube feeds as well. To treat patient's severe anxiety associated with eating, she was started on oral lorazepam with some alleviation of anxiety, but the dose had to be frequently increased to maintain the same effect. Due to persistent purging episodes preventing weight gain, she was eventually transitioned from oral lorazepam to an IV drip in the ICU. She ultimately required extremely high doses of lorazepam to effectively treat her anxiety, with the highest dose being 7.5mg/hr, or 180mg total within a 24-hour period. Of note, the patient did not experience any adverse effects on these extreme doses of lorazepam, and her vital signs remained stable, never requiring respiratory assistance. Her purging episodes decreased in frequency with high dose lorazepam, allowing her BMI to gradually increase from 11.6 to 16.1 kg/m2.

DISCUSSION

It is remarkable that high dose lorazepam was both effective and safe in stabilizing this patient in critical condition by causing a decrease in purging episodes, allowing gradual weight gain. These findings suggest that in cases of severe anorexia nervosa in which the patient's life is in immediate jeopardy from extreme malnourishment, one may consider short-term treatment with high dose lorazepam or another benzodiazepine in order to stabilize a patient in critical condition. As always, the dose should be titrated to the individual patient's response. Caution should always be exercised when a patient is on high doses of a benzodiazepine, and continuous monitoring on telemetry in strongly advised.

BENZODIAZEPINE MAINTENANCE TREATMENT IN SCHIZOPHRENIA

Lead Author: Lauren Broderick
Co-Author(s): Lauren Broderick, B.S., Simriti Chaudhry, M.D., Julie B. Penzner, M.D., Jonathan Avery, M.D.

SUMMARY:

Background: Given conflicting data about the utility of benzodiazepines in management of schizophrenia with comorbid substance use, we present two cases that offer support for benzodiazepine maintenance therapy.
Cases: Ms. A. is a 54-year old woman with schizophrenia and a 17-year history of benzodiazepine and opioid use. Upon taper of a four-year regimen of 80 mg methadone, 240 mg oxycodone, and 30 mg diazepam, the patient underwent several psychiatric hospitalizations for psychotic decompensation. Prior to initial hospitalization, the patient had experienced psychotic symptoms, but had not been treated with medications or therapy. During her most recent admission, the patient was started on clonazepam and haloperidol decanoate, with improvement of psychosis.
Mr. B is a 29-year old man with schizophrenia complicated by tardive dyskinesia, plus remote history of LSD and cocaine misuse. He was admitted psychiatrically for clozapine initiation and lorazepam taper. He had been started on lorazepam 1.5 mg/day while catatonic four years prior to admission, and his lorazepam dose escalated over the ensuing years to 10 mg/day. He believed this dose addressed his paranoia and somatic delusions. While on lorazepam 10mg daily, he was concurrently taking risperidone 3 mg BID. He remained consistent in his belief that only lorazepam alleviates his psychotic symptoms. As of this writing, he is on a therapeutic clozapine dose yet is reluctant to taper lorazepam.
Discussion: In schizophrenia, benzodiazepine monotherapy or adjunctive use to antipsychotics has been assessed with conflicting results (Dold et al. 2012). Literature reporting GABA dysfunction in schizophrenia suggests a role for benzodiazepine use (Guidotti et al. 2005). By targeting GABA-A receptors, benzodiazepines might normalize GABAergic transmission, allowing for a novel mechanism of treatment for psychosis. Agonist substitution might be an alternative for these patients who require prolonged benzodiazepine use (Liebrenz et al. 2010). Using this model, maintenance treatment with a long-acting, slow-onset benzodiazepine would be analogous to methadone maintenance for opiate use. By using benzodiazepines with stable blood levels, patients would be less likely to experience sedation, withdrawal complications, and craving. Thus, in patients using benzodiazepines for relief of psychotic symptoms, we present a role for maintenance therapy using agonist substitution.

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WORRYING SO MUCH IT HURTS: THE LINK BETWEEN ANXIETY AND CHRONIC, NON-PHYSIOLOGIC PAIN

Lead Author: Cameron Brown, D.O.
Co-Author(s): David Williamson, M.D.

SUMMARY:

Objectives:
1. Discuss factors involved that may lead to develop chronic pain as a manifestation of anxiety.
2. Demonstrate anatomical and physiologic components that connect the feelings of anxiety with the development of worsening pain.

3. Discuss appropriate treatment to include pharmacologic, psychotherapeutic, and possibly complementary and alternative treatment modalities.
Background: Anxiety and chronic pain frequently occur as co-morbid conditions. All too often patients are seen by physicians who only treat one aspect of this with poor, as they are invariably linked to one another. The proper approach involves understanding and treating the underlying cause of the anxiety, rather than disregarding the anxiety and focusing on pain control.
Case Description: This case involves a 47 yo male, who was diagnosed with an anxiety disorder after a traumatic event in his life. Afterwards, the patient was unable to handle any life stressors without experiencing prominent tremulousness, excessive worry, muscle tension, and tachycardia. Pt developed chronic back pain and was eventually treated with large amounts of opioids for pain control, as well as, benzodiazepines for anxiety. Patient reported that due to poor pain control, he eventually was put on disability from work. Patient's poor pain control persisted despite having no anatomical abnormalities or findings on MRI. Pt's pain was exacerbated by increased stress levels.

Conclusion: This case highlights the power of the mind-body connection, which is often overlooked in today's healthcare system. The co-morbidity of pain and anxiety is significant and is not as well researched as the link between pain and depression. Considerably more work in this area will be needed before this phenomenon can be fully understood and treated with maximum effectiveness.

WITHDRAWAL DELIRIUM FROM INTERNET PURCHASED PHENIBUT - A CASE REPORT

Lead Author: Stella Cai, M.D.
Co-Author(s): Tina Allee, M.D., Adrian Preda, M.D.

SUMMARY:

Introduction: Phenibut is a psychotropic drug sold in Russia to treat symptoms of anxiety, post traumatic disorder, and insomnia. This medication is not FDA approved for pharmaceutical use in the U.S but is easily accessible as a supplement at local stores or online websites. To date, there are a few case studies about this compound's toxicity but no prior reports on its potentially life threatening withdrawal effects.
Case summary: This is a case of a 34 year-old Caucasian male with self-reported anxiety disorder who has developed withdrawal delirium from Phenibut after abrupt discontinuation from months of usage. He was initially evaluated in the Emergency Room for hearing "God's calling" after stopping Phenibut two days ago. He was using 10-20g of Phenibut daily in a tea fusion. Considering temporal course of Phenibut's gabaminergic effects, Mr. A was discharged and started on gabapentin to treat the phenibut withdrawal supplemented by quetiapine for the symptomatic treatment of psychosis. Two days after, which is his fifth day off Phenibut, Mr. A was followed at outpatient clinic. He was disoriented and severely psychotic, lying in a fetal position on the floor of waiting room. Patient was immediately escorted to the Emergency Room, where lorazepam IV and supportive care were given. Despite that, patient developed severe psychomotor agitation and was tremulous, requiring soft restraint for a few hours. He was eventually admitted to MICU. EEG, EKG, and labs were unremarkable. Lorazepam IV was prescribe as per a traditional alcohol withdrawal protocol. During his five days of hospitalization, no significant autonomic instability was detected with vitals within normal range. By fifth day of hospitalization, Mr. A was oriented, without psychosis. He was discharged home with quetiapine extended release 200mg at bedtime and gabapentin 600mg every 8 hours. Patient remained stable without psychosis in the two-month phone follow-up.
Discussion: Multiple reports exist in gray literatures such as drug-forum.com on the withdrawal effect of Phenibut. However, this is the first official report describing the course of withdrawal delirium from Phenibut. Per internet search, Mr. A was taking twice of the typical dose recommended about 2.5- 10g daily, which might contribute to developing severe withdrawal. Phenibut has a unique phenyl ring enabling more permeable access across blood-brain barrier, thus exerting a powerful gabaminergic effect on the brain. Although Phenibut has similar gabaminergic effects as alcohol, Mr. A did not develop autonomic instability, typically seen in delirium tremens from alcohol or benzodiazepine withdrawal.

Conclusion: The abrupt discontinuation from Phenibut could produce life-threatening withdrawal. In acute withdrawal, lorazepam IV could be used following the traditional alcohol withdrawal protocol. After the acute phase, patient could be managed on an atypical antipsychotic and gabapentin for residual symptoms.

CHILDHOOD FUNCTIONAL ABDOMINAL PAIN SYNDROME

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

SUMMARY:

Background Information
Functional abdominal pain syndrome (FAPS) is common in children with complaints of chronic abdominal pain. FAPS, described by the American College of Gastroenterology, is one of the functional, or non-physiologic, gastrointestinal disorders, and corresponds to the DSM-5 psychiatric diagnosis of somatic symptom disorder with predominant pain. Patients with functional abdominal pain syndrome have a high rate of healthcare utilization and of school/work absenteeism contributing to an economic burden to both the patient and the healthcare system. It is very important to quickly identify and treat these patients appropriately without perpetuating unnecessary workups.
Clinical Vignette
An eleven-year-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 pharmacologic therapies have been shown to be potentially beneficial in the treatment of FAPS including H2 blockers, SSRI's, and SNRI's. 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.

THE MENTAL HEALTH IMPACT OF THE REFUSAL TO EXPAND MEDICAID BY SOME STATES

Lead Author: Uchenna Achebe, M.D., M.P.A.

SUMMARY:

There are about 6.7 million uninsured Americans with severe mental illness (SMI) and/or substance use disorder (SUD) who are eligible for health insurance coverage under the New Medicaid Expansion Program. Nearly 4 million uninsured people with SMI and/or SUD are eligible for coverage through the Medicaid Expansion Program in the 25 states that have opted out of the program. This group of 25 states represents 55% of all uninsured people with SMI and/or SUD who are eligible for coverage. Sadly, the burden of the decision made by these 25 opt-out states is falling disproportionately on residents of 11 Southeast opt-out states who are also among some of the poorest in the nation. This is because nearly

80% (2.7million people) of individuals with SMI and/or SUD who are eligible for coverage (3.7million people) live in the 11 Southern opt-out states (Miller,2014).

THE SECRETS OF CEREBELLUM - A CASE OF CEREBELLAR COGNITIVE AFFECTIVE DISORDER

Lead Author: Shanel Chandra, M.B.B.S.
Co-Author(s): James Demar, MD

SUMMARY:

INTRODUCTION:
Although mentioned in a few anecdotal reports, a comprehensive assessment of non-motor affect of cerebellar pathology was not available till 1990s. It has been described in patients with stroke, traumatic brain injuries, neurodegenerative diseases involving cerebellum, infectious involvement of cerebellum and cerebellar neoplasms. In children, it has been described presenting early in life with delayed milestones and other motor dysfunctions being the initial manifestation. The constellation of executive, visuospatial, and linguistic changes forms the core of intellectual deficits of CCAD. Dysmetria of thought has been conceptualized by some to explain the cognitive affects of cerebellar dysfunction and problems with sequencing has been found to be a consistent feature of the pathology.
CASE PRESENTATION:
We present a case of 17 y/o adolescent male who was diagnosed as CCAD after incidental finding of cerebellar atrophy on neuroimaging done after a mild concussive injury. The patient had a known history of low IQ tested when he was 9 years old done to assess problems with his academic performance at that time. Since his formal neuropsychological assessment, he has had persistent deficits in working memory, processing speed and visuomotor skills. He continues to suffer from disorganized thinking, transient paranoia, rapid and intense mood swings, anxiety and social difficulties. He displayed many negative symptoms including flat affect, lack of motivation and poverty of speech. Clinically he was thought to have prodromal symptoms of Schizophrenia. His diagnostic impression was psychotic disorder; NOS, mood disorder; NOS, learning disorder; NOS and rule out generalized anxiety disorder.
In 2012, as a 16 year old adolescent, he fell from his bike and had a concussion injury with questionable loss of consciousness. A CT head revealed diffuse cerebellar atrophy which was confirmed on MRI of brain. Detailed neurological examination revealed mild ataxia. Assessment by a geneticist did not reveal any known abnormality. He was given a diagnosis of CCAD and is being managed with multi-disciplinary approach.
DISCUSSION:
Our case indicates that motor manifestations of cerebellar pathology can be subtle and be missed or not present altogether initially in a case of CCAD. Cognitive effects of cerebellar dysfunction might be more prominent requiring high index of suspicion for accurate diagnosis. More awareness regarding this entity shall be helpful in bringing forth more cases of CCAD without any motor manifestation. It will help in better management and understanding of the disease. Further studies are needed to assess prevalence of cerebellar atrophy in presence of "dysmetria of thought" and cognitive disabilities involving "sequencing".

SYMPTOM CHANGE IN HOARDING DISORDER COMORBIDITY IN MILD INTELLECTUAL DISABILITY PATIENT ON A TOKEN ECONOMY: A REPORT OF A CASE

Lead Author: Jae Hyeok Chang, M.D.
Co-Author(s): Jang Won Cho, M.D., Hwi Gon Kim, M.D., Dong Hoon Oh, M.D., Ph.D., Joon Ho Choi, M.D., Ph.D.,
Yong Chon Park, M.D., Ph.D.

SUMMARY:

Introduction
Compulsive hoarding has been defined as collection and being unable to discard excessive quantities of goods and objects that are of limited or no value (Frost and Hartl 1996). In most of existing studies about comorbidity, patients were excluded if they had shown significant cognitive impairment. Therefore, current compulsive hoarding researches on patients with intellectual disability are lacking. The cognitive approach, known as the most efficient treatment of hoarding disorder, does not work well with patients with intellectual disability due to the significant limitations in terms of intellectual functioning and skills necessary in daily life. In this report, we describe one case regarding this issue with a patient who has comorbidity with hoarding disorder and mild intellectual disability.

Case Report
A 41-year-old woman was admitted to our psychiatric hospital due to symptoms of hoarding. Her IQ score turned out to be 69. She started collecting waste since 10 years ago. But it was not at a serious stage yet. Two months ago, her father left after a huge fight with her mother and her symptoms became worse since her father`s departure as there was no one to take care of her. For the reason, she had to be admitted to our hospital although she had never received psychiatric treatment before. However, the treatment with cognitive approach was not successful as we had expected due to her intellectual disability. Therefore, we decided to apply 'token-economy' to her whereby she was hospitalized for 8 weeks. She was treated with drugs, such as SSRI (Paroxetine 50mg), for the first 4 weeks and the combination of initial drug treatment and token economy application for the last 4 weeks. To obtain the effectiveness of the treatment, we measured the Clutter Image Rating (CIR; Frost, et al 2008) and obtained the number of collected points every day. During the whole period of treatment, she was able to purchase what they requested, with the token obtained by keeping certain set of rules. Comparing the initial medication treatment of the first 4 weeks with the combined treatment with token economy application of the late 4 weeks, the CIR was diminished from 4 points to 2 points. Also the number of items obtained on a daily basis declined from an average of 5 to 1.5. She started taking the token as an important matter rather than obsessing over countless unnecessary goods As a result, her behavior changed as well. Her hoarding symptoms have significantly decreased resulting in her release from the hospital scheduling regular outpatient treatments.
Discussion
From this case, we found out that token-economy has positive effects on patients who have comorbidity with hoarding disorder and mild intellectual disability. Also, this behavioral treatment can be effective on patients who have difficulties in undergoing cognitive approach. Clinicians should carefully choose the treatment plan for hoarders by examining their comorbidity.

INTRAMUSCULAR OLANZAPINE INDUCED BRADYARRHYTHMIC SHOCK: A REPORT OF TWO CASES

Lead Author: Jang Won Cho, M.D.

Co-Author(s): Dae Ho, M.D., Ph. D., Jae Hyeok Chang, M.D., Hwi Gon Kim, M.D., Joon Ho Choi, M.D., Ph.D., Yong Chon Park, M.D., Ph. D.

SUMMARY:
Introduction
Olanzapine is a second-generation antipsychotic approved for the treatment of schizophrenia and bipolar disorder. Hemodynamic side-effects such as bradyarrhythmic shock have rarely been associated with olanzapine. We report two cases of olanzapine-induced bradyarrhythmic shock in patients who had no preexisting cardiovascular problem.
Case Report
-CASE 1
A 34-year-old Korean woman was admitted to our psychiatric hospital due to symptoms of a severe manic episode. At emergency room, she was administered intramuscular haloperidol 5mg in an emergency room (at 11:52). At that time her vital sign was stable. At the time of our psychiatric ward admission (at 13:30), her pulse rate was 106/min, blood pressure 150/80 mm/Hg and temperature 36.7'c. And about a hour later (at 14:25), she was administered intramuscular olanzapine 10mg due to excitement. About 30 minutes later (at 15:00), she was pale and began to sweat, her pulse rate was 46/min and blood pressure 60/30 mm/Hg. After administrating epinephrine (15:50), she regained stable condition (pulse rate 63/min and blood pressure 127/74 mm/Hg). After the incident, cardiologic consultant revealed no cardiovascular or other physical origin.
-CASE 2
A 46-year-old Korean woman was admitted to our psychiatric hospital due to psychotic agitation. At emergency room, she was administered intramuscular olanzapine 10mg (at 18:25) and her vital sign was stable at that time. But 20 minutes later (at 18:45) she complained of dizziness, her pulse rate was 40/min, blood pressure 70/30 mm/Hg. We positioned her for leg elevation and hydrated, and about 20 minutes later (at 19:05) her vital became stable, her pulse rate was 80/min, blood pressure 112/62 mm/Hg. After admission, she was consulted for cardiovascular origin of the incident, but no other cause was found.
Discussion

Previous case reports emphasize that old age may exaggerate the adverse effects of olanzapine. But our case reports emphasize that at young age may also olanzapine can induce bradyarrhythmic shock even those without any history of a heart problem. Thus, olanzapine injection should be following careful monitoring, especially during initial use at high dosage.

Keywords: neuroleptics, olanzapine, hypotension, bradycardia, bradyarrhythmic shock

COLEUS BLUMEI A BACKYARD PSYCHOTROPIC: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Nitin Chopra, M.D.
Co-Author(s): Lon Hays, MD, MBA

SUMMARY:

Case Report:
Mr.O is a 21 year old Ecuadorian, coming to the emergency room with disorganized thoughts, odd laughter, and erratic behavior. He had been speaking "gibberish," randomly praying, playing the "air guitar," and ran out of the shower naked and started "rolling around in the dirt," after attending a party.
Tests conducted included a complete blood count, comprehensive metabolic panel, thyroid stimulating hormone, and acetaminophen, salicylate, and blood alcohol levels. All were normal. A comprehensive urine drug screen was negative. CT of the brain without contrast was unremarkable. In the ER, he received ziprasidone 10 mg intramuscularly twice.
Mr.O was admitted to the inpatient psychiatric unit, spending much of his five day admission in seclusion. He was started on risperidone 1 mg orally twice daily. This helped a bit, but he remained disorganized and religious preoccupations worsened. On day two, he was preoccupied with "love" and paranoid about his medications, family, work, and substance abuse. The risperidone dose was doubled.
Collateral information was obtained from his family, colleagues, and psychologist, who denied any known psychiatric illness or family history. Mr.O had previously tried LSD. They learned, through Facebook posts, that his clinical presentation coincided with the use of a potentially psychotropic plant, Coleus blumei.
Mr.O improved significantly. However, his paranoia surrounding substance abuse, which he denied, and potential implications on his employment persisted.
Discussion:
Coleus blumei, from the mint family, is naturally found in Africa, Asia, Australia, and the Pacific Islands. Readily found, they are popular in gardens and prized for their intense leaf colors.
Salvia divinorum is from the same family and has the hallucinogen neocleordane diterpene salvinorin-A, which is unique because unlike most hallucinogens being psychoactive by acting at the 5-HT2A serotonin receptor, this is a nonnitrogenous á´‹-opioid receptor agonist. Coleus blumei may have similar psychoactive properties.
Traditionally, Salvia divinorum was consumed by Mazatec Indians of Oaxaca, Mexico. Mexican folklore describes the Coleus as a variant from Europe. The relative potency has been debated, with belief that the Coleus blumei was medicinal, in comparison to the psychotropic Salvia divinorum.
Understanding of the psychotropic effects of Coleus blumei is limited. The Erowid Experience Vaults attempt to chronicle various drug experiences. The plant was reportedly consumed by smoking, chewing, and steeping. Vivid dreams and euphoria were described.
Conclusion:
Coleus blumei, a possible psychotropic, is understudied, as our knowledge of related biochemical and physiological activity remains very limited. Inability to identify active and contributing metabolites to psychopathology, limitations in our understanding of metabolism of this plant, and lack of awareness of appropriate treatment, warrants further study.

CHRONIC DIMENHYDRINATE ABUSE MASQUERADING AS PRIMARY PSYCHOTIC AND COGNITIVE DISORDERS: A CASE REPORT AND REVIEW OF LITERATURE

Lead Author: Elaine S. Chow, M.D.
Co-Author(s): Usha Parthasarathi, MBBS, Ana Hategan, M.D.

SUMMARY:

We report a case of chronic dimenhydrinate abuse that had masqueraded for several years as a primary psychotic and cognitive disorder.
Case: A 45 year old Caucasian female with past diagnoses of schizophrenia, schizoaffective disorder, and cognitive disorder NOS was

admitted to a psychiatric unit for recurrent episodes of persecutory delusions, command-type hallucinations to harm others, and fluctuating mood and cognitive symptoms. She improved with minimal changes to her community treatment regimen of antipsychotic medication. On several overnight passes, she returned to the unit with acute exacerbations of her psychiatric symptoms, with the resolution of such symptoms within 48 hours. Routine urine drug screens were repeatedly negative. The patient eventually disclosed to abusing dimenhydrinate 1250mg per day, noting euphoria, "numbness", and a "high" with its use, as well as visual and auditory hallucinations and short term memory loss. She admitted the emergence of her psychotic symptoms began after the start of recreational dimenhydrinate use. She described withdrawal symptoms marked by dysphoria, cravings, confusion, and episodes of crying. She noted widespread use within her circle of friends and wider community. Her diagnosis was changed to substance-induced psychotic disorder. She expressed limited motivation in substance abuse rehabilitation and subsequently left the hospital against medical advice.

Discussion: Over the counter (OTC) substance abuse is defined as the intentional use of commercial products for psychoactive effects as opposed to for their intended purposes. The abuse of dimenhydrinate, an OTC antiemetic, has been reported in the past yielding anxiolytic, antidepressant, and anticholinergic effects desirable to users often of adolescent age. A review of literature reveals case reports of hallucinogenic and amnestic effects in acute dimenhydrinate intoxication. Dependence and withdrawal symptoms have also been described. Patients with underlying primary psychotic disorders receiving antipsychotics may self-administer dimenhydrinate for its anticholinergic action to reduce antipsychotic side effects, and clozapine treatment in this population may diminish cravings. Overall there has been a paucity of attention directed to dimenhydrinate abuse over the last decade.

This case illustrates the potential for dimenhydrinate abuse to be identified for years as a primary psychiatric disorder. Diagnosis is complicated by reliance on subjective reporting, and often routine blood work and urine drug test fail to demonstrate stigmata of this abuse. Gas chromatography-mass spectroscopy may aid in detection but is limited by lack of availability and expense. Thus often the onus of an accurate diagnosis lies with the clinician asking relevant OTC abuse questions. Further consideration of exploring misuse/abuse of atypical drugs such as dimenhydrinate in the context of unusual psychiatric presentations is desirable.

“NEUROPSYCHOLOGICAL ASSESSMENT IN PATIENTS WITH SCHIZOPHRENIA AND IT'S CORRELATION WITH FUNCTIONALITY AND PRELIMINARY RESULTS”

Lead Author: Juliana S. Cunha, M.D.
Co-Author(s): Fabiana B. de Araujo, Simone M. Felipe, Priscila M. Mundim, Lucas G. Jr., Flavia C. da Mata Leite, M.D., Tatiana Lourenco, M.D.

SUMMARY:

Introduction: Cognitive impairment is considered a core feature of schizophrenia. It is reported since Kraepelin (1896), who has named it "Dementia Praecox". Since then, it has been the focus of several studies that indicate as main altered processes: executive function, attention and memory. These impairments have been linked to a major impact on the functionality and quality of life of these patients. Objectives: Assess cognitive domains in schizophrenia patients and correlate them with functionality and quality of life. Method: The sample consisted of ten outpatients diagnosed with schizophrenia, which were submitted to a battery of neuropsychological tests. Their records were researched to support the data. We also evaluated the quality of life through the Portuguese version of WHOQOL-Bref (Vaz-Serra et al., 2006). Results and conclusion: Impairments were found in several domains of cognition among the evaluated patients, including executive deficits, attention disturbances and processing speed. We have noticed significant negative correlations between them and the quality of life. Therefore, our results seem to emphasize that neurocognitive constructs should be potential targets for intervention to promote improvement of psychosocial functions.

TREATMENT OF PARADOXICAL INSOMNIA DISORDER WITH OLANZAPINE AND ELECTROCONVULSIVE THERAPY: A CASE REPORT

Lead Author: Amy E. Curtis, M.D.
Co-Author(s): Hrayr P. Attarian, M.D., Gaurava Agarwal, M.D.

SUMMARY:
A mismatch between perceived sleep quality and objective measures such as polysomnography (PSG) or actigraphy occurs in many patients with chronic insomnia disorder. Previously categorized as a distinct subtype of insomnia known as paradoxical insomnia or sleep state misperception, newer classifications by the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and the 3rd edition of International Classification of Sleep Disorders (ICSD-3) transform the view of insomnia to account for independent and comorbid psychiatric and sleep syndromes. The ICSD-3 has only a single diagnostic entity, Chronic Insomnia Disorder, which encompasses all past variations including those with and without comorbid diagnoses. A recent study exploring differential psychological profiles in chronic insomnia with objectively short sleep and insomnia without any objective evidence of curtailed sleep found an association between paradoxical insomnia and depressed mood, anxiety, and intrusive thoughts. Psychiatric comorbidity, however, occurs in most cases of chronic insomnia approaching a prevalence of 40-50%. Regardless, there is evidence to suggest that what was known as paradoxical insomnia is an extreme manifestation of a distinctive feature of chronic insomnia disorder, and may be representative of a delusional disorder or form of agnosia.
Described is the case of a 64-year-old former physician admitted to a psychiatric hospital after a suicide attempt. He expressed suicidality as secondary to his 30-year history of insomnia, worsening to the severity of reported absent sleep for three days prior to admission. Despite insomnia resistant to conventional therapies, the patient demonstrated excellent response to a combination of olanzapine and electroconvulsive therapy (ECT) as monitored by psychiatric evaluation, the Beck Depression Inventory (BDI), PSG, and 4-month follow-up interview. Included is a discussion regarding newer classifications of insomnia in DSM-5 and the ICSD-3, with associated restructuring of diagnostic subtypes to account for a more enhanced description of comorbid conditions.

THE INTERFACE OF DERMATOLOGY AND PSYCHIATRY: A CASE REPORT OF DELUSIONAL PARASITOSIS

Lead Author: Christopher S. Czapla, M.D.
Co-Author(s): Phebe Tucker, M.D.

SUMMARY:
Background: Delusional parasitosis is a disorder with a broad differential diagnosis that can occasionally result in an extensive diagnostic work-up and visits to several different providers in different areas of specialization. Diagnosis and treatment requires not only ruling out medical causes of symptoms and proper pharmacological treatment, but also extensive knowledge of the typical characteristics of patients with this disorder including reluctance to accept the diagnosis.
Case: This is the case report of a 53-year old female with a chief complaint of "bugs" crawling through her body for three months. A diagnosis of delusional parasitosis was made after she visited several different physicians and underwent numerous diagnostic tests. She was successfully treated with risperidone and psychotherapy.

POSTICTAL PSYCHOSIS FOLLOWING VIRAL ENCEPHALITIS; A CASE REPORT AND REVIEW OF THE LITERATURE

Lead Author: Tracey Dabal
Co-Author(s): Muhammad Puri, M.D.
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SUMMARY:
Introduction:
Psychosis is a serious mental disorder characterized by hallucinations, distortion of sensations, delusions, and thought disorders. When it is associated with seizures, it is generally split into two groups. When the psychosis occurs immediately after seizures; it is called postictal psychosis (PP). It is called interictal psychosis when it occurs in between seizures but is not related to the seizures themselves.
Case:
A 25yo Filipino female was brought in by her husband, saying that she had been hearing voices and exhibiting paranoia for the past month. The patient has no past psychiatric history but does reports a past suicide attempt

at age 17, she has a family history of seizures and a past medical history of viral encephalitis in 2004, which resulted in complex seizures. The seizures were controlled with oxcarbazepine, valproic acid, and phenobarbital for the first 6 years. From 2010-2012, the patient had 3 separate admissions to the hospital for seizures, each due to noncompliance with taking her medications. In 2012 the patient was brought in by her husband, for the severe delusions and paranoia. Physical exam, and routine blood tests were all within normal limits, A repeat EEG was performed and showed a "diffuse slowing and epileptiform activity present in the left temporal region." After admission to the unit, her hallucinations and paranoia decreased and she no longer was having seizures. She was discharged in stable condition 11 days later with appropriate follow up outpatient appointments and anti-seizure medications.

Discussion:

Reviewing the case, the patient had viral encephalitis followed by a series of epileptic episodes and finally developed PP (schizophrenia paranoid type) due to general a medical condition. Multiple studies have been done to recognize this disorder and to improve the treatment. In one study forty-four patients with treatment-refractory temporal lobe epilepsy and a history of clustering of seizures, showed that these patients appear to be particularly prone to development of a psychotic disorder.

Prompt recognition of PP is critical to minimize morbidity. According to a literature, the duration of PP varies from 12 hours to more than 3 months. Impaired intellectual function and family history of psychosis predict a longer psychosis. Recurrent PP is seen in 12 percent to 50 percent of patients and occasionally may progress to an interictal psychosis.

Conclusion:

PP is a common psychiatric complication of chronic epilepsy. Recognition of this disorder is critical to initiate treatment and avoid significant morbidity and mortality. Seizure control can prevent PP, which is often recurrent and can be associated with progressive interictal behavioral changes. Fortunately, it responds to low dose treatment with benzodiazepines or antipsychotic medications. Though the best treatment of PP is uncertain, it is of utmost significance to prevent it by eliminating its cause of seizures.

CHANGING COURSE: A CASE STUDY ON THE REVERSIBILITY OF VALPROIC ACID INDUCED OBESITY

Lead Author: Erin M. Dainer, M.D.

SUMMARY:

Background: Valproic acid is known throughout the literature to cause obesity, insulin resistance and possibly atherosclerosis; all of which encompass the metabolic syndrome. Currently we reside in an age where increased awareness of metabolic syndrome dramatically influences our medication choices. Multiple articles have explored the effect of valproic acid on weight gain in comparison to comparable medications, but few to none have reviewed the effects of switching to a different medication after long-term treatment with valproic acid.

Case Description: A 32 year old male with a history of Major Depressive Disorder and Generalized Anxiety Disorder presented to the clinic for medication management after a 4.5 year history of treatment with nortriptyline 150mg daily, mirtazapine 15 mg daily, lorazepam 1.5mg at bedtime and valproic acid extended release 1500mg at bedtime. At the time of treatment his body mass index (BMI) was 21kg/m2 with a weight of 143lbs. Over the course of 4.5 years, he gradually gained a significant amount of weight. By the time of presentation, his BMI had increased to 27.5kg/m2 with a weight of 185.8lbs. At that time, he was tapered off of valproic acid. During the next visit, the patient reported an increase in anxiety, irritability and angry outbursts. Therefore, oxcarbamazapine was initiated. After the adjustments in his medication, he felt significant relief. He also reported an increase in motivation due to resolution of sedation caused by valproic acid. Over the next 6 months, he began to dramatically lose weight with a BMI of 24.8kg/m2 and a weight of 168lbs. During that time, his only other medication changes were a decrease of nortriptyline from 150mg to 125mg and an increase in mirtazapine from 15mg to 30mg. Throughout treatment, his blood pressure and serum cholesterol remained stable.

Discussion: In light of the current obesity epidemic, appropriate medication adjustments are imperative. Awareness of patients' weight and blood pressure are vital to appropriate care. Often, concerns over exacerbating psychiatric symptoms prevent physicians from changing

medications. Our case illustrates the effectiveness in changing medications when the trend towards weight gain arises without detrimental effects on symptom control. Although the patient had adequate control of irritability and anxiety symptoms while receiving valproic acid, the consequences of the medication outweighed its benefit. By tapering the patient off of valproic acid and initiating oxcarbamazapine, the patient maintained good control of his psychiatric well-being without compromising his general health.

RISPERIDONE-INDUCED PRIAPISM: A CASE REPORT

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

SUMMARY:

Priapism, defined as greater than 4 hours of penile erection not initiated by sexual stimulation, is caused by medications, hematologic disorders, substances, malignancies, trauma, and metabolic conditions. It is a urologic emergency which can lead to impotence and tissue necrosis. Treatment includes conservative management, corporal aspiration, injection of sympathomimetic agents, and surgical intervention. Antipsychotics have been shown to cause priapism through alpha-1 adrenergic antagonism. We present a case of priapism caused by Risperdone in a patient with a prior episode caused by Trazodone.

Pt is a 50 year old Caucasian male with a history of Schizophrenia and no known past medical history, was admitted for 18 hours of penile erection associated with swelling and severe throbbing pain. He denied history of illicit substance use, hematological illnesses or penile trauma. His only medication was Risperidone 3mg BID which he began 1 month prior. He reported an episode of similar symptoms 5 years ago related to Trazodone for insomnia. He delayed presenting to the ED as he was unaware of this side effect and assumed it would resolve on its own. He was diagnosed with non-ischemic priapism secondary to psychotropic medications by Urology. He underwent drainage of the corpus cavernosum twice along with intracavernosal phenylephrine injections. Psychiatry was consulted for medication recommendations. At evaluation, he denied symptoms of depression, mania, anxiety and psychosis. Historically his psychosis symptoms included auditory and visual hallucinations which he had not experienced in over a year. Risperidone was discontinued. Since he had no acute symptoms and a prior episode of priapism from Trazodone, he was not started on new medications and was referred for outpatient follow up. His symptoms completely resolved after 24 hours.

Priapism is an uncommon side effect of antipsychotics that patients should be made aware of. Atypical and typical antipsychotics have been associated with it. For typical antipsychotics, more cases have been reported with low potency agents (chlorpromazine) compared to high potency agents (haloperidol) due to the level of alpha-1 adrenergic antagonism. For atypical antipsychotics, Risperidone and Zisprasidone have the highest antagonism at alpha-1 and Olanzapine the lowest. Risk factors include recent dose or medication changes, re-initiation of medication after noncompliance, concomitant substance use, and/or use of other medications causing priapism. Patients with prior episodes are at higher risk of latter episodes. This case illustrates the importance of proper patient education and obtaining complete histories. Due to priapism severity and absence of psychiatric symptoms, new medications were not started as the risks outweighed benefits. In other cases, a medication with less alpha-1 antagonism can be considered. Patients should be educated on priapism risk and advised to present to the ED for symptoms.

MALADAPTIVE DENIAL REVISITED: CASES SUPPORTING THE CONSIDERATION OF MALADAPTIVE DENIAL AS A MODIFIER FOR ADJUSTMENT DISORDER IN THE DSM

Lead Author: Deron E. Davis, B.S.
Co-Author(s): James Fisher, M.D., Parmalee Towb, M.D., Ph.D., Michael Mrizek, M.D., Harold Wain, Ph.D.

SUMMARY:

Introduction:

The challenge of the patient in denial is a common experience among clinicians. Though denial is frequently reported in the setting of terminal illness, it has also been encountered in a variety of more benign

circumstances and poses an intriguing phenomenon. Where denial offers the patient an opportunity to mitigate trauma by gradually accepting a new diagnosis or life circumstance it is considered a healthy and adaptive defense mechanism. However, when it prevents the patient from seeking/accepting treatment or adjusting to new circumstances it is maladaptive, portends poor prognosis and is a potentially dangerous pattern of thinking that should be addressed. Therefore, a key factor in determining the therapeutic approach to denial is accurate characterization of the behavior as adaptive or maladaptive. The inability to progress toward acceptance independently and inability to therapeutically effect change that would improve patient outcomes suggests the maladaptation is in itself psychopathology rather than a symptom of trauma response.

Case Report:

To illustrate features of maladaptive denial, two cases are presented. The first case illustrates maladaptive denial in the setting of breast cancer progressed to stage four before presentation. The second is a case of adjustment disorder in the setting of physical illness and phase of life adjustment.

Discussion:

Denial is a common reaction when faced with traumatic experiences. Suppression of the experience allows the mind to process the insult at a subconscious level prior to consciously accepting a changed reality. Whether by a single instance or an accumulation of lifetime insults, trauma that overwhelms the ability to process yields stagnation in adaptation - becoming maladaptive. These cases present denial that results in dysfunctional behavior, and in the second case cognitive and emotional dysregulation as well. Additionally they illustrate the development of distress hindering participation in important activities, e.g. preservation of health/life and occupational function. It is well accepted that adaptive denial is a construct that should not be dismantled for fear of precipitating psychic decompensation. The sequelae of maladaptive however, suggest that it meets criteria for classification as a qualifier of adjustment disorder if not a distinct mental disorder - a proposal first submitted by Strauss, et al. Further observation and study is needed however, to define a standardized set of qualifying characteristics.

UNCERTAIN ETIOLOGY, EPIDEMIOLOGY, DIAGNOSIS, AND TREATMENT OF PERSISTENT GENITAL AROUSAL SYNDROME

Lead Author: Adriana de Julio, M.D.
Co-Author(s): Merlyn Abraham, BS

SUMMARY:

Introduction: Persistent genital arousal disorder (PGAD) is a condition in which an individual experiences unwanted genital sensations in the absence of mental or physical stimulation. There are cases in which it is accompanied by overactive bladder syndrome and/or restless legs syndrome and is referred to as Restless Genital Syndrome (RGS). There are many theories about the etiology of PGAD ranging from collagen and cartilage defects in the pelvic floor to theories of nerve hyperexcitability. Interestingly psychiatrists have been consulted on these cases as there was a often a misdiagnosis of obsessive compulsive disorder.
METHOD: In order to assess all of the research and case studies mentioning PGAD and RGS we performed a literature review from 2000-Â-2014. We used PubMed, Ovid, and Trip Database with MeSH terms: "persistent genital arousal disorder", "persistent genital arousal syndrome", "persistent sexual arousal", and "restless genital". We were able to find 5 review articles and 39 case reports/case series using these terms. After careful and exhaustive review of each article some important information was collected.
CONCLUSIONS: First it may be that PGAD and RGS are the same diagnoses. Second, that each specialty, be that neurology, psychiatry, or gynecology has their own unique perspective as to the etiology and treatment of PGAD. Third, persons with PGAD may be at higher risk of suicide and some case series have shown these patient have higher rates of depression and anxiety, but the epidemiology is unknown. Lastly, recommendations and guidelines for diagnosis and treating patients with PGAD varies widely within medical specialties from use of antidepressants, to antiepileptic drugs, to surgical manipulation of the dorsal nerve. A more interdisciplinary approach to patient's with suspected PGAD should be utilized.

PEDIATRIC DELIRIUM AND ALPHA-MANNOSIDOSIS : A CASE REPORT

Lead Author: Toral N. Desai, M.B.B.S.

SUMMARY:

Background :Alpha-mannosidosis is a rare lysosomal storage disorder that is inherited in an autosomal recessive fashion and may be characterized by sensorineural hearing loss, intellectual disability, immune deficiency, psychomotor abnormalities and skeletal dysmorphism. Very limited research is available on the pathophysiology and management of such psychiatric symptomatology associated with this rare genetic disorder. The objective of this paper is to understand the complex psychiatric manifestations in an adolescent with alpha-mannosidosis and discuss the clinical dilemmas while managing the symptoms with psychotropic medications.

Methods:

An extensive literature review was conducted to underscore the research on psychiatric manifestations in youth with alpha-mannosidosis. The information thus obtained was applied to the management of an adolescent patient with the disorder, who presented with clear manifestations of delirium, who our team was consulted on. The symptoms included altered mental status along with auditory and visual hallucinations, and sundowning. A medical work up to identify the etiology, along with consultation with his geneticist was sought. After a series of trials of various psychotropic medications, symptoms of delirium were in better control.

Results:

A 13 year-old young female was hospitalized with a recent onset of altered mental status, along with paranoia, visual and auditory hallucinations, and a consult was requested from the pediatric consultation-liaison team. A thorough medical work up didn't provide any clinically significant findings. Use of low dose risperidone was associated with extrapyramidal symptoms, following which olanzapine was initiated. Only mild improvement was noticed with high doses of olanzapine, and this resulted in a cross-titration to quetiapine, following which symptoms reduced significantly.

Discussion:

Psychiatric symptoms in patients with alpha-mannosidosis may often be dismissed as part of intellectual disability, especially in the setting of negative medical work up. Physicians should be aware of the potential for psychiatric symptoms in individuals with this rare disorder. Given the rarity of this lysosomal storage disorder and florid symptoms of delirium, the choice of an antipsychotic became more complex, especially since the pharmacokinetic profile of psychotropics may be very different when compared to youth without such lysosomal disorders.

Conclusion:

Evaluation and management of psychiatric manifestations in youth with lysosomal storage disorders can be complex. Further research will be helpful to determine the outcome and course of psychiatric manifestations in the setting of such disorders.

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THE USE OF ARIPIPRAZOLE IN THE MANAGEMENT OF BIPOLAR DISORDER DURING PREGNANCY

Lead Author: Julian F. DeSouza, M.D.

SUMMARY:

This case study was done to assess the efficacy and potential complications associated with the use of aripiprazole for mania in the setting of pregnancy. Given that current treatment recommendations are causing patients to be less likely to optimally manage their symptoms during pregnancy for concern of teratogenic effects, aripiprazole could be the atypical antipsychotic agent of choice in this setting. This patient had presented 2-weeks postpartum in a manic state with psycotic features. She was screened by Ob-Gyn who collaborated with her care while she was admitted to the psychiatric inpatient unit. Patient had been non-compliant with prescribed medications prior to admission and she was started on aripiprazole from day one and the dose was tapered up to 15 mg BID by day 5. Patient's manic symptoms improved slowly as the days progressed by day 8 psychotic symptoms started to subside. As delivery was imminent, patient was transferred to Ob-Gyn service. She delivered a healthy but premature child via c-section on day 12. Child did not exhibit any gross or anatomic malformations. She was

continued on aripiprazole 15 mg BID after discharge and was seen weeks later in outpatient psychiatry.

OBSESSIVE COMPULSIVE DISORDER? OR IS IT PSYCHOSIS? OR BOTH?

Lead Author: Arashinder Dhaliwal, M.D.

SUMMARY:

Obsessive Compulsive Disorder? Or Is It Psychosis? Or Both?
Background:
Patient suffering from Obsessive Compulsive Disorder can exhibit psychotic features especially delusions during the course of the disease. These delusions represents reactive, affective or paranoid psychosis as they do not meet the criteria of Schizophrenia.
(1)Poor insight in Obsessive Compulsive disorder has shown to be associated with poor response to the medications, more severe illness and high comorbidity rate. (2). MDD was found to be the most frequent comorbid condition with OCD in adolescent. (3)
Obsessive Compulsive Psychosis is the term given to describe an OCD which exists with the poor insight.
(1) Case Report:
Patient is a 15 year old male with two prior psychiatric hospitalization and past psychiatric history of Major Depressive Disorder (MDD), Obsessive compulsive behaviors, anxiety, disorganized thoughts, adjustment disorder and poor ADLs,was admitted due to significant weight loss, inability to eat on his own and inability to ambulate.
He reported of intrusive thoughts which stops him from eating and ambulating. He reported intrusive thoughts of being called gay.
His past history is significant for motor and vocal tics, enuresis, encopresis, learning disabilities, epilepsy and being oppositional to family. He showed cognitive decline in hospital.
Discussion:
Patient had persistent intrusive thoughts of inability to perform daily activities. Patient has compulsions including taking multiple attempts at setting his foot right while walking, pulling up his hand while feeding self. These obsessions and compulsions were present almost all the time he was awake. (4) Patient had symptoms suggestive of psychosis which at times were distinct from OCD. This patient presented with OCD (with poor insight) at an early age, had extensive symptoms with increased severity, refractory to treatment and with multiple comorbid conditions. (2).

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CONVERSION DISORDER IN THE MEDICALLY COMPLICATED PATIENT

Lead Author: Dustin A. Ehsan
Co-Author(s): Phebe Tucker, M.D.

SUMMARY:

Ms. C. is a 33-year-old Caucasian woman on disability who has been suffering from episodes of loss of consciousness since childhood. She has undergone extensive work-up at multiple hospitals and clinics, however has yet to receive an explanation or adequate treatment for her condition, which has left her unable to work and forced her to give up custody of her daughter due to concern for the child's safety.
Of the various diagnoses on the differential, a psychiatric disorder such as conversion disorder (functional neurological disorder) in the form of psychogenic pseudosycnope remains high on the list. However, the patient's complicated medical history and unexplainable physical symptoms make a psychiatric diagnosis a difficult one to make. Understanding and diagnosing psychiatric illness in a patient with a complex medical history is not only crucial to the patient's well being, but also is central in lowering unnecessary work-up and healthcare expenditure.

PSYCHOTHERAPY WITH NON-ENGLISH-SPEAKING HISPANIC ADULTS USING LANGUAGE HELP LINE: A CASE REPORT

Lead Author: Nadia M. El Fangary, M.D.
Co-Author(s): Anka Vujanovic Ph.D

SUMMARY:

Background: In the United States, Hispanic/Latino persons constitute 17% of the population. In Harris County the largest county in Texas, Hispanic/Latino persons comprise 38.1% of the population, 21% of the Hispanic population does not speak English well and 12% does not speak English at all. Hispanics/Latino populations are identified as a high risk demographic for depression, anxiety and substance abuse.

Psychotherapy is considered an evidence-based treatment for these conditions. Yet most psychotherapists and physicians do not speak Spanish, leading to increased use of telephone translation help lines due to their ease of accessibility. However, there is a dearth of empirical evidence regarding such practices; and guidelines are lacking. To contribute to this area of research and underscore its clinical relevance, we present a case report that outlines the challenges of the use of telephone language interpreters during psychotherapy, as evidenced in a university-affiliated community outpatient clinic.

Case report: Patient was a 49 year-old, Spanish-only speaking female from Colombia referred by a primary physician for psychotherapy for anxiety and depression. The patient attended four sessions of psychotherapy with a psychiatry resident at one month-intervals. Sessions were held with the use of a Spanish language interpreter telephone help line.

Discussion: Given the increasing diversity of the US population, language barriers present a significant challenge in conducting psychotherapy. The use of interpreters increases the risk of miscommunication and may negatively affect the therapeutic relationship. The absence of face to face communication poses additional challenges since interpreters are unaware of the patient's expression and body language, elements often necessary for effective translation. There is a need for interpreters to differentiate between literal versus conceptual translation in order to facilitate the identification of speech or thought disorders, and correctly convey culturally-sensitive expressions or topics. Additional challenges include organizational problems such as waiting times for interpreters and; incidences of dropped calls during telephone interpreter assisted sessions.

Conclusion: Future clinical and research directions should be considered to improve telephone translation services and their integration into psychotherapy contexts. Examples include: cultural and mental health education and training for both therapist and interpreter, respectively; assignment of a consistent interpreter for each patient to increase knowledge of the therapeutic context; asking the patients to summarize their understanding of the conversation during the session, to limit miscommunication; allotting additional time for interpreter-assisted cases to facilitate communication; and use of video conferencing to allow for interpreter observation of nonverbal behavior in order to improve translation capabilities.

VENLAFAXINE - INDUCED ELEVATION OF LIVER ENZYMES: A CASE REPORT AND REVIEW OF THE LITERATURE

Lead Author: Rebecca Eleanya, M.D.
Co-Author(s): Meredith Chapman, M.D

SUMMARY:

Venlafaxine is a serotonin and norepinephrine reuptake inhibitor widely used as an antidepressant and with a relatively low occurrence of adverse effects. Common adverse effects include drowsiness, dyspepsia, nausea, headache, increased sweating, increased appetite, weight gain and sexual dysfunction. Moderate increases in liver enzymes have been reported to occur in less than 1% of patients on Venlafaxine. We describe a case of significantly elevated liver enzymes in a 15 year old female being treated for depression with Venlafaxine. Elevated liver enzymes and mild coagulopathy were noted three weeks after pharmacotherapy with Venlafaxine was initiated. Laboratory findings revealed elevated serum transaminases (aspartate aminotransferase 1262 U/L; alanine aminotransferase 2832 U/L), Î³-glutamyltransferase (46 U/L initially, then 84 U/L). Alkaline phosphatase and serum bilirubin were within normal limits. Her symptoms resolved rapidly and these laboratory values

trended down significantly with a reduction in the dose and on discontinuation of Venlafaxine. No further treatment was required as her liver dysfunction was self-limited. The present paper describes these findings and provides a summary of previous case reports.

COCAINE-INDUCED DYSTONIA, A CASE REPORT

Lead Author: Aikaterini Fineti, M.D.
Co-Author(s): Srikanth Challagundla, MD, Nitigna Desai, MD

SUMMARY:

Introduction

A variety of movement disorders have been connected to alcohol or drug use. Alcohol is mostly associated with withdrawal tremors, and less frequently with withdrawal Parkinsonism, chorea, stereotypic dyskinesias and myoclonus. Stimulants like amphetamines, bath salts and cocaine are known to cause a variety of involuntary motor behaviors, categorized as tremors, stereotypies, choreoathetoid movements, or dystonias.

Case Report

A 55 year-old white man with psychiatric history of Alcohol and Cocaine Use Disorders, Severe; Nicotine Use Disorder, Severe; and Unspecified Depressive disorder r/o Substance-induced depressive disorder and medical history significant for a recent hip replacement, checked into an Intensive Outpatient Program for Alcohol and Substance Abuse. He had already gone through an inpatient detox program and upon admission he stated that he had stayed clean for two weeks after the detox but he had a couple of beers and smoked crack cocaine the day before starting the Treatment Program. His BAL was negative whereas his urine toxicology was positive for cocaine on admission. His bloodwork showed no abnormalities other than mild LFTs elevation. His physical exam findings were unremarkable aside from the fact that he was noticed to have involuntary stereotypical movements of the tongue along with lip smacking, reminiscent of oral-buccal-lingual tardive dyskinesia. The patient denied having ever used antipsychotics. He had been on Bupropion for 6-7 months at the time of admission but he had not been taking it consistently. He also stated that his mouth and tongue movements might have been present for a while, which was not a problem for him. Although there are reports of dystonias associated with Bupropion, the medication was not discontinued; on the contrary the patient was encouraged to use it as prescribed. A month after his admission to IDTP the frequency of the oral-lingual dyskinesias had significantly decreased while the patient remained grossly unaware of their existence.

Discussion

Cocaine blocks the dopamine transporter (DAT) preventing the reuptake of dopamine and by that increasing the concentration of dopamine at the synaptic cleft. Chronic use leads to dopamine depletion. Due to that depletion it is not uncommon for the chronic users to experience persistent tremor, proportional to the degree of use and inversely related to the time since the last use.

A transient chorea, known as "crack dancing" along with buccal-lingual dystonias, called "boca torcida" by Latinos, are associated with crack cocaine and may be misinterpreted as tardive dyskinesia. They are usually self-limiting and are frequently disregarded by the subjects who present them.

It is important for the clinician to be aware of the movement disorders associated with substance use. In the case of cocaine for example, the abstinence from the drug makes the movement disorder improve or even disappear.

DRIVING YOUR HEAD INTO A BRICK WALL: ROLE OF PSYCHIATRISTS AFTER HEAD INJURIES IN THE NATIONAL FOOTBALL LEAGUE AND BEYOND

Lead Author: Marissa Flaherty, M.D.

SUMMARY:

The blow to the head was brutal, occurring when Vernon Davis, a coveted tight end for the San Francisco 49ers, leaped to catch a pass in the 10th game of the 2013 NFL season. Suffering a powerful hit to the head, medical personnel determined he had suffered a concussion â€“ his second that season. While there are strict protocols for responding to concussions in the NFL, it is unclear what the psychiatric screening requirements and involvement with these patients are after head injuries that correlate high with psychiatric sequeala. In light of a $376 million lawsuit against the NFL by previous players who suffered concussions/head injuries and debilitating consequences, one has to ask, what would the benefit of early psychiatric

intervention be for these players? In addition, what are the easy interventions that psychiatrists could implement for patients, such as the NFL players, who have ample social support. Alternatively, we will extend these same ideas to the community to include people who may not have the same level of support.

Concussion protocols for professional sport teams were started in 1986 by the American Academy of Neurology (AAN). The protocols suggest that every player get baseline neuropsychological testing before starting to play for the professional teams. This came in light of the fact that many players who have suffered from repeated concussions did not have baseline testing to which to compare their acquired impairments and psychiatric conditions. The AAN suggests treating each athlete individually and making sure the player receives the proper medical attention. During every NFL game, there is a scout in the stands who watches for any player who may suffer a head injury. If suspected, this player is automatically evaluated and removed from the game for medical evaluation. New to the 2014 guidelines, a neuro-trauma expert is available upon request for a second opinion of the player and evaluation. Each concussion is different and the risk for a second concussion and a more severe brain injury is highest within 10 days of the original insult. The removal from same day play is a critical part of the guidelines and one that uniformly is not followed. Accepted medical advice involves recommending step-by-step approach to a return of activity following the absence of all concussion symptoms, including those associated with post-concussive syndrome (memory/concentration, mood swings, personality changes, headache, fatigue, dizziness, insomnia and drowsiness).

While there are ample guidelines that help treat and prevent brain injuries, what is the psychiatric screening and follow up for these patients? What is the prevalence of psychiatric sequeala after multiple head injuries in the professional sports community? How can the medical community increase psychiatric treatment for these patients? How can these same interventions be implemented in the broader community to prevent chronic mental illness from head injuries?

END-OF-LIFE DECISION MAKING IN THE CONTEXT OF SUICIDALITY: A CASE REPORT

Lead Author: Travis Jones, B.S., M.D.
Co-Author(s): Sean R. Fletcher, M.D., Rohini Mehta, B.S., Travis Jones, B.S., John Magera, M.D.

SUMMARY:

Introduction: Clinicians are often faced with the difficulty of discussing end-of-life care with the terminally ill. These end-of-life decisions are complicated by psychiatric illness which may call into question a patient's capacity to consent. In this case, a patient with a terminal illness wishes to be DNR/DNI while he is expressing active suicidal ideation, raising concerns of the validity of such a request.

Case Description: Mr. H is a 93 year old male with a history of end-stage idiopathic pulmonary fibrosis with multiple co-morbidities who presented with two weeks or worsening dyspnea. He was admitted, however; quickly deteriorated further and was transferred to the medical intensive care unit. As his dyspnea progressed, he eventually required large amounts of supplemental oxygen through a high-flow nasal cannula. As his treatment with high dose steroids and broad spectrum antibiotics failed and his oxygen requirements increased, it became evident that his illness was worsening and he may require intubation. He elected to designate himself as DNR/DNI. Soon after, he began expressing that he wished to kill himself and, as a result, psychiatry was consulted. He stated that he if he were back home he would strangle himself with a belt. It was evident that he had a clear understanding of his disease process, his prognosis, his treatment options, and the consequences of foregoing treatment. This raised the dilemma of whether or not a DNR/DNI holds validity in the terminally ill in the context of a suicidal patient who otherwise may have the capacity to consent.

Discussion: Difficulty in clinical evaluation of capacity stems from depression often understood as a "reasonable response" to a terminal diagnosis, and a mood disorder itself being insufficient evidence of an impaired mental state. However, psychopathology has been shown to affect desire for life-sustaining medical therapy: significantly more geriatric patients without suicidal ideation expressed a desire for CPR than those endorsing suicidal

ideation (57% vs 40%). Ganzini et al. assessed whether treatment of depression would influence desire for life-saving therapy in elderly patients, and found the majority of patients did not change their answer even with clinical remission of the mild or moderate depressive episode. However, those experiencing a severe (versus mild or moderate) depressive episode showed an increase in desire for therapy once treated. Capacity is determined on a decision-by-decision basis, so inability to decide end-of-life treatment does not preclude one from other decisions. Ideally, patients with suicidal ideation should be treated adequately and re-assessed for capacity as their mental status improves. In this case, it was determined the patient's suicidality and severe depressive episode interfered with his capacity to decide his end of life care and elected to transition those decisions to his medical power of attorney.

RECURRENCE OF PICA AFTER AN 18-YEAR HIATUS, ASSOCIATED WITH RENAL DIALYSIS- A CASE REPORT AND A REVIEW OF THE LITERATURE

Lead Author: Jesse Fredeen
Co-Author(s): Suzanne Holroyd, M.D.

SUMMARY:

Pica, or the eating of non-food substances, has a recognized association with certain medical disorders, including renal failure requiring dialysis, iron-deficient anemia, and zinc-deficiency. A variety of factors have been proposed as to the etiology and causation of this behavior. Patients have described OCD like compulsions for ingestion of particular substances or textures. There may also be cultural influences to the behavior. Compulsions for one particular non-food substance often occur, with consumption relieving a patient's anxiety. Ice chips, chalk, dirt, clay, and rubber have been well documented as recurring target substances. Pica is of particular note in dialysis patients, as their illness renders them especially vulnerable to dietary abnormalities.

Studies examining the prevalence of pica in dialysis patients have findings ranging from 10 to 38.3%. End stage renal disease (ESRD) requiring dialysis causes not only significant lifestyle changes and psychological stressors, but changes physically, given the inability of the body to excrete substances through the kidneys. As well, dialysis requires very specialized diets and fluid restrictions, as well as a multitude of medications. Ice chips, clay, dirt, rubber, and others substances can imbalance electrolytes both by providing an extraneous source of ingested material, and by displacing regular nutrient sources. Patients often hide their behavior, which can lead to difficulties in diagnosing pica in such cases. As well, treatment of pica can be challenging.

In this case, we describe a female who had onset of rubber band eating pica associated with renal dialysis that ceased during the time she had a successful renal transplant, but recurred 18 years later when she again required dialysis. Ingestion of the rubber bands caused severe hyperkalemia, which eventually alerted the treatment team as to the behavior. Despite recognition of the patient's pica, patient understanding of the dangers of continuing to ingest rubber bands, and psychiatric treatment, the patient continued to participate in the pica behaviors. Details of the case, further review of the literature, and implications are discussed.

WERNICKE'S ENCEPHALOPATHY: DIAGNOSTIC CHALLENGES AND TREATMENT ON THE MEDICAL PSYCHIATRY SERVICE

Lead Author: David Fudge, B.Sc., M.D.
Co-Author(s): Patricia Rosebush, M.Sc(N), M.D., FRCP(C), Cindy Kington, RN, CNS, Mazurek, M.D., FRCP(C)

SUMMARY:

Introduction: Wernicke's encephalopathy (WE) is a neuropsychiatric condition caused by inadequate supply of thiamine to the brain. Prompt treatment with adequate doses of thiamine is essential to avoid irreversible structural damage to the brain that may lead to Korsakoff syndrome (KS), a striking disorder characterized by impairment of recent and working memory. WE may be severely under diagnosed on acute care medical services because of rigid adherence to the classical diagnostic triad of ophthalmoplegia, ataxia and encephalopathy, since eye movements and gait can be extremely difficult to assess in the context of severe delirium. We postulated that many patients presenting with severe delirium on a medical service might have undiagnosed thiamine deficiency. Methods: We made a presumptive diagnosis of WE in 20 consecutive patients presenting to our acute care medical

psychiatry service with severe delirium and (i) a history of alcoholism; and/or (2) severe subacute weight loss, involving at least 20% of loss of normal body weight. Due to the severity of the delirium few patients could be reliably assessed for EOM (extra ocular movements) or gait instability. Each patient received an aggressive regimen of IV thiamine replacement for at least 7 days, according to recent treatment protocols. Results: We followed prospectively 20 patients with presumed WE throughout their hospital stay. There were 2 cases without history of alcohol abuse, one with severe dysphagia secondary to Parkinson's disease and the other with restricted diet. All patients showed a prompt response to treatment and in all cases the delirium resolved fully. Conclusions: WE has to be seriously considered as a diagnostic possibility in all cases of delirium, presenting on an acute care unit in the context of alcoholism or weight loss. We suggest aggressively treating possible WE cases with high dose IV thiamine given the relatively low risk and possible life saving benefits.

A STRUGGLE TO PRESERVE SELF-IDENTITY : CHALLENGES FACED BY TRANSGENDER AND GENDER VARIANT POPULATIONS IN CLINICAL SETTING

Lead Author: Tanuja Gandhi, M.D.
Co-Author(s): Sachin Mehta, M.D., Carolina Retamero, M.D.

SUMMARY:

Introduction:
The presidential proclamation of June 2014 as the Lesbian Gay Bi-sexual and Transgender (LGBT) Pride month brings to focus the burgeoning issue of gender-based discrimination. Research indicates a high prevalence of discrimination, bullying and harassment of LGBT populations in various healthcare and educational settings. The barriers to accessing health care and the high suicide rate only worsen this problem. We present the case of a transgender patient with a significant history of bullying, limited acceptance within family of his gender identity and symptoms of anxiety in the context of a probable suicide attempt.
Case Presentation:
Mr. A, a 25 year old Caucasian male with past history of anxiety was hospitalized post suicide attempt after ingesting 60 tablets of alprazolam secondary to relationship issues. He reported a history of bullying and disagreements within his family around his expressed identity as a female. The variable levels of acceptance within family were a source of stress for him. He reported severe anxiety and was using non - prescription alprazolam.
Discussion:
Anti-transgender bias causes a deep psychological impact on the individuals leading to multiple psychiatric problems. As per results from the National Transgender Discrimination Survey, 1/4th of the participants reported delaying needed care because of disrespect and discrimination from medical providers. 19% of participants reported refusal of care due to their gender status and 50% reported having to teach their providers about transgender care. Furthermore, per the National School Climate Survey, 81.9% of LGBT students were verbally harassed in the last year based on their sexual orientation and 63.5% of students felt unsafe because of their sexual orientation.
Conclusion:
Gender variant and transgender patients face several challenges while seeking medical care due to the lack of clear rights and laws identifying and protecting their gender expression and identity. Thus, it's essential to increase the awareness in medical professionals towards providing transgender sensitive care. Furthermore, we need clear guidelines addressing the different aspects of care in clinical settings, such as gender specific room assignments, rest room access and other facilities to minimize any gender-based discrimination.

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DON'T THROW OUT THE BABY WITH THE BATHWATER," NEUTROPENIA IN A CLOZAPINE-TREATED PATIENT: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Bintou Gassama, M.D.
Co-Author(s): Jason Patel, Christopher Logan, M.D., William Upshaw, M.D.

SUMMARY:

INTRODUCTION: Clozapine is an atypical antipsychotic often effective in treating otherwise refractory schizophrenia and recurrent suicidal behavior. As such, the ability to maintain this drug is often crucial to a patient's care and function. Limiting its use, however, are the potential side effects of neutropenia and agranulocytosis. Adjunctive medications, especially potentially myelosuppressive drugs, may increase the risk of neutropenia and agranulocytosis. Furthermore, they may obscure the cause of neutropenia, leading to premature discontinuation of clozapine. We present a patient treated with clozapine who developed neutropenia while on concurrent valproate therapy; the neutropenia was incorrectly attributed to the clozapine, leading to its unnecessary discontinuation and psychiatric decompensation of the patient.
CASE REPORT: A 52 year old woman with a history of schizophrenia was admitted due to presumed clozapine-induced neutropenia. Prior to initiation of clozapine, she had been quite unstable with multiple hospitalizations and suicide attempts. She did well on clozapine and resided in an assisted living facility (ALF). On admission, clozapine was discontinued which resulted in the patient's psychiatric decompensation despite other medication trials. Eventually, neutropenia improved enough to where clozapine was restarted and titrated to the original dose. Her mental status gradually returned to baseline. Upon further chart review, valproate was noted to make a clear contribution to the patient's longstanding thrombocytopenia. A decision was made to discontinue valproate as there was no clear indication for its use. With valproate's discontinuation, thrombocytopenia resolved along with a robust increase in ANC to a normal range. Patient was eventually discharged back to her ALF on clozapine.
DISCUSSION: Neutropenia and agranulocytosis are common limiting side effects of clozapine. It is well established that this risk increases with polypharmacy, especially when other myelosuppressive medications are added. Considering the detrimental impact of schizophrenia on quality of life and suicidality, clozapine is a life-saving drug for patients with refractory schizophrenia. This case illustrates the dangers of polypharmacy and the potential for misattribution of adverse effects to a critically important medication. It is of paramount importance to ensure continued patient access to clozapine by avoiding such potential "red herrings."
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ELECTROCONVULSIVE THERAPY IN A PATIENT WITH MOYAMOYA SYNDROME

Lead Author: Erica Ghignone, M.D.
Co-Author(s): Lisa Rosenthal, MD, Robert Brett Lloyd, MD, PhD, Samdeep Mouli, MD, Stephen Dinwiddie, MD

SUMMARY:

We report on a 30-year-old woman diagnosed with moyamoya syndrome resulting from sickle cell disease who developed catatonia and was successfully treated with electroconvulsive therapy (ECT). Neuroimaging revealed severe tandem narrowing of the left internal carotid artery with diminished cerebral blood flow, moderate narrowing of the right supraclinoid aspect of the right internal carotid artery, and associated numerous lenticulostriate collaterals bilaterally, consistent with moyamoya. The patient presented with mutism; posturing; immobility; stupor; withdrawal; refusal to eat, drink, or speak; and staring, supporting a diagnosis of catatonia. It initially responded to a lorazepam challenge; however, a complicated hospital course and deterioration of the

patient's condition, including septic shock, delirium, and continued catatonic symptoms, led to the pursuit of ECT to treat her symptoms. We discuss the risks involved with the administration of ECT in a patient with fragile cerebral vasculature and the successful treatment of catatonia in this patient without resultant stroke or cerebral hemorrhage.

TREATING A PATIENT WITH SCHIZOPHRENIC AND SOMATIC DELUSIONS

Lead Author: Luisa S. Gonzalez, M.D.
Co-Author(s): Andrew M. Joelson, Rahulkumar Patel, M.D., Panagiota Korenis, M.D.

SUMMARY:
Schizophrenia is a mental illness that affects approximately 1% of the general population. Symptoms most commonly include auditory hallucinations, several types of delusions, disorganization in speech and behavior, formal thought disorder, and negative symptoms including poverty of speech, thought or motivation. Of the delusional symptoms, somatic delusions-those that pertain to the body-are rather rare. Somatic delusions are defined as fixed false beliefs that one's bodily function or appearance is grossly abnormal. They are a poorly understood psychiatric symptom and pose a significant clinical challenge to clinicians. Studies indicate that only one third of this patient population has a positive treatment outcome with resolution of symptoms. While challenges exist in treating patients when they present with somatic delusions alone, it becomes far more difficult when somatic delusions present in patients with schizophrenia. Physical symptoms such as pain or discomfort are often incorrectly perceived or misinterpreted by psychotic patients. Often medical conditions are overshadowed by psychosis and may get undiagnosed or overlooked which could potentially result in fatal errors for patients. While little has been written about patients with true delusions that are somatic in nature, somatic delusions, specifically somatic delusions associated with schizophrenia are particularly under reported in the literature.
Here, we describe the case of a 40-year-old Hispanic patient with established chronic schizophrenia. From her initial presentation to the hospital, she exhibited and perseverated on a number of somatic delusions about her body including her bones being "twisted" around one another, delusions of pregnancy and abortion, and her normally-functioning arm being broken. This poster will also explore treatment strategies used to treat somatic delusions including anti psychotic medications, individual psychotherapy and cognitive behavioral therapy. In addition, a review of potential cultural influences as well as the economic burden that such patients place on the health care sector by their numerous emergency room and office visits will be discussed.

LESS IS MORE: A CASE OF AUTISM SPECTRUM DISORDER WITH IMPROVED BEHAVIORAL MANIFESTATIONS AFTER BEING WEANED OFF MULTIPLE MEDICATIONS

Lead Author: Arpita Goswamil Banerjee, M.D.
Co-Author(s): Mark W Berguson, BS, Neil F Haidorfer, BS, Charles McGlynn, MD

SUMMARY:
Objective: Increase knowledge base about the standard of care in the management of patients with Autism Spectrum Disorders.
Introduction: Autism Spectrum Disorders (ASD) affects 1% of children worldwide is characterized by persistent language deficits, repetitive gross motor activity, emotional lability and social impairment. Polypharmacy is defined as the practice of administering multiple medications concurrently to treat a single condition. Individuals with ASD, are subject to polypharmacy with psychotropic medications greater than 50% of the time.
Adverse events linked to polypharmacy include potential drug-drug interactions, additive drug reactions, medication cascade effects, sedation, somnolence, and cognitive impairment. Patients with ASD can be overtly sensitive to these side effects of multiple medications and are managed effectively with a combination of pharmacological and non-pharmacological interventions.

Case: The authors present the case of a young African American woman with severe ASD, Intellectual Disability, Impulse Control Disorder and complex hospital course resulting in redundant pharmacotherapy and poorly controlled symptoms. The patient presented with aggressive and violent behavior, poor sleep and extreme irritability. Her recent

hospitalizations were the result of similar behavior which precipitated her being on multiple medications, including, antipsychotics, antidepressants, mood stabilizers and benzodiazepines. The patient's irritability, daytime aggression, and poor sleep at night were probably worsened secondary to her significant 'medication load.' As her medications were adjusted, the patient started to show improvement, becoming less impulsive and at times calm with no distress. The patient responded well when treated with a combination of non-pharmacological and pharmacological interventions. This included environmental enrichment through sensory stimulation combined with proper sleep hygiene and medication taper to a second generation antipsychotic and a mood stabilizer.
Methods: Review of patient's charts and a PubMed search was conducted using the terms Autism spectrum disorder, Polypharmacy.
Discussion: This case exemplifies how 'less is more' is the preferred strategy in treating patients with ASD because 'less' psychotropics may help us to achieve 'more.'
There is minimal evidence of the effectiveness or appropriateness of multidrug treatment of ASD. Clinicians need to develop standards of care around the prescription of psychotropic medications to patients with ASD. Multidisciplinary involvement is crucial in managing ASD patients with intellectual disability, and psychopharmacology should be used judiciously in conjunction with environmental manipulation, educational modification and robust behavioral management strategies. We as clinicians should maintain a high index of awareness concerning the detrimental effects of polypharmacy when treating patients with ASD.

INTENTIONAL FOREIGN BODY INGESTION: A TOUGH TOPIC TO DIGEST

Lead Author: Dina Greco, D.O.
Co-Author(s): Courtney Joseph, D.O., Carolina Retamero, M.D

SUMMARY:

Background: Intentional foreign body ingestion (IFBI) is a common, yet dangerous phenomenon observed among patients with a broad spectrum of psychiatric disorders. Studies have found that 85% of adult IFBI cases included patients with a prior psychiatric diagnosis, and 84% of these patients had recurring ingestion. Despite these alarming facts, there is very limited psychiatric literature concerning the prevention, psychopathology, and treatment of IFBI. IFBI is an extremely unpredictable, impulsive and often repetitive behavior among psychiatric patients that has become a very expensive and challenging issue in the healthcare system. The authors will present a series of 4 cases to highlight the different presentations, diagnoses, management and treatment of IFBI.
Cases: S.L is a 39 y/o male with mood disorder NOS and polysubstance dependence with multiple prior suicide attempts, admitted to the psychiatric unit due to a suicide attempt by cutting his wrists and ingesting two AA batteries and a razor blade. N.L. is a 33 y/o female with mood disorder NOS, borderline personality disorder, polysubstance abuse, and multiple IFBI with past exploratory laparotomy, admitted to the psychiatric unit after a suicide attempt by ingesting two AAA batteries. L.J. is a 21 y/o female with bipolar affective disorder, borderline personality disorder, mild intellectual disability, and multiple prior IFBI requiring endoscopic removal, admitted to the psychiatric unit for threatening to swallow a pin. Patient had three psychiatric admissions earlier in the month due IFBI of a coin, toothbrush handle and bus token, which were successfully removed by endoscopy. K.W. is a 54 y/o male with schizophrenia and IFBI admitted to the psychiatric unit for exacerbation of psychosis. Considering the patient's extensive history of IFBI, abdominal x-rays were obtained, revealing a screw in the bowel and a heart shaped object in the stomach which required endoscopic removal.
Methods: Review of patients' charts and a PubMed search was conducted using the terms foreign body ingestion and intentional foreign body ingestion.
Discussion: As clearly indicated by our case series, IFBI is a very dangerous and expensive reoccurrence in psychiatric patients with a variety of etiologies, and consequently requires an early, complex multidisciplinary approach in the inpatient and outpatient settings. Although medical and surgical reviews regarding IFBI has been well established, psychiatric literature remains limited. Future clinical studies must be conducted to further investigate the psychopathology underlying this complex issue.
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OLANZAPINE AS A CAUSE OF SIADH WITH SEVERE HYPONATREMIA: A CASE REPORT

Lead Author: Tarandeep Grewal, M.D.
Co-Author(s): Phebe Tucker, M.D., Afia Sadiq, M.D.

SUMMARY:

Background:
Olanzapine is an atypical antipsychotic approved for the treatment of Schizophrenia and Bipolar disorder. It is structurally similar to Clozapine; however, has a more tolerable side-effect profile. Weight gain, somnolence, hyperprolactinemia, hypertriglyceridemia, hypercholesterolemia and hyperglycemia are among the more common side effects. SIADH and hyponatremia are not listed as side effects associated with Olanzapine use; however, there have been three adult case reports linking the drug to dangerously low sodium levels. Three case reports have been published by the Netherlands Pharmacovigilance Centre Lareb that describe Olanzapine use associated with hyponatremia or SIADH.
Clinical case presentation:
A 50-year-old caucasian male with a psychiatric history of Schizophrenia presented to the ER with severe hyponatremia (Na 99 mmol/L) and resultant seizures. Patient's past medical history as per chart review listed hypertension, obesity and positive PPD history. Active medications included Atenolol, Olanzapine, Benztropine and Aspirin. Patient had been taking Olanzapine periodically since 2001 and acknowledged compliance with Olanzapine use 10mg po at noon and 20mg po qhs for two years prior to current admission. Lab results confirmed a diagnosis of SIADH thought to be secondary to Olanzapine use by exclusion of other causes and medications. Patient was weaned off Olanzapine and maintained normalized sodium levels for atleast 3 months after discharge.
Discussion:
Research suggests hyponatremia in psychiatric patients may be caused by psychogenic polydipsia, the syndrome of inappropriate antidiuretic hormone secretion or due to the psychiatric disorder itself. Drug-induced hyponatremia has been discussed in the literature by the mechanism of increasing ADH secretion centrally or possibly enhancing the activity of ADH on the kidney. In the literature, there have been reports of Amisulpride, Risperidone, Clozapine and Quetiapine causing hyponatremia secondary to SIADH. Of particular interest is many of these antipsychotics including Olanzapine, Risperidone, Clozapine and Quetiapine have also been described to have a beneficial effect on polydipsia in Schizophrenic patients. There are clearly multiple factors involved illustrating the need for further studies on this topic in order to understand the mechanism by which antipsychotic drugs induce hyponatremia. Clinicians should be aware of this possible side effect of Olanzapine use and monitor patient's sodium levels for hyponatremia and SIADH.

A CASE OF ANTON SYNDROME, PRESENTED WITH VISUAL HALLUCINATIONS AND CONFUSION, WITH POSITIVE CLINICAL FINDINGS AND NEGATIVE RADIOLOGICAL FINDINGS

Lead Author: Ashwini Gulwadi, M.D.
Co-Author(s): Anil K Jain, MD

SUMMARY:

Introduction: Anton's syndrome is described as a combination of visual anosognosia, that is, denial of loss of vision, associated with confabulation in the setting of obvious visual loss and cortical blindness. The mechanism that underlies this syndrome remains unclear, but is thought to be related to infarction of primary visual cortex with preserved function of the primary visual association cortices. Usually, Anton syndrome is encountered in patients with bilateral occipital infarcts. Here, we describe a case of a patient who presented with hallucinations, had clinical signs suggestive of Anton's syndrome and negative radiological findings.
Case description: A 91- year-old male with diabetes, hypertension, dyslipidemia, glaucoma, history of cataract surgery, coronary artery disease, no previously diagnosed psychiatric and substance abuse problem, was brought to the ER by his family for acute onset of confusion and hallucinations of " seeing animals

and things that are not there". He was found to have BP of 205/89 in the ER. On examination, he was noted to have mild cognitive impairment, he denied hallucinatory experiences, and he was not responding to internal stimuli, he had poor visual acuity and his eyes would wonder in pursuit of objects held in front of him and he could not name them, identify them or place them in space. He was confabulating about things that he sees in front of his eyes. Remainder of mental status and neurological examination and labs was unremarkable. These findings are consistent with diagnosis of Anton's syndrome. Interestingly in our case, CT and MRI were negative for acute hemorrhage, infarction or mass lesions as opposed to a typical case of Anton's syndrome.

Discussion: Any form of cortical blindness can cause Anton's syndrome. Cerebrovascular disease is the most common cause of Anton's syndrome; other causes include hypertensive encephalopathy with pre-eclampsia, obstetric hemorrhage with hypoperfusion, and trauma, amongst others. Recovery of visual function will depend on the underlying etiology. Management would be correction of the causative factor, secondary prevention and rehabilitation. Our case adds to the limited literature on Anton's syndrome, and that a suspicion of cortical blindness and Anton's syndrome should be raised in patients with presenting with visual hallucinations with confabulation and poor vision.

A CASE STUDY OF FROTTEURISM AND SCHIZOAFFECTIVE DISORDER IN A YOUNG MALE -AN ATYPICAL ASSOCIATION

Lead Author: Sasidhar Gunturu, M.D.
Co-Author(s): Luisa S. Gonzalez M.D.
Jorge Munoz MS, Ali Khadivi , Ph.D.
Panagiota Korenis M.D.

SUMMARY:

Frotteurism, also known as "frottage" is derived from the French verb "frotter" meaning "friction" and is defined as a person who becomes sexually aroused by the act of rubbing up against a non consenting person for sexual gratification. First described in the literature in 1886 by Krafft-Ebing in Psychopathia Sexualis, it entered the Diagnostic and Statistic Manual of Mental Disorders III as an atypical paraphilia in 1980 and was classified as a paraphilia in the DSM-IIIR. It is a paraphilia and often manifests co morbid with other paraphilias including exhibitionism and voyeurism which are also courtship disorders. A frotteuristic act carries legal implications for the perpetrator and victims report a number of negative outcomes as a consequence of victimization, including feelings of violation, changes in behavior, and even long term psychological distress. While there do exist case reports that discuss the existence of frotteurism co morbid with affective disorders including major depression, there are no case reports that present with co-morbidity of psychosis/Schizophrenia or Schizoaffective.

In fact we are not able to find any case report of concurrent Frotteurism and Schizoaffective disorder so decided it is worthwhile reporting it. Furthermore, though there has been a variety of successful behavioral techniques used for treatment of paraphilias as a general category, treatment techniques specific to frotteurism are hard to find in the literature

Here we present the case of Mr. X a 22 year old male, who was first diagnosed with Schizoaffective disorder which was after the development of his frotteurism. Furthermore in the case his frotteurism was not directly caused by his psychotic or mood symptoms. He was arrested in 2012 doe performing frotteuristic acts on the subway; He was court-ordered to attend sexual offender group therapy. In this report we want to illustrate the frotterurism as a co-morbid condition in an individual with schizoaffective disorder. In addition pharmacological and therapeutic course of treatment he has been receiving in an outpatient setting.

In the case of Mr. X., it is encouraging to note that his frotteuristic behavior and thoughts have been reduced since the commencement of the group therapy in combination with the therapeutic results of his psychotropic medication compliance. Reporting this case will add to the very limited literature, if any, on managing a patient with concurrent Frotteurism and Schizoaffective disorder.

CHANGING FACES: A CASE REPORT OF CYCLOBENZAPRINE INDUCED ACUTE PSYCHOSIS

Lead Author: Najma F. Hamdani, M.D., M.H.A.
Co-Author(s): Merlyn, Scoggin, M.D.

SUMMARY:

This is a case report of a 70 year old male with history of chronic alcohol use, who presented with new onset hallucinations, a week after starting Cyclobenzaprine. The patient complained of seeing monsters who were talking, talked about traveling overseas without further details and reported conversing to people who were not in the room, per his roommates. He reported seeing people's faces changing shapes in geometric forms and becoming unrecognizable. Despite chronic alcohol use patient didn't endorse history of hallucinations in past with regards to alcohol withdrawal in the past and had no other significant psychiatric history. His BAL at this admission was 43 and despite being on Lorazepam for agitation and possibility of ETOH withdrawal per primary team patient didn't improve for two days. Psychiatry was consulted and Cyclobenzaprine induced psychosis was considered as a reason for his symptoms. Patient's symptoms resolved completely 5 days after admission and discontinuation of Cyclobenzaprine. Patient also had ARF and hyperkalemia along with hyponatremia at the time of admission. All of these resolved in two days after admission with fluid resuscitation without any improvement in psychotic symptoms. In our case patient improved after medication was stopped and didn't require continuous treatment with antipsychotics during the hospital stay even though these were ordered to provide symptom relief and to help with agitation. This case reports discusses Cyclobenzaprine induced psychosis, presentation, treatment and prognosis. Review of literature has shown some cases of acute psychosis with initiation of Cyclobenzaprine. We provide a brief discussion of the literature and cases. We conclude that medications like Cyclobenzaprine can cause new onset psychotic symptoms especially older population probably because of the anticholinergic side effects of the medication. The diagnosis can be tricky especially if there is contribution from alcohol use or other substance abuse. It takes careful monitoring of symptoms to rule out other causes of psychosis and altered mental status. Caution should be taken in prescribing medications with potential for inducing acute psychosis especially in older patients.

REVISITING ANTIBODIES IN PSYCHIATRY: A CASE OF RIGIDITY, DEPRESSION, AND ANXIETY IN A PATIENT WITH ANTI-GAD ANTIBODIES

Lead Author: Michael Heck, D.O.
Co-Author(s): Jonathan Coker, MS-IV

SUMMARY:

Case
A 64 year old woman with limited past psychiatric history of mild depression and anxiety presented with complaint of 1 month of worsening depression, fatigue, and rigidity of movement. She had no history of anxiety or depressive symptoms until 2-3 years prior to admission, which was around the time of her rapid onset of stiffness and rigidity of movement. She also noted 25 pounds of unexpected weight loss around this time. Lab workup was positive for Anti-GAD antibodies and Anti voltage-gated potassium channel antibodies, which are commonly seen in small cell lung cancer. A chest CT was obtained which revealed a 4mm pulmonary nodule and an abdominal CT showed a 5 mm hypodensity in her liver as well. Radiology recommended follow up of these lesions at 6 month intervals. During admission, medication trials for depression and anxiety had limited effect. A trial of carbidopa-levodopa, recommended by neurology for suspected atypical Parkinson's Disease, was attempted without clinical improvement. A trial of diazepam resulted in great clinical improvement within one hour. She was diagnosed with paraneoplastic neurologic syndrome and discharged home with outpatient follow up for her suspicious lung and liver lesions.

Discussion
Glutamic Acid Decarboxylase (GAD) is a CNS enzyme that converts glutamate to GABA, the main inhibitory neurotransmitter. Anti-GAD antibodies are associated with a number of disorders including stiff person syndrome, type I diabetes, thyroid disease, and epilepsy. There is evidence that anti-GAD antibodies may also be associated with a number of psychiatric disorders. One study demonstrated that patients with chronic psychotic disorders were more likely than controls to have GAD antibodies1. Another study showed that injecting GAD antibodies from humans into rats created anxious behavior in the rats2. A third study has shown that reductions in GAD levels were linked with impulsive behaviors in rats3, and many other studies have linked these

antibodies with other disorders including substance use disorders, autism, ADHD, and Bipolar Disorder.
We present a case of a complicated movement dysfunction in a patient with co-morbid depression and anxiety, who was found to have Anti-GAD-Antibodies. We propose that the physiologic reduction of GABA due to the presence of GAD antibodies may provide a unique therapeutic target for future psychiatric research and treatment.

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WERNICKE ENCEPHALOPATHY: AN UNDERRECOGNIZED YET TREATABLE CAUSE OF ALTERED MENTAL STATUS IN A NON- ALCOHOLIC PATIENT WITH LARYNGEAL CANCER

Lead Author: Vineka Heeramun, M.D.
Co-Author(s): Arkady Mellikyan,M.D.,Shreedhar Kulkarni,M.D., Chenelle Joseph,M.D., Malathi Pilla,M.D., SheilaThomas,M.D.,Aghagbulam Uga,M.D.,Sarah Shah,M.D.,Thomas Ala,M.D.

SUMMARY:

Introduction:Wernicke's encephalopathy(WE) is a neurological emergency which presents with symptoms of confusion, oculomotor dysfunction, and gait ataxia. It is often associated with alcoholism but can also occur in in cases of malabsorption, poor dietary intake, increased metabolic requirement, dialysis patients. Also, cancer patients are at high risk due to chronic malnutrition, chemotherapy-induced nausea and vomiting, and consumption of thiamine by rapidly growing tumors. We present a case of a non-alcoholic patient with a history of cancer of the epiglottis who developed altered mental status and showed rapid improvement after administration of thiamine.

Case:50 year old woman diagnosed cancer of the epiglottis underwent 3 cisplatin cycles and radiation therapy after which she went in remission. However she also experienced nausea, vomiting and anorexia. A feeding tube was placed for supplemental nutrition which fell off with no replacement. She also experienced double vision after a dilated eye exam 5 months back. She was doing better until she became acutely dyspneic.CT scan of the chest revealed a pulmonary embolus for which started on anticoagulation. Her hospital stay was complicated with worsening confusion. Her husband noticed some inattention and forgetfulness a week prior to her hospitalization. There was a marked worsening in her sensorium after her admission-she was disoriented to place and time with nonsensical speech and periods of staring blankly in space. Physical examination was remarkable for vertical nystagmus present since her admission which was then attributed to vestibulopathy secondary to chemotherapy. EEG showed no epileptiform activity.The neurology team was suspecting embolic strokes given her history of cancer and pulmonary embolus but cerebrospinal fluid was negative for malignancy or infections . Head CT scan was negative. MRI showed periaqueductal gray matter disease consistent with Wernicke's encephalopathy. She was treated with thiamine after which there was remarkable improvement of her mental status.
Conclusion: It is crucial to consider WE in the differential diagnosis for all cancer patients with confusion. A high index of suspicion is important as these critically ill patients may not present with the classic triad of symptoms. Untreated WE leads to coma and death. Immediate treatment with thiamine is required to prevent permanent neurologic injury including deficit in antegrade memory (Korsakoff's psychosis). Ophthalmoplegia typically recovers quickly, with subsequent improvements in ataxia. Cognitive function recovers more slowly. Thiamine is an essential for carbohydrate metabolism. Because of their high dependence on oxidative metabolism regions like the mesencephalon,vermis,peripheral nerves are especially sensitive to thiamine deficiency .Their damage explains the presentation of WE.It has been suggested that all cancer patients with confusion be empirically treated with thiamine to prevent WE.

CULTURE-BOUND SYNDROMES: A CLOSER LOOK AT DHAT SYNDROME

Lead Author: Nida S.F. Husain, D.O.

SUMMARY:

Introduction: Culture-bound syndromes are clinical entities often connected to certain regions of the world. Dhat is a culture-bound syndrome that is common in the Indian subcontinent. However, cases have been reported outside the Indian subcontinent. The history of Dhat Syndrome originates from folk belief that 40 drops of food are required to create 40 drops of blood, ultimately resulting in the creation of one drop of semen. The word "Dhat" means "elixir" and hence semen is regarded as "vital fluid". The DSM defines "Dhat" as "a folk diagnostic term used in India to refer to anxiety and hypochondriacal concerns associated with discharge of semen, whitish discoloration of the urine, and feelings of weakness and exhaustion". Patients often present with complaints of weakness (71%) and fatigue (69%).

Methods: We describe a case highly suggestive of Dhat syndrome, and we performed a literature review investigating Dhat syndrome and its clinical correlates.

Case: A 29-year-old South Asian male presented to clinic for evaluation of obsessive thoughts. The patient had been seen previously in the clinic by a therapist. At that time he reported obsessive thoughts regarding what others may think of him. He also voiced concerns about his sexual life, particularly regarding his ability to have children and if he will be able to marry. He also reported history of penile pain, white-colored urine, light semen, and premature ejaculation. When seen by psychiatry he complained of anxiety and mood symptoms, specifically obsessive rumination. Similar concerns about his ability to marry and have children were mentioned as before. When questioned about previously reported sexual problems he did endorse past problems with premature ejaculation. Somatic complaints were also reported including headaches (from talking too much), pain with urination, and gastrointestinal disturbances. Psychiatric review of systems was positive for depression and anxiety. He endorsed ritualistic behaviors such as checking if the door is locked. The patient also avoided crowds and children. He reported mood instability such as becoming angry easily. The patient's history was consistent with an underlying anxiety disorder, and obsessive compulsive disorder and generalized anxiety disorder were included in the differential. An SSRI was prescribed for treatment of anxiety and the patient was referred to therapy for CBT.

Conclusion/Discussion: Anxiety may manifest as somatic complaints, and these may be seen as culturally acceptable. It is important to obtain a cultural history as part of the evaluation. Additionally, confounding factors such as language barriers and the use of an interpreter of the opposite gender may hinder accuracy of the history obtained. Though the culture-bound syndrome may not warrant treatment, in cases such as Dhat syndrome education is helpful. If there are coexisting psychiatric disorders those should be treated.

BENZODIAZEPINE PROTRACTED WITHDRAWAL-A DILEMMA

Lead Author: Najeeb U. Hussain, M.D.
Co-Author(s): Mahreen Raza,MD
Humza Haque

SUMMARY:

Abstract: Benzodiazepine Protracted Withdrawal-A dilemma

Authors: Najeeb U Hussain, M.D., Mahreen Raza, M.D., Humza Haque

Objective:

Protracted withdrawal from benzodiazepine occurs after the cessation of chronic benzodiazepine use where withdrawal symptoms persist weeks or months longer than acute withdrawal. Symptoms from benzodiazepine protracted withdrawal include anxiety, delirium, psychosis, sensory and motor neurological changes, and depression. Previous studies indicate that treatment for protracted withdrawal from benzodiazepines includes gradual dosage reduction alongside antidepressants. Based on evidence, these treatments help lead to protracted withdrawal, creating potentially incorrect diagnosis and symptoms that are more resistant to treatment.

Methods:

Case presentation and literature review. Here we present a case of a patient who exhibits protracted withdrawal symptoms with concurrent and concomitant use of alprazolam.

Case Report:

A 43 year old African American female patient was admitted with Bipolar Disorder, Opiate Use Disorder, non-compliant with HIV treatment, and hypertension. She presented with full blown

psychosis. She was internally preoccupied and was actively hallucinating. She had positive drug screen for methadone, barbiturates, and benzodiazepines. Patient admitted to nearly 20 years of regular benzodiazepines, but recent use of barbiturates. After stabilization, she was prescribed lorazepam prn for withdrawal, olanzapine 10mg bid for schizoaffective disorder, and restarted HAART therapy after consultation with the ID. Evidenced by her continual facial tremor / twitching, unstable vitals, and continued psychosis, it is suspected that she experienced long term protracted benzodiazepine withdrawal.
Conclusion:
Abrupt discontinuation of chronic use of benzodiazepines leads to protracted withdrawal symptoms. Also, sometimes under treatment of chronic use can also lead to protracted withdrawal that causes misdiagnosis of the psychiatric problems. With the protracted nature of the withdrawal symptoms, it is recommended from previous case studies that the patient slowly be taken off benzodiazepines that need high motivation and compliance. Other studies support the use of Flumazenil that may act quickly in combating protracted withdrawal as there is evidence of up-regulation and reduction of tolerance. However the treatment needs Intensive care unit setting to avoid the potential lethal withdrawal.

PREVALENCE OF ABUSE IN CHILDREN WITH DISABILITIES: A CASE REPORT

Lead Author: Mehr Iqbal, M.D.

SUMMARY:

AH is a 7 year old Caucasian female with a past medical history of cystic fibrosis who came to the children's psychiatric unit at Bergen Regional Medical Center presenting with behavioral disorder, homicidal ideation, hypersexual behavior, and psychotic traits in February 2014. When she was 5, she was allegedly sexually abused by her godfather, who admitted to the abuse but fled to another state before being prosecuted. It is possible that her presenting symptoms were precipitated by the sexual abuse. We believe that early intervention after the abuse occurred would have greatly reduced the severity of her psychiatric symptoms, and that clinicians need to promptly and aggressively treat abused disabled children abuse seems to be prevalent among disabled children. A meta-analysis of 17 studies published in 2012 found that 13.7% of disabled children were sexually abused with an odds ratio of 2.88. This same study also noted that the scarcity in studies, the lack of reporting of abuse, and the insufficient assessment of the abuse makes gathering relevant statistics difficult. As reported by the Vera Institute of Justice, disabled children are at the mercy of their caregivers, who are the main culprits in the sexual abuse. The caregivers participate in the daily personal activities of the disabled child, they can prevent that child from any knowledge pertaining to protecting themselves or reporting the abuse, and if the child is institutionalized the caregivers are rarely caught or punished for their crimes. Thus, the lack of oversight of the caregivers lends itself to the opportunities necessary to sexually abuse the disabled child.
Once the disabled child is finally treated for the abuse, they tend to have more negative outcomes such as sexual abuse leads to longer hospital stays, more medication use during the stay and at discharge, and greater incidence of psychotropic medication use. This research suggests that sexually abused children have increased psychiatric morbidity, and they need "trauma-informed treatment" targeting this abuse in relation to their psychiatric

SOUND INTOLERANCE IN A 13 YEAR OLD: HYPERACUSIS OR PHONOPHOBIA? DIAGNOSTIC CHALLENGES FROM A CASE REPORT

Lead Author: Chidinma Isinguzo, M.D.
Co-Author(s): Vesela Tzoneva, M.D., Chijioke Isinguzo, M.D.

SUMMARY:

Introduction: Sound intolerance (including hyperacusis, phonophobia, auditory hypersensitivity) has been described in children. Phonophobia can be confused for hyperacusis. The intolerance to sound in hyperacusis arise from either the peripheral or central auditory system, whereas individuals with phonophobia have intense reactions of their limbic and autonomic nervous systems. Phonophobia has been described as an "extreme form of misophonia" (Zamzil Asha'ari, et al 2010).
Clinical Presentation: We present the case of a 13 year old boy who had previously been evaluated by different specialties, including Otolaryngology, Neurology. His prior work-up included MRI and CT. MRI brain was

unremarkable. CT of Temporal Bone did not show any acute fractures or abnormalities in any of the bony structures. No intracranial bleed, tumors, or mass was noted. Tympanometry and Pure tone testing were indicative of unilateral sensorineural hearing loss. Otolaryngology evaluated the patient, made a diagnosis of 'behavioral' hyperacusis. He was diagnosed with Tourette's syndrome and OCD, was tried on fluvoxamine, pimozide, aripiprazole.

Pediatric-neurologist referred the boy to Psychiatry. On presentation, his family described that he exhibited extreme behavioral distress, to the sound of "clearing of throat". He had demonstrated anger and aggression and had fought with family members. A car ride with a family member had resulted in a disastrous consequence. Review of records indicated that he had difficulty tolerating individuals who smack their lips.

Discussion: Misophonia (selective sound sensitivity) (Gabriela Ferreira, et al, 2013) has been described together with hyperacusis as decreased tolerance to everyday, commonplace sounds. Both can be present in individuals with hearing loss (Zamzil Asha'ari, et al 2010). Misophonics respond to triggering sound with panic, irritability, anger, rage. They try to avoid situations where they may hear these sounds, hence have significant impairment in social and occupational functioning. (Miren Edelstein, et al, 2013).Their worst responses occur in situations where they perceive "no escape" such as in cars. Some case reports on Misophonia can be found in Psychiatric, Audiology and Psychosomatic Medicine journals. (Arjan Schroder,et al)

Combined prevalence of Phonophobia and hyperacusis in school-aged children is estimated greater than 10%. Unilateral hearing loss is a risk factor. (Coelho CB, et al 2007, Zamzil Asha'ari, et al 2010). Affected children are initially seen by the pediatrician who then refers them to specialists such as ENT, psychiatrist or neurologist.

Conclusion: Sensory intolerance causes functional impairment, has been associated with OCD and tics (Steven Taylor, et al 2014). Early and accurate diagnosis of psychopathology is essential to ensure that children receive appropriate specialty interventions/services.

HYPONATREMIA INDUCED PSYCHOSIS: A CASE REPORT

Lead Author: Zahid Islam, M.D.
Co-Author(s): Mary J Bapana M.D., Asghar Hossain, M.D.

SUMMARY:

Introduction:

Hyponatremia is a common electrolyte imbalance observed in clinical practice. Severe hyponatremia can cause neurological and neuropsychiatric complications and can ultimately be fatal if left untreated. Hyponatremia does occur in psychiatric patients which may or may not be aggravated by primary polydipsia. Hyponatremia induced psychosis is usually uncommon.

Objective:

The objective of this article is to report a case of hyponatremia induced psychosis caused by non psychogenic polydipsia, and to review the available literature from Pub Med, Google and UpToDate.

Case:

SJ is a 60 year old Caucasian female homemaker, who lives with her husband. The patient was brought to the emergency department due to altered mental status. Reportedly the patient had an argument with a family member, got naked and ran out on to the street. The patient was brought to the ER by EMSI for further evaluation. On initial evaluation, the patient was agitated, did not recognize her husband, verbally abusive to the staff and had disorganized thoughts. On Physical examination, vitals were stable. Extremities showed mild edema. All other review of systems were normal. Patient had to be medicated with IM medication for the psychosis. Laboratory result showed hemoglobin of 10.4, platelets of 480,000, Serum sodium of 124 mEq/ l, serum osmolality of 262 and urine osmolality of 398. All other labs were within normal limits. The patient was admitted in the medical floor with diagnosis of Psychosis due to hyponatremia. She was started on normal saline with restriction of fluid to correct her hyponatremia. On day one and two the patient continued to exhibit psychotic behavior. In the meantime her sodium level was trending to the normal limit. On day three, the patient came to her baseline functioning and did not exhibit any psychotic symptoms. The patient reported that she had consumed more than ten diet sodas per day, the previous one week. The patient was diagnosed with Psychosis due to hyponatremia precipitated by non-psychogenic polydipsia.

Discussion:
Review of available literature has shown that hyponatremia is common in compulsive water drinking, the syndrome of inappropriate antidiuretic hormone secretion (SIADH), and the syndrome of self-induced water intoxication (SIWI) in previously diagnosed psychiatric patients. However hyponatremia induced psychosis in these conditions is rare. More recently, a case was reported of a factory worker in India, who developed Psychotic symptoms after developing hypontremia due to dehydration with salt depletion because of high temperatures.
Conclusion:
In conclusion we have found that non-psychogenic polydipsia is a rare cause of hyponatremia. Therefore a high index of suspicion must be maintained in psychotic patients with a first episode of psychosis with no previous psychiatric history. The early detection and treatment of Hyponatremia can decrease morbidity and mortality.

EATING DISORDER AS COMORBIDITY IN OBSESSIVE-COMPULSIVE DISORDER

Lead Author: Mandar Jadhav, B.S.
Co-Author(s): Daljinder Singh, M.D., Subina Gurung, B.S.

SUMMARY:

Obsessive-compulsive disorder (OCD) is a psychological disorder defined by recurrent thoughts or images (obsessions) and repetitive behaviors (compulsions) that cause anxiety or distress. Anorexia nervosa is a psychological eating disorder characterized by an abnormally low body weight due to restrictive food intake, intense fear of gaining weight, and distorted perception of body image. In this case report, we present a patient with eating disorder comorbid with OCD, and discuss the need for alternative treatment options beyond the recommended guidelines, which have proven to be ineffective for this patient. In such cases, psychotherapy may be an effective adjunct to pharmacotherapy. Exposure and Response Prevention (ERP) based on the Cognitive Behavior Therapy (CBT) model may be considered as an option as it targets eating pathologies in conjunction with obsessions and compulsions. Alternative pharmacotherapy for OCD resistant to treatment with Selective Serotonin Reuptake Inhibitors (SSRIs) may include the use of NMDA receptor antagonists, such as Amantadine, and Ketamine that have been shown to be effective in some cases.

LOXAPINE SUBSTITUTION FOR REVERSAL OF ANTIPSYCHOTIC-INDUCED METABOLIC DISTURBANCES: A RETROSPECTIVE CHART REVIEW

Lead Author: Seema Jain, B.A.
Co-Author(s): Seema Jain, Jessica Hellings, M.D., Rebecca Andridge, Ph.D.

SUMMARY:

Background: Atypical antipsychotics are widely used to treat irritability and aggression in Autism Spectrum Disorders (ASD), despite side effects of serious weight gain and metabolic disturbances. Our findings regarding low-dose loxapine, a typical antipsychotic with atypical properties, warrant further study in reversal of metabolic illness associated with atypical antipsychotic treatment in ASD.
Methods: We performed a retrospective chart review of 14 consecutive subjects with ASD treated with an atypical antipsychotic and 1 subject treated with chlorpromazine, who all presented with at least one form of metabolic disturbance before low dose loxapine substitution.
Results: Mean loxapine treatment duration at the time of chart review was 11.5 months (range 3-20 months). Final loxapine dose for 12 subjects was 5 mg/day and 10 mg/day for 3 subjects. 14 of 15 subjects tolerated the addition of loxapine and tapering or discontinuation of their presenting antipsychotic. At the time of chart review, 14 of 15 subjects had a Clinical Global Impressions Scale- Improvement (CGI-I) of 2 (Much Improved) or 1 (Very Much Improved). In addition, 13 of 15 subjects had a CGI-I of 2 or 1 at â‰¥ 50% of their visits during loxapine treatment. Average weight loss was significant at -6.65 kg (SD 10.07; median -3.22 kg). Average BMI reduction was significant at -2.47 (SD 3.3; median -1.67). Mild extrapyramidal symptoms were noted in 3 subjects. No significant change in blood pressure or pulse was noted.
Conclusion: Our findings suggest that loxapine may safely enable tapering of an atypical antipsychotic in order to reverse drug-induced weight gain in patients with ASD.

ACUTE PSYCHOSIS IN A PREVIOUSLY HEALTHY 43 YEAR-OLD MAN WITH PRIMARY EPSTEIN-BARR VIRUS INFECTION: A CASE REPORT

Lead Author: Lakshit Jain, M.B.B.S.
Co-Author(s): Ekatherina Osman, D.O., Carolina Retamero, M.D.

SUMMARY:
Introduction
Epstein-Barr virus (EBV), also known as human herpesvirus 4, is a member of the herpes virus family. It is one of the most common human viruses. EBV can result in infectious mononucleosis and other illnesses with a wide variety of somatic presentations including but not limited to: fever, swollen lymph nodes, enlarged spleen, liver and rash. Psychiatric symptoms of EBV can present as prolonged fatigue, hypersomnia, and short-lived depressive disorders, however, few reports exist on the development of acute psychosis in adults with no previous psychiatric history. We present the case of a patient who had acute psychosis in the setting of a recent diagnosis with EBV.
Case report
A 43 y/o Caucasian male presented as a transfer from a Crisis Response Center (CRC) on an Involuntary commitment petitioned by the patient's mother due to paranoia and poor self-care. The patient had been recently diagnosed with EBV pneumonia and was treated with clarithyromycin and ciprofloxacin. He reported that he had been confused for 4 days, had difficulty finding words and felt that his mother was saying negative things about him. He also reported feelings of depression when he was being treated for the EBV pneumonia. Collateral information revealed post-infectious onset of slow speech, bizarre behavior and delusional beliefs that he had killed his son after seeing a traffic accident on TV.
Methods
A Pubmed search was conducted using the terms Epstein-Barr virus (EBV), psychosis, psychiatric symptoms. A retrospective chart review of the patient's case was completed.
Discussion
EBV is thought to have a role in chronic fatigue syndrome and major depression, but its role in psychosis is mainly considered to be restricted to the adolescent age group, with most case reports describing an adolescent or a young adult developing psychotic features in association with acute EBV illness. With recent research findings proposing an infectious / autoimmune basis for schizophrenia, further research is needed in this area, and physicians should be aware of the potential causation of psychotic symptoms in EBV infections.
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17 YEAR-OLD FEMALE WITH DELIRIOUS MANIA AND CATATONIA

Lead Author: Shonda Janke-Stedronsky, M.D.

SUMMARY:
Delirious mania has been well-described in the adult literature as a rapidly progressive and potential lethal condition. Few cases have been described in the pediatric population. A literature review revealed only two cases of delirious mania/excited catatonia in adolescents, one with a prior diagnosis of a schizophrenia spectrum disorder. In this case, a 17 year old female with no past psychiatric history presented with symptoms consistent with a first affective episode bipolar I disorder with delirious mania and catatonia. Her symptoms responded well to a combination of clonazepam, aripiprazole, and lithium. This case highlights the importance of early recognition and aggressive treatment of a condition discussed infrequently in the pediatric population.

MITIGATION OF POSITIVE AND NEGATIVE SYMPTOMS OF SCHIZOPHRENIA BY TREATMENT WITH DEXTROAMPHETAMINE, MIXED SALTS: A CASE REPORT

Lead Author: Surani Jayaratna, M.D.
Co-Author(s): Lawrence R. Faziola, M.D.

SUMMARY:

Psychostimulants have long been used for their neuroenhancing effects, both prescription and non-prescription. Prescribed at appropriate doses they are used to improve attention and concentration in the treatment of attention deficit hyperactivity disorder (ADHD). However, at excessive doses, there is literature associating their use with psychotic symptoms, including hallucinations and paranoia. This would make it an unlikely treatment choice to use in a patient with schizophrenia. However, we present a novel case in which is a gentleman with schizophrenia received benefit from being treated with a psychostimulant.

The patient is a 20 year old male with schizophrenia, afflicted with derogatory auditory hallucinations, thought broadcasting and paranoia. Diagnosed at age 18, the patient's disease course was marked by multiple hospitalizations, serious suicide attempts and trials of numerous antipsychotic medications, including clozapine and long acting depot formulations of antipsychotics. The patient's antipsychotic medication was discontinued and he was started on dextroamphetamine, mixed salts. For the last 6 months, the patient has reported mitigation of paranoia, auditory hallucinations and thought broadcasting, with recollection and partial insight into his past psychosis. He is also noted to have some alleviation in negative symptoms, including improved cognition, socialization, and occupational functioning.

Perhaps this case indicates a role of closely monitored use of psychostimulants in those with schizophrenia.

SURVIVING AN ALPRAZOLAM OVERDOSE: AN ILLUSTRATION OF THE LOW LETHALITY OF BENZODIAZEPINES

Lead Author: Timothy Jeider, M.D.
Co-Author(s): Kathleen Crapanzano, M.D.

SUMMARY:

BACKGROUND
Alprazolam is a triazolobenzodiazepine derivative sedative-hypnotic, classified as a schedule IV medication and commonly prescribed for anxiety and panic disorder. The FDA allows for a maximum dosage of 4 - 10 mg per day. Given the popularity of Alprazolam among prescribers and the frequency of benzodiazepines used in overdose attempts, understanding the potential risks of this medication is important. We describe a case of a significant over dose of Alprazolam.
CASE PRESENTATION
Ms G., a divorced woman in her late forties, had been under the care of a psychiatrist for Major Depression, Anxiety NOS, and ADHD. She was being treated with Vilazadone 40 mg daily, Bupropion XL 300mg daily, Lisdexamfetamine 70 mg daily, and Alprazolam 1 mg four times a day as needed. After becoming overwhelmingly hopeless due to a series of stressors and losses, she attempted suicide one evening by taking 120 mg of Alprazolam. The following morning she was found by her family who called an ambulance. Upon arrival in the emergency department, Ms G. reported she had taken a full bottle of the Alprazolam, become ataxic and had several falls. Her vital signs were as follows: temperature 97.8, blood pressure 122/70 mmHg, pulse70, respiratory rate 16 pulse ox 100% on room air, weight 62.27 kg. Physical exam revealed a moderately distressed, tearful woman, with a right periorbital ecchymosis. She was noted to be alert and oriented. Her mental status exam revealed feelings of depression, emotional lability, and impaired judgment. Pertinent negatives included a completely normal cardiac, pulmonary and neurological exam. Laboratory evaluation revealed a blood alcohol level of <10 mg/dl and a urine drug screen positive for only benzodiazepines. CT imaging of her face showed no acute abnormalities.
OUTCOME
Without any interventions, such as gastric lavage or activated charcoal deemed necessary, Ms. G. was medically cleared and transferred directly from the emergency department to a mental/behavioral health unit. Subsequently, Ms. G was transitioned to intensive outpatient psychiatric care.
CONCLUSION
After consuming a significant amount of Alprazolam-120 mg â€“ Ms. G was awake and alert the next morning without any physical complication other than contusions from falls. As long as cardiovascular and pulmonary systems are within normal limits and stable, patients can be monitored with supportive care. Benzodiazepines have long been publicized for their safety in over dosage as compared to their predecessors, the barbiturates. Benzodiazepines, and in this case Alprazolam,

in over dosage without other substances is relatively safe.

HIPPOCAMPAL VOLUME AND EARLY CHILDHOOD ADVERSITY IN TREATMENT REFRACTORY DEPRESSED PATIENTS

Lead Author: Brett D.M. Jones, B.Sc., M.Sc.
Co-Author(s): Andreas Finkelmeyer MSc, Ph.D., Adrian Loyd M.D., Hamish McAllister-Williams M.D., Ph.D., Nicol Ferrier M.D., Stuart Watson MBBS.

SUMMARY:

Intro:
Reduced hippocampal volume is a consistent finding in Major Depressive Disorder (MDD) and has recently been suggested to be a vulnerability factor associated with the onset of MDD. The hippocampus regulates the HPA-axis- a link that may have implications for the pathogenesis and prognosis of MDD. It has been hypothesized that early childhood adversity plays a role in hippocampal volume reductions and thereby HPA-axis function. This study sought to examine the relationship between early-childhood adversity, hippocampal volume and the HPA-axis in a group of treatment refractory depressed (TRD) patients.
Methods:
42 patients with moderate to severe TRD and 34 matched controls were recruited from primary and secondary care. Salivary cortisol was measured at 0, 15, 30, 45, and 60 minutes post awakening to produce a "cortisol awakening response" (CAR). The CAR was assessed by the total area under the curve (AUCg) as a measure of total output. Childhood adversity was assessed using the childhood trauma questionnaire (CTQ).
Hippocampal volumes were assessed with VBM using SPM8. Grey matter densities were extracted from a hippocampal cluster showing significant association with AUCg in patients.
Results:
Controls and patients did not differ in AUCg ($p=0.502$) or in hippocampal volume ($p=0.339$) but patients had significantly higher childhood adversity scores ($p<0.001$). A path analysis was performed. In patients, there was a direct relationship between hippocampal volume and AUCg ($b=0.496$, $p=0.001$) and between CTQ score and AUCg ($b=0.354$, $p<0.014$). There was however no relationship between CTQ score and hippocampal volume ($p=.908$). In controls there was a direct relationship between CTQ score and AUCg ($b=.581$, $p=0.002$) but no relationship between hippocampal volume and AUCg ($p=0.193$) or CTQ score and hippocampal volume ($p=.369$).
Conclusion:
The results suggest that in TRD patients there is a positive relationship between both hippocampal volume and childhood adversity and total cortisol output. The effects of childhood adversity and hippocampal volume appear to be independent factors on cortisol output, rather than one mediating their effect through the other.
The relationship between these variables is different in patients and controls which indicates the need for further research, preferably in large longitudinal cohorts.
Trial Registration
The study was registered on 21/12/2009 (ISRCTN45338259) under the title "Antiglucocorticoid augmentation of antiDepressants in Depression: the ADD study".
Funding details
This study was funded by NIHR EME (funder's reference 08/43/39).

IMPLANTABLE PSYCHOSIS? ONSET OF ACUTE PSYCHOSIS AFTER CARDIAC PACEMAKER IMPLANTATION: A CASE REPORT AND REVIEW OF LITERATURE

Lead Author: Courtney Joseph, D.O.
Co-Author(s): Carolina Retamero, M.D.

SUMMARY:

Background: Cardiac pacemakers have been in use for over half a century to successfully treat patients with heart block and other bradyarrhythmias. The procedure can have significant patient psychological sequelae, including symptoms of depression and anxiety. However, limited literature exists on development of psychosis after cardiac pacemaker insertion. The authors present the case of a patient who experienced new onset psychosis one month after receiving a cardiac pacemaker.
Case: A 54 year old married African-American female, with a history of depression, presented to the hospital with worsening depression, anxiety, and insomnia for one month after having undergone a cardiac pacemaker

implantation procedure 2 months prior. The patient expressed symptoms of psychosis, including paranoia, religious preoccupations, and persecutory delusions that described that her previous physicians, via the devil, wanted to kill her by implanting the pacemaker. She was adamant that she needed to remove the pacemaker in order to prevent imminent death. A trial of olanzapine, sertraline, and trazodone was begun to which the patient responded well and noted improvement of psychiatric symptoms. However, the patient was readmitted to the hospital one month after discharge in significant distress over similar symptoms in the setting of non-adherence with psychotropic medications. The patient was re-stabilized and discharged home with outpatient follow-up and hope of treatment adherence.
Methods: Review of patient's chart and a Pubmed search was conducted using the terms cardiac pacemaker implantation, psychosis, psychosocial, psychological, and quality of life.
Discussion: This case demonstrates the first onset of psychotic symptoms in setting of recent cardiac pacemaker insertion. Literature review addresses many aspects of the mental adjustment to pacemaker implantation. However, presentation of post-operative psychosis is not well documented. Information of treatment modalities and prognosis of these psychiatric symptoms in the post-operative setting is limited, but has suggested improved pre and post- operative education, psychotherapy, and psychopharmacologic therapies.
Conclusion: This review highlights the importance of physician awareness to the potential psychological consequences cardiac pacemaker implantation. This case demonstrates the possible development of post-operative psychosis as well as potential beneficial treatment options of atypical antipsychotics and antidepressants.
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ATYPICAL NMS, A CASE SERIES

Lead Author: Benjamin Kalivas, M.D.
Co-Author(s): Douglas Glenn, MD

SUMMARY:

Neuroleptic malignant syndrome (NMS) is a serious and potentially fatal complication of treatment with antipsychotics. Although diagnostic criteria exist, NMS is often a diagnosis of exclusion. Atypical presentations can make treating this condition difficult. Three cases of atypical NMS are described in this case series. These cases are unique in their onset and management, but ultimately, the major pathology was felt to be an atypical presentation of NMS.
Case 1: A 60 year old woman with a history of major depression with psychosis and liver cirrhosis who was initially admitted to the psychiatric hospital with suicidal ideation, but then developed altered mental status, tachycardia, hypertension and fever and was transferred to the medical ICU. She had previously been managed on paliperidone decanoate injections and acutely received olanzapine while in the psychiatric hospital. Upon presentation to the ICU she was intubated without need for sedation, rigid in all extremities and persistently febrile. Her creatinine kinase (CK) was only marginally elevated. Ultimately no source of infection was found and the patient slowly improved as antipsychotics were held.
Case 2: A 44 year old male with history of schizophrenia with catatonic features, necrotizing fasciitis, atrial fibrillation and diabetes who presents with altered mental status, rigidity, autonomic instability. His CK was not elevated. He had been discharged 1-day prior for sepsis and new onset artrial fibrillation where he was rate controlled and had completed a full course of antibiotics. In the remote past, this patient had a reaction to olanzapine that was concerning for atypical NMS. Prior to presentation he was being managed on aripiprazole. Antipsychotics were held and the patient was given lorazepam and his presentation improved. No alternative cause of presentation was found despite extensive work up. Ultimately he was discharged off of antipsychotics.

Case 3: A 67 year old man with diabetes who presented with altered mental status and hypoglycemia. Despite adequate glycemic resuscitation, his mental status did not improve. He received antipsychotics as treatment for delirium early on in his care. He continued to have altered mental status and developed rigidity and intermittent hyperthermia. His CK was initially normal. Later in his hospital course, after receiving multiple doses of haloperidol, he developed worsening mental status, rigidity and autonomic instability. At this time, his creatine kinase was greatly elevated and antipsychotics were stopped. Unfortunately the patient had cardiac arrest days later and passed away.
Close examination of these cases provides insight into the different presentations on neuroleptic malignant syndrome. In all these cases, as with typical NMS, early diagnosis and supportive care was of the utmost importance.

PSYCHOLOGICAL RESPONSES TO ILLNESS: A TRANSFORMATION OF OBSESSIONAL PERSONALITY TRAITS FROM AN ADAPTIVE TO MALADAPTIVE ROLE

Lead Author: Matthew R. Kelly, B.S.
Co-Author(s): Anastasia Kostrubala, B.S., B.A., Enoch Barrios, M.D., Harold Wain, Ph.D.

SUMMARY:

BACKGROUND: A common clinical problem facing the modern consulting psychiatrist is the reduction of distress and treatment of psychiatric comorbidities associated with medical illness. Identifying the way in which a patient experiences illness is critical to both managing psychiatric symptoms and optimizing medical outcomes by addressing maladaptive emotional and behavioral responses to a new diagnosis. Psychological response to illness is considered from a multidimensional perspective encompassing the patient's personality traits, the nature of the illness, the coping strategy employed by the individual, and the subconscious defense mechanisms exhibited. Defense mechanisms allow one to manage stressors perceived as intolerable by manipulating reality internally and externally, frequently in a maladaptive manner. Here, we present the case of a patient with obsessional personality traits diagnosed with adenocarcinoma of the pancreas in the context of external social stressors.

CASE: The patient is a 41-year-old African American female with a past psychiatric history of anxiety and possible panic attacks. The patient was admitted for evaluation of a pancreatic mass, later confirmed pathologically to be stage IV adenocarcinoma of the pancreas. Psychiatry was consulted due to an exacerbation of anxiety and possible panic attacks. The patient presented with symptoms of anxiety due to multiple stressors which included her present medical diagnosis and unresolved interpersonal conflicts. During induction chemotherapy her anxiety remained under control for the duration of her admission utilizing guided imagery and relaxation techniques. She did not require medication for her anxiety during hospitalization. Outpatient follow up plan was established prior to discharge.
DISCUSSION: There are several key concepts illustrated in this case which bear further consideration. First, within the classic model of understanding psychological response to illness, this patient exhibited obsessional personality traits which were adaptive in a military environment, where rigidity, order, and discipline are emphasized and rewarded. In the setting of a new medical diagnosis, however, these traits became maladaptive. Second, the presence of social stressors involving retirement issues and her sexual orientation at odds with her religious upbringing elicited discord with her family and inner conflict. Finally, this patient presented with an anxiety disorder which predates her cancer diagnosis, clearly impacting her emotional response to her illness. All these stressors likely contributed to a diminished sense of control over her medical illness, overwhelming her mechanisms of defense and ability to cope with her new reality. By reinforcing her past adopted strengths, she was able to master her anxiety while undergoing cancer treatment. This case serves as a useful model to establish a plan of clinical intervention to strengthen a patient's identified coping skills.

PSYCHOSIS IN LYME DISEASE - A CASE REPORT

Lead Author: Vandana Kethini, M.D.
Co-Author(s): Laima Spokas MD, Alice Shin MS IV, Irmute Usiene MD, Asghar Hossain MD

SUMMARY:

Objective:

This case report of a patient who was diagnosed with Lyme disease presenting with psychiatric problems to an emergency department

Method:

Data was gathered using a comprehensive search of journal databases.

Case:

Mr. E 53-year-old Caucasian male living in New Jersey, previously employed as a professional pilot. According to family patient started to experience memory loss, difficultly driving, reading, and finding words which was progressing in severity. Due to these sudden changes patient decided to seek medical attention. His primary care physician diagnosed him with Lyme disease. At presentation patient did not have any rash or other symptoms except for bilateral symmetrical joint pain and abnormal gait, which later he found out as being a "Lyme gait." He was started on Doxycycline twice daily for 50 days. After a few days of starting the antibiotic patient gradually saw improvement in his symptoms.

The symptoms secondary to Lyme disease improved but according to family patient was suffering from depression. He had decreased appetite, decreased sleep, reported feeling hopeless and helpless. The depressive symptoms worsened and on his father's funeral patient became agitated, aggressive, therefore he was brought to emergency department. In the emergency room patient reported auditory hallucinations, but no other psychotic symptoms were reported. He was admitted voluntarily and started on Olanzapine and Escitalopram. A week after the start of the treatment the patient showed significant improvement of his symptoms. He no longer reported auditory hallucinations. After a month of admission in an acute psychiatric unit he was transferred to an intermediate care with the final goal of being discharged to home.

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THE SYNDROME OF IRREVERSIBLE LITHIUM-EFFECTUATED NEUROTOXICITY (SILENT): NOT SO SILENT

Lead Author: Davit Khachatryan, M.D., M.H.S.
Co-Author(s): Pallavi Nadkarni M.D., M.Med.Sci., MRCPsych

SUMMARY:

In this poster, we report the case history of a 61-year-old female patient with bipolar disorder who developed the Syndrome of Irreversible Lithium Effectuated Neurotoxicity (SILENT). A detailed description of our patient's condition is provided at baseline (i.e. during lithium intoxication) and three years of follow-up, confirming the persistency of cerebellar signs and symptoms. Although rare, SILENT can present as a severe and disabling condition.

CANNABIS INDUCED BIPOLAR DISORDER A DIAGNOSTIC DILEMMA

Lead Author: Erum Khan, M.D.
Co-Author(s): Srijana Shrestha, M.D., Sultana Jahan, M.D., Raquel Diaz, M.D

SUMMARY:

Introduction: Cannabis abuse can lead to to psychotic symptoms in about 15% of cannabis users. Based on research reviews, cannabis can cause psychotic symptoms in individuals who have not achieved abstinence. Cannabis

use may precipitate psychosis in individuals who are presdisposed to acquiring a psychotic disorder. Although the role of cannabis in causing bipolar disorder is not well documented, studies have shown that cannabis use significantly increases risk of manic symptoms later on. The Epidemiological Catchement Area study showed that patients with history of bipolar have a 41% incidence of comorbid use of Cannabis. Cannabis plays a role in complex interactions involving dopamine, Gamma Aminobutyric acid (GABA), and glutamate transmission and other factors that can cause psychotic disorders. However, we do not know why cannabis users can lead to psychotic symptoms in some patients and not in others.

We are presenting a patient with cannabis-Induced Psychotic Disorder who was later diagnosed to have Bipolar disorder with Psychotic features.

Clinical Case: We present a 16 yrs old Caucasian female who was admitted with psychosis and bizarre behavior following cannabis use. Patient was treated with high doses of risperidone and chlorpromazine. Patient's bizarre behavior diminished but did not subside. Patient was also having synesthetic hallucinations reporting she could taste colors. On her third hospitalization she presented with mania, increased activity, racing thoughts, inability to sleep and suicidal ideation. On the unit she continued to pace, exposed herself to others, reported two guardian Angles sitting on her shoulder. Staff had to redirect her constantly. At this time, patient's drug screen was negative for drugs. Patient was treated with Lithium titrated up till therapeutic level (0.6mmol/l) at 600mg po bid, and quetiapine 100mg po qam and 200mg po qhs. Patient was sleeping better and her manic and psychotic symptoms resolved.

Discussion: Until recently, it was believed that no more than 1% of the general population has been diagnosed with bipolar. Emerging transatlantic data reports an increase incidence of bipolar up to 5%. It is proposed that manic-depressive illness occurs in children, but is not diagnosed more often because of its dissimilar presentation to the adult form and doubts about its existence in childhood. In our case, we see a strong association of cannabis- inducing symptoms of mania in a otherwise healthy individual. The dilemma is whether the cannabis abuse can cause Bipolar disorder in an otherwise healthy individual.

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RECOGNIZING AND TREATING SUBSYNDROMIC STEROID-INDUCED MOOD LABILITY, ANXIETY, AND INSOMNIA IN CANCER PATIENTS: A CASE SERIES AND LITERATURE REVIEW.

Lead Author: Darrow Khosh-Chashm, M.D.
Co-Author(s): Rachel Lynn, M.D.

SUMMARY:

Background: The purpose of this case series was to record our clinical experience treating steroid-induced mood lability, anxiety, and insomnia in a small sample of hospitalized cancer patients. To our knowledge, the bulk of previous literature has focused on extreme cases of steroid induced symptoms - mania or psychosis but we see in practice more subtle lability, irritability, and anxiety. To date, few studies have been published that focus primarily on more mild to moderate psychiatric symptoms that do not fulfill criteria for a recognizable psychiatric disorder. We believe this case series will fill an important gap by:(a) making a clear distinction between steroid induced mood lability and anxiety versus mania or psychosis and (b) presenting the atypical antipsychotic quetiapine as a viable treatment option. Methods: In this case series, the authors describe 2 cases of steroid-induced mood and anxiety symptoms treated successfully with quetiapine. "Mr.S," a 62 year-old Caucasian male with a diagnosis of Adult Myelogenous Leukemia and no previous psychiatric history, was referred by his primary team for management of "anxiety and irritability." At the time of referral he was receiving methylprednisolone in treatment of graft versus host disease following allogenic stem cell transplantation. "Miss. P," a 32 year-old Caucasian female with no previous psychiatric history receiving treatment for Glioblastoma Multiforme, was referred by her primary team for the management of "severe anxiety." At the

time of referral she was receiving dexamethasone treatment for tumor-induced edema. At initial presentation, both patients reported that their symptoms began after the initiation of steroid treatments. Objective examination found no evidence of mania or psychosis. An article search was conducted in PubMed and Wolters Kluwer for studies published between 1990 and 2014. The keywords used were: corticosteroids and psychosis, corticosteroids and mania, corticosteroids and psychiatry, and corticosteroids psycho-oncology. Results: Both participants showed strikingly significant pretreatment to post treatment clinical changes with complete resolution of symptoms within 3-4 days of treatment and results maintained at follow-up. Patients continued the medical treatment of their cancer and related complications without interruption or dose adjustments. Literature review offers preliminary support for the use of atypical antipsychotics, including quetiapine, to treat steroid-induced psychosis and mania. Our review also found only one controlled study, using lithium, for steroid induced psychiatric symptoms. Conclusions: This case series adds to the sparse data in the literature on the subsyndromic psychiatric side effects of adjuvant steroid treatments in hospitalized cancer patients. A formal study is needed to enable us to make broad statements. We strongly encourage further research so that clinicians can quickly recognize and treat this condition.

MENSTRUAL CYCLE RELATED EXACERBATION OF PSYCHOTIC SYMPTOMS IN A WOMAN WITH SCHIZOAFFECTIVE DISORDER - A CLINICAL CASE REPORT AND LITERATURE REVIEW

Lead Author: Jyotsna Kilani, M.D.
Co-Author(s): John S. Hopkins, M.D., MPH

SUMMARY:

Introduction: Psychotic symptoms linked to low estrogen levels during the menstrual cycle has been a focus of research since the 1990s. We present a case of a 30 y/o female with Schizoaffective Disorder-Bipolar Type, who displayed a pattern of menstrual cycle exacerbation of her psychotic symptoms. She was treated with an oral contraceptive and an antipsychotic, resulting in a decrease in the frequency of psychiatric admissions.
Case: Patient was admitted for disorganized behavior in the context of medication non-adherence. On admission she was delusional and appeared to be responding to internal stimuli. She was difficult to engage, refused treatment, continued to exhibit bizarre behavior, with poor hygiene. On day 4 of hospitalization a malodorous tampon was found in her room. Her psychiatric history was notable for yearly hospitalizations including 5 admissions during 2012. During her previous hospitalizations she was either menstruating or had her menses within a few days into her admission. During the hospitalization of note, she was stabilized on Fluphenazine and intramuscular Fluphenazine Decanoate. She was discharged on Norethindrone 0.35 mg, Fluphenazine 5 mg BID, Fluphenazine Decanoate, Benztropine 1 mg BID, and Sertraline 50 mg. After discharge patient did not require hospitalization for 14 months, marking a short-term recovery.
Discussion: Gender differences in Schizophrenia, including earlier onset of the illness in males and milder forms in females have been suggested to be a result of estrogen, leading to the "estrogen protection hypothesis". Bergemann explored the symptom changes across the menstrual cycle in pre-menopausal women and found an improvement in psychotic symptoms in the luteal phase. Studies conducted by Reicher-Rosler and Rubin revealed similar results. This led to the investigation of adjunctive estrogen therapy as possible treatment for these effects. Kulkarni compared transdermal estrogen patch to placebo in several RCTs with positive results in the treatment group. Akhondzadeh and colleagues found a greater reduction in positive and negative symptoms with the addition of oral estradiol to haloperidol compared to haloperidol alone. Researchers also found that the low estrogen phase (within 3 days before or after menses) correlated with an increase in psychiatric admissions (1). Our patient demonstrated a similar admission pattern.
Conclusion: Hormonal fluctuations can significantly impact psychotic illness. This case illustrates the importance of considering the contribution of menstrual cycle changes in treatment resistant psychotic disorders. We consider directions of research to understand better the nature of this link, leading towards

the development of effective evaluation and treatment guidelines.

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PERIMENOPAUSE AS A TRIGGER FOR BIPOLAR MANIA WITH PSYCHOSIS: A CASE SERIES

Lead Author: Tyler Kimm, M.D.
Co-Author(s): Alexandra Duran, B.S., Melissa Allen, D.O., Teresa Pigott, M.D.

SUMMARY:

Background: Women with bipolar disorder are reported to have an increased risk for mood episodes at times of intense female reproductive hormone fluctuations including the premenstrual period and the post-partum period. Abrupt loss of estrogen's purported 'psychoprotective' effects in terms of mood and/or psychotic symptoms is often implicated as a key factor in the observed illness exacerbation. Perimenopause is also characterized by widely fluctuating hormone levels with a large decline in circulating estrogen. However, there are relatively few reports concerning the potential impact of perimenopause on the course of bipolar disorder.

Case series: We present a case series of six women with bipolar I disorder who experienced a severe mood episode with psychotic symptoms (five manic episodes and one depressive episode) that resulted in psychiatric hospitalization. Two of the six patients had never been previously hospitalized, and the four others had been off of all psychotropic medications for a mean of 5.1 years (range, 2-10 years). We will review the clinical characteristics of each patient, specific laboratory findings, and the therapeutic interventions for each case. A brief discussion of the available literature concerning the clinical course of bipolar disorder during perimenopause will also be provided.

Discussion: One of the largest studies conducted in females with bipolar disorder reported an increased risk for depression during perimenopause, whereas mood elevation or mania was more likely to decrease with progressive female reproductive stages. However, these cases suggest that the menopausal transition period may be a time of substantial risk for severe manic episodes and/or mood episodes with psychotic features as well as suicidal ideation. Clinicians should be particularly attentive to the potential influence of the perimenopausal period on the course of women with preexisting bipolar disorder.

RACIAL THOUGHT CONTENT; ASSESSING THE THERAPEUTIC RELATIONSHIP WITH A PREJUDICE PATIENT

Lead Author: Teri N. King, B.A.
Co-Author(s): Adekola Alao, MD

SUMMARY:

Introduction

Most current research analyzing racism in treatment discusses the prejudice of the treatment provider rather than the patient. In this report, we describe a patient with racial attitudes toward his provider. We conclude with a new method for classifying racism as a psychodynamic phenomena, and review existing models for establishing a therapeutic alliance.

Case Report

P. W. is a 50 year old single Caucasian man with a history of self-mutilation and multiple suicide attempts. He was involuntarily hospitalized after jumping into traffic during a suicide attempt. At the time, he had a delusions that a black man walking across the street was about to kill him. He had the delusions that he was a slave-owner who had tortured and murdered black people in a past life. He now feels that blacks are seeking revenge. He has had several suicide attempts when in close proximity with a black person. In addition, he expressed extreme guilt which has resulted in self-mutilation.

Discussion

As a black female treatment provider, I had to address include the following questions: 1) Under what circumstances should a therapist continue as a member of the treatment team? 2) Am I in danger of being hurt? 3) Am I in danger of over-treating or under-treating him? 4) Can a therapeutic alliance be formed when a patient is racist? If so, what factors determine whether or not such a relationship can be formed and sustained? 5) What techniques could possibly

be used to form a therapeutic alliance under such conditions.
Conclusion
The therapeutic alliance constitutes the largest obstacle in his treatment. Therapy must take into consideration the significance of race, race relations and bias within society.
These difficult questions need further exploration.

CAPACITY IN THE WAKE OF TEMOFRONTAL INSULT: A CASE REPORT

Lead Author: Sarah A. Kleinfeld, M.D.
Co-Author(s): Edward Wicht, M.D., J.D., L.L.M., Karen Johnson M.D.

SUMMARY:

Case Report: Ms. D is a 49 year old domiciled, employed, married, Caucasian mother of one son (age 13) with no significant past medical or psychiatric history, who presented initially to an outside hospital via police escort with a chief complaint of altered mental status, left hand numbness, and headaches. Prior to her admission, Ms. D telephoned her husband, who was out of town at the time. Mr. D became concerned because his wife's speech was slurred and its content confused. Troubled further by his wife's lack of insight into these new-onset deficits, Mr. D called EMS.
On presentation, Ms. D's speech deficits continued. Her substance use history was significant for a twenty-year pack history of cigarette smoking. CT brain imaging revealed several lesions concerning for metastatic cancer. As a result, Ms. D was transferred to our tertiary care center for further diagnosis and treatment. MRI showed a 1.5 cm left temporal mass, a 7mm right parietal mass, and leptomeningeal enhancement. CT of the chest showed an upper lung mass consistent with primary pulmonary carcinoma. Neurosurgery initiated treatment with high dose intravenous steroids and seizure prophylaxis.
On hospital day 2, Ms. D became agitated and demanding to be discharged; claiming that her husband, who received a lung transplant the year prior, was unable to care for the couple's son, who suffers from Type I Diabetes. Neurosurgery consulted Psychiatry to determine whether Ms. D had capacity to leave against medical advice.
By the time of our assessment, Ms. D's speech was no longer slurred. Though still somewhat confused, per her nurse, the content of her speech was becoming increasingly clear. Nevertheless, she expressed limited insight into the severity of her illness, the dangers of intracranial swelling, and the need for intensive care monitoring. She scored 16/30 on the Montreal Cognitive Assessment (MOCA), suggesting moderate cognitive impairment. As a result, Psychiatry opined that Ms. D lacked the capacity leave against medical advice.
Follow-up: Additional workup revealed Stage IV squamous non small cell lung cancer with brain metastases. She is scheduled to begin whole brain radiation, followed by chemotherapy.
Discussion: This case was particularly interesting because of the likelihood that the patient's temporal lesion and accompanying swelling were directly impacting regions of the brain necessary for capacity. Ms. D's ability to verbalize some understanding her condition but not appreciate fully the consequences of her discharge decision created a intricate capacity issue that also involved potential conflicts between patient autonomy and physician beneficence. Limited data is available about neurocognitive decline in patients with primary brain tumors or metastatic disease and its affect on medical decision making. Further investigation into utilizing standardized measures for determining capacity in these patients may be warranted.

OCD WITH COMORBID NSSI: A CASE FOR PSYCHODYNAMICALLY-INFORMED TREATMENT

Lead Author: Daniel Knoepflmacher, M.D.
Co-Author(s): Julie Penzner, MD

SUMMARY:

Introduction: While researchers have investigated links between obsessive-compulsive disorder (OCD) and non-suicidal self-injurious behavior (NSSI), there is a dearth of literature dedicated to the diagnosis and treatment of these conditions when they are comorbid. We present a case of a man who presented with moderate OCD and severe NSSI to offer an approach to treatment and a framework for further study.
Case: J is a 53 year-old man with OCD admitted to inpatient psychiatry due to prolonged, repetitive, ritualistic breath-holding and muscle-tensing, severe enough to lead to syncope and rhabdomyolysis. Upon in-depth evaluation, a long-standing pattern of self-injurious behavior

emerged, with earlier instances of self-inflicted burns and skin punctures, distinct from J's traditional OCD symptom of counting. In tandem with medical stabilization in the inpatient setting, optimized psychopharmacology and psychodynamically-informed psychotherapy were initiated, resulting in significant improvement.

Discussion: This case illustrates the importance of investigating comorbid NSSI in patients with OCD. Neurobiological research, while far from definitive, has shown strong correlations between NSSI and OCD-related behaviors, with cortical basal ganglia circuitry playing a role in both conditions [1]. Furthermore, the clinical use of high-dose serotonin reuptake inhibitors-first-line treatment for OCD-also addresses serotonergic hypofunctioning associated with repetitive self-cutting [2].

It is in the psychotherapeutic approach where the distinction between OCD and NSSI was more clinically pertinent. OCD is typically best treated with cognitive-behavioral therapy (CBT), a modality this patient had undergone unsuccessfully before admission. Individuals with NSSI have a greater incidence of insecure childhood attachment, early trauma, and are more likely to exhibit alexithymia than the OCD-only population [3]. The severity of J's NSSI hampered his learning and practice of CBT. In his case, the addition of psychodynamically-informed therapy, augmented by CBT techniques, was the most effective treatment. Gaining insight into the psychological antecedents of his pathological rituals provided a more meaningful impetus for the learned cognitive-behavioral strategies. With this approach, the NSSI became ego-dystonic, and thus more treatment-responsive.

This case illustrates how OCD obscures underlying NSSI, underscoring the importance of collecting a nuanced history, particularly since the treatment approach in comorobid cases should be tailored to address both conditions simultaneously.

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THE INPATIENT MANAGEMENT OF INTELLECTUAL DISABILITY AND IMPULSE CONTROL DISORDER

Lead Author: Panagiota Korenis, M.D.
Co-Author(s): Rahulkumar Patel, M.D., Ifeoma Nwugbana, M.D., Marissa Lombardo, Luisa Gonzalez, M.D.

SUMMARY:

The management of aggressive behavior remains a fundamental challenge when working on a psychiatric inpatient service. The task becomes far more daunting when the patient presents not only with mental illness but also has an intellectual disability (ID). Those with intellectual disabilities may present with varying degrees of impairment and social functioning. Numerous studies have identified an association with ID and psychiatric co-morbidities including: bipolar disorder, impulse control disorder, psychosis and depression. Studies have also shown that those who present with both ID and impulse control disorder or bipolar disorder have a tendency to be more aggressive. With the advent of budgetary cuts and subsequent decrease in residential placements, psychiatric services are now more than ever being faced with the dilemma of managing these often complicated patients. While numerous studies have looked at psychotropic management of these patients, there are few studies which examine the inpatient management of those who present with ID and co-morbid impulse control disorder. Here we present three patients admitted to an acute inpatient setting who presented with varying degrees of intellectual disability but were all observed to have impulse control disorder. All three cases brought up a number of clinical questions related to the daily management while on the inpatient setting, and a question of whether these clinical factors may have impacted the hospital admission course. The clinical management of those with intellectual disabilities and impulse control disorder is poorly understood and infrequently reported in the literature. This poster will attempt to explore treatment strategies of those with ID and impulse control disorder including psychotropic management, multidisciplinary

psychoeducation and behavioral modification. We will also discuss the financial burden that such complicated patients place on the mental health system as they often have numerous barriers to disposition. In addition, we aim to bring to light the need for future investigations to better understand how to manage this difficult patient population.

INPATIENT MANAGEMENT OF PSYCHIATRIC MANIFESTATIONS OF HUNTINGTONâ€™S DISEASE: CHALLENGE OF PROGRESSIVELY WORSENING SYMPTOMS AND FADING SOCIAL SUPPORT

Lead Author: Mallika Kucheria, M.D.
Co-Author(s): Sophia Shapiro, MS., Luisa S. Gonzalez, M.D.

SUMMARY:

Huntington's Disease (HD), first described in 1872, is a devastating, autosomal dominant, neurodegenerative disorder for which there is, at present, no cure. One out of every 10,000 Americans has HD. It typically begins in midlife between 30-50 years of age with an average lifespan after onset of about 10-20 years. Symptoms evolve slowly, affecting cognition (depression, forgetfulness, impaired judgment), motor skills (dystonia or involuntary movements, chorea, unsteady gait), and behavior (irritability, depression, personality change, aggressive outbursts).
With the progression of the illness, there are profound effects on the lives of the entire family, mentally, socially and economically, leading to emotional burnouts and a collapsing support system. Eventually, every person requires full-time care. The clinical team is then faced with the challenge of helping the patient and family with progressively worsening symptoms, and with the transition of the patient from family home life to a nursing home setting.

Here we present the case of a 60 year old Hispanic married man with a history of Huntington's disease and major depressive disorder, who prior to hospitalization, was living with his wife. He had become non complaint with his medication regimen, leading to the progression of his illness with prominent involuntary movements, irritability, aggressive outbursts, and personality changes. He was subsequently admitted on the psychiatric unit for further management. This case aims to illustrate the therapeutic course while on the inpatient service, the treatment strategies that needed to be implemented for a better life in the community along with an optimal discharge plan.

SPECIFIC COGNITIVE DEFICITS MIGHT SUGGEST DURATION OF UNTREATED HYPOTHYROIDISM

Lead Author: Shreedhar Kulkarni, M.B.B.S., M.D.
Co-Author(s): Aghaegbulam Uga, M.D., Vineka Heeramun, M.D., David Resch, M.D.

SUMMARY:

67-year-old female presented to the ER with behavioral changes. Upon evaluation, she was found to have significant cognitive deficits in episodic memory with relative sparing of visuospatial deficits. Her clinical findings as well as laboratory values suggested hypothyroidism as a potential cause of her deficits. With a week of supplementation of thyroid hormone her deficits improved. Although there is conflicting data about the nature of cognitive deficits in patients with hypothyroidism, there is some clear evidence to show that such deficits in episodic memory could be related to specific deficits in hippocampal memory. However, patients with short duration of hypothyroidism are found to have globally reduced brain activity. Hence, such deficits in episodic memory with relative sparing of visuospatial deficits might suggest a chronic course of illness in patients with clinical hypothyroidism and this can be assessed using a simple bedside test such as SLUMS (The Saint Louis University Mental Status (SLUMS) Examination).

COCAINE-INDUCED PERSISTENT DYSKINESIA AND OBSESSIVE COMPULSIVE DISORDER

Lead Author: Jasmin G. Lagman, M.D.
Co-Author(s): Sachin Mehta, M.D., Carolina Retamero, M.D.

SUMMARY:

Background
Cocaine use may be associated with different movement disorders which are mostly self-limited and not life-threatening. Persistent movement disorder does not develop in most of these patients. Abnormal movements may

range from multifocal tics, dystonia, opsosclonus-myoclonus and choreiform movements. Cocaine abusers have also been found to be at an increased risk for development of obsessive-compulsive disorder (OCD). We describe a 36 year old male with cocaine use disorder, who had persistent dyskinesia and OCD symptoms after 9 months of abstinence from cocaine.

Case Presentation:

A 36 year old male with no prior psychiatric hospitalization, was admitted for suicidal ideations. He was a daily cocaine user since approximately 14 months prior to admission. After 2 months of use, he started to have involuntary hand movements at rest and complained of jaw dyskinesia 2 months later. He stopped using cocaine 9 months prior to admission. However, the movement disorders persisted and 7 months before admission he experienced severe OCD symptoms including obsessions on the Fibonacci sequence and golden spiral.

Methods

PubMed search using keywords "cocaine-induced dyskinesia", "cocaine-induced movement disorders", cocaine-induced OCD".

Discussion

Most of the abnormal movements due to cocaine use are transient. Cases on persistent abnormal movements induced by cocaine are limited .

Cocaine has an effect on dopamine concentration. It prevents the reuptake at the presynaptic terminal by blocking the dopamine transporter. This increases the extracellular dopamine. However, with chronic use, the striatal dopamine levels are depleted due to overstimulation of dopaminergic terminals and excessive metabolism of the neurotransmitter. This dopamine depletion may explain the movement disorders that cocaine dependents may experience.

Cocaine users can exhibit stereotyped behaviors. These behaviors are referred to as punding. It is described as non-goal directed repetitive activity. The intense fascination of our patient with the Fibonacci spiral and numbers can be described as a form of punding. It is thought to be related to dopamine use, metamphetamine and cocaine addiction and was mentioned in the literature as a possible symptom of dopamine dysregulation syndrome.

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Objectives

To describe persistent movement disorders and OCD features induced by cocaine.

To discuss the pathophysiology of movement disorders and OCD induced by cocaine.

SHORT TERM USE OF PRAZOSIN FOR ACUTE STRESS DISORDER: A CASE REPORT

Lead Author: Laura J. Lai, M.D.
Co-Author(s): Tina Allee, M.D.

SUMMARY:

The utility of the alpha-1 adrenergic receptor agonist Prazosin in treating nightmares in Post-Traumatic Stress Disorder (PTSD) has been well-documented. Some studies have speculated that early intervention may be beneficial in aborting the stress response (Morgan 2003), as it has been hypothesized that during the first couple weeks after a traumatic event, excessive and sustained arousal may increase the likelihood of developing PTSD. One published trial showed reduced psychophysiologic reactivity in patients given a short course of Propranolol 40mg BID within 6hrs of a traumatic event (Pitman 2002). However, to date there has not been a study investigating the usage of Prazosin in Acute Stress Disorder.

In this case study, a patient was diagnosed with Acute Stress Disorder after she began exhibiting symptoms of nightmares, anxiety, and hypervigilance after a major motorcycle accident in which her husband lost control of the motorcycle over some gravel at 40-50mph and she sustained significant blood loss as well as open right fibula/tibula fractures, open left ankle fracture, C4/C5 fracture and multiple areas of road rash/open wounds. She was admitted to an outside hospital, underwent multiple orthopedic surgeries and wound debridements, and was then transferred to the

UC Irvine burn unit 17 days after the accident for continued treatment of her road rash with hydrotherapy as well as the continuation of numerous surgeries for her orthopedic injuries.

Three days after transfer, psychiatry was consulted, as patient was stating that since admission she was afraid to go to sleep and was having nightmares 2-3 times a night. She would feel unable to move during these nightmares, and would wake up thrashing and screaming, with palpitations, jitteriness, and shortness of breath. She was started on Prazosin 2mg QHS and within two days of treatment, patient noted less frequent nightmares and a decrease in anxiety and hypervigilance during the day. Nursing staff reported overall improvement, however we continued to wake from afternoon naps screaming and continued to show exaggerated startle response. Prazosin was therefore titrated up to 3mg QHS, with complete resolution of both day and nighttime nightmares. Despite our concern that nightmares would return if Prazosin was discontinued due to the brief treatment period, we respected our patient's wishes for minimal psychotropic medications. Per her request, Prazosin was titrated down to 2mg for two nights and then stopped. Patient was surveyed for an addition two days following cessation without return of nightmares.

Given the relatively low side effect profile in patients with stable blood pressure, this could indicate more opportunities for reasonable use of Prazosin in the short-term, to stop the acute stress cycle and possibly even prevent the development of PTSD. An organized-controlled study with post-treatment follow-up would be useful in determining the long-term efficacy of such a treatment.

VALPROIC ACID INTOLERANCE IN A PATIENT WITH AUTISM SPECTRUM DISORDER

Lead Author: Laura J. Lai, M.D.
Co-Author(s): Stella Cai, M.D., Tina Allee, M.D.

SUMMARY:

Valproic acid (VPA) is a mood stabilizer commonly used to treat impulse control in patients with autistic spectrum disorder (ASD). However, due to the physiologic abnormalities associated with ASD, it is essential to monitor ammonia level in these patients as this could lead to Valproate-induced hyperammonaemic encephalopathy (VHE).

This is a case of a 22 year-old patient with diagnoses of Autism Spectrum Disorder, Bipolar disorder II, and OCD brought into the emergency department by his father after increased agitation at home in the context of recent medication adjustments. Two years prior, Mr. S was placed on VPA extended release and quetiapine daily after his first admission for a hypomanic episode. Over the next few months, he was overly somnolent and the dose of VPA extended release was lowered to 250mg daily by his outpatient physician. However, Mr. S never returned to his baseline and developed an obsession and compulsion about breaking watches. His outpatient psychiatrist added fluoxetine in order to treat the OCD symptoms. Mr. S quickly decompensated with up-titration of fluoxetine and presented to the ED.

In the ED, he was initially given quetiapine 25mg with no effect. He then received a dose of VPA immediate release 500mg. He became severely agitated after and started making shrill-vocalizations and struck his father. This violent behavior was a significant worsening from his usual agitation. Patient was placed in soft-restraints and given chlorpromazine IM. Labs revealed a sub-therapeutic level of VPA 56mcg/ml and normal albumin level at 4.5. However, ammonia level was elevated at 51. The treatment team decided to discontinue VPA and lowered the fluoxetine dose. One month later, Mr. S remained stable without any OCD symptoms or aggression. Father also noted that patient had become more alert and returned to his baseline mental status prior to his first hospitalization.

VHE has been documented in both acute and chronic usage of VPA for psychiatric symptoms. Although the mechanism is unclear, impairments in the urea cycle as well as carnitine deficiencies have been implicated. Though VHE has been seen in patients with mental retardation, the incidence of VHE in patients with ASD is yet to be determined. However, 30-50% of children with ASD have markers of mitochondrial dysfunction, and studies have reported improvements in ASD behaviors with L-carnitine treatment. Thus, mitochondrial dysfunction in ASD resulting in carnitine deficiency may place patients with ASD at a higher risk of developing VHE.

In this case, the patient likely became acutely agitated due to the activating side effects of fluoxetine. However, his worsening agitation with VPA administration in the ED alerted the

physicians to possible underlying chronic VHE. As such, this case outlines the importance of monitoring not just the VPA level but also the ammonia level in patients with autistic spectrum disorder who are experiencing worsening aggression.

A CASE OF PSYCHOSIS IN A PATIENT USING A WEIGHT LOSS SUPPLEMENT CONTAINING CAFFEINE

Lead Author: Jason Lam, M.Sc.
Co-Author(s): Elisa Simon M.D., Raj Addepalli, M.D.

SUMMARY:
Caffeine-containing weight loss supplements are widely used in North America. These contain a large range of unregulated ingredients in which their efficacy and safety are unknown. The use of such supplements is often overlooked when diagnosing psychiatric conditions.
A 22-year-old woman with no psychiatric or medical history presented to the emergency department with auditory hallucinations. She was extremely agitated, delusional, and paranoid. First-episode psychosis work-up including metabolic and hepatic panels, hemogram, urine toxicology, thyroid function test, syphilis screen, chest X-ray, and a brain computed tomography scan all revealed normal results. She received intramuscular Haloperidol and Lorazepam in the emergency room and oral Haloperidol 10 mg/day was continued in the inpatient unit. Less than 24 hours later, the patient showed marked improvement. She returned to her premorbid mental status by the second day of her admission. Additional history revealed that she had been taking one pill daily of a weight-loss supplement (Cellucor D4 Thermal Shock containing 150 mg of caffeine) for six months but had stopped four months prior to her admission. She resumed taking the same weight-loss supplement two weeks before her admission. She was asymptomatic for the one week that she was observed and discharged without follow up home medications.
Our case of an acute psychosis is unique in that it occurred in a young healthy female without a psychiatric history and the onset of psychosis is temporal with dietary supplement use. Of all listed ingredients in the weight loss supplement, only caffeine has established neuropsychiatric effects. This case illustrates the potential for adverse psychiatric effects of taking dietary supplements for a prolonged period of time and the value of inquiring into their use. This is more so crucial for patients presenting with first-episode psychosis.

CASE REPORT INVESTIGATING PSYCHIATRIC AND PSYCHOLOGIC CHARACTERISTICS OF OHDO SYNDROME

Lead Author: Jessica Layne
Co-Author(s): Suzanne Holroyd, M.D., Tracy LeGrow, Psy. D.

SUMMARY:
Ohdo Syndrome, Say- Barber- Biesecker- Young- Simpson (SBBYS) variant, is a rare genetic condition with occurrence of less than one case per million. In fact, less than 30 cases are reported in the literature. Genetically, it appears to be caused by an abnormality of the KAT6B gene on chromosome 10, which is thought to be involved in early development of the nervous and skeletal systems. Clinically, it is characterized by dysmorphic facies with specific features including; blepharophimosis, ptosis, cleft palate, and abnormalities of the lacrimal glands. Other characteristic abnormalities of the syndrome include; patellar underdevelopment, long phalanges, cryptorchidism, hypotonia, and absence of the corpus callosum. However, given its rarity, there has been little psychiatric or psychologic description of children with Ohdo syndrome. Intellectual disability which, when present, is severe has been noted through case reports.
In this report, a three year old male child with Ohdo Syndrome, Say-Barber-Biesecker-Young-Simpson (SBBYS) variant, is described with a focus on behavioral issues, psychiatric and psychologic assessment including assessment for Autism Spectrum Disorder (ASD). Psychological testing focusing on assessment of possible ASD included testing with the Autism Diagnostic Observation Schedule Module-1, which indicated an appropriate diagnosis of ASD due to impairments in the core criteria necessary for diagnosis including deficits in communication, social interaction, and repetitive interest. Furthermore, the Gilliam Autism Rating Scale- 3 classified the patient into the "very likely" category in terms of an ASD diagnoses based on these core criteria. The Vineland Adaptive Behavior Scale- II

questionnaire was completed by the patient's mother and showed a consistent pattern of delay across all core areas. Baily Scales of Infant Development, which aimed to measured current cognitive development, obtained questionable validity due to difficulties in patient engagement. Clinical exam revealed multiple stereotypies such as rocking and head banging, restricted interest, and a limited ability to initiate socialization. The child was found to meet criteria for ASD. Further details and findings of this patient will be discussed.

SOMATIC TREATMENTS FOR SOMATIC SYMPTOM AND RELATED DISORDERS USING ECT: A CASE SERIES

Lead Author: KaWai Leong, M.D., M.Sc.
Co-Author(s): Fidel Vila-Rodriguez, M.D. FRCPC, Ph.D., Joseph Tham, M.D., FRCPC

SUMMARY:

Introduction
Medically unexplained somatic complaints are highly prevalent and lead to significant impairment and disability. The number of effective treatment modalities for somatic symptom and related disorders (SSD) or somatoform disorders (SD) remained limited. To date, there is no formal indication for electroconvulsive therapy (ECT) in SSD or SD. We are reporting the largest case series to date on the effectiveness of ECT in SSD and SD.
Methods
A retrospective chart review of all patients treated with an index course of ECT at the University of British Columbia Hospital Neuropsychiatric Program from 2000-2010 was conducted. The primary outcomes consisted of changes in pseudoneurologic symptoms, in pain symptoms, in cardiopulmonary symptoms, and in gastrointestinal symptoms; and were examined pre- and post- ECT.
Results
Twenty-eight participants were included in this case series. Twenty-one participants received right unilateral ECT. Six received bifrontal ECT. One received bitemporal ECT. Twenty-one participants reported improvement in pseudoneurologic symptoms; thirteen participants reported improvement in pain symptoms; one participants reported improvement in cardiopulmonary symptoms; and two participants reported improvement in gastrointestinal symptoms.
Conclusion
The mechanism of action of ECT underlying the improvement in SSD and SD remains largely unknown. In this study, ECT has been shown to be effective in the treatment of SSD and SD.
Clinical relevance
The current case series continues to support the use of ECT in SSD, particularly in refractory cases with comorbid mood disorders.

NEUROPSYCHIATRIC SYMPTOMS IN ANTI-NMDA RECEPTOR ENCEPHALITIS: A CASE REPORT AND REVIEW OF THE LITERATURE

Lead Author: Dennis Lester
Co-Author(s): Suzanne Holroyd, M.D.

SUMMARY:

NMDA receptor encephalitis is an autoimmune or a paraneoplastic process that typically presents with neuropsychiatric symptoms but can lead to permanent neurological sequelae or death if not treated promptly. It is associated with antibodies toward the P1 subunits of the NDMA receptors in the central nervous system which are important for synaptic plasticity and memory processes. This condition was first described in 2005 in four females with significant psychiatric symptoms and antibodies for the hippocampal NMDA receptor. Patients may present with hallucinations, delusions, and behavioral disturbance, as well as cognitive deficits, seizures, catatonia, dyskinesias, speech problems, autonomic instability, and coma. The disease typically affects adults, with 66%-80% of patients being female. Twenty to fifty percent of patients are found to have an underlying cancer which is usually an ovarian teratoma, although testicular germ cell tumors, Hodgkin's lymphoma, and small cell lung cancers have also been reported. In males however, an underlying tumor is less commonly found. Severity of symptoms may not preclude a poor prognosis, as patients make a full recovery if the disorder is recognized and treated quickly. The current treatment regimen is steroids, plasmaphoresis and IVIG, followed by immunosuppression if symptoms persist. However, the interval between presentation and treatment is often delayed.

In this case report, a 32-year-old male presented with new-onset seizures and mental status changes for one week duration. Throughout a three-month hospital admission,

his mental status waxed and waned as clinicians worked through a broad differential. As the disease progressed, he became more agitated and aggressive with auditory and visual hallucinations, along with bizarre delusions, requiring antipsychotic and other psychiatric treatment. An initial EEG revealed diffuse slowing at onset followed by temporal localization. MRI showed temporal lobe enhancement consistent with chronic meningitis which lead to an initial working diagnosis of HSV encephalitis. Steroids and acyclovir were started. However, after HSV antibodies and a lumbar puncture came back negative, the differential diagnosis was expanded to include autoimmune encephalitis and anti-NMDA antibodies were found. The patient was given IVIG as per the current treatment protocol. Although the patient's mental status improved, psychiatric and neurologic sequelae have persisted.

Although anti-NMDA is the most studied autoimmune encephalitis, there is still much to be learned about the presentation, pathophysiology, epidemiology, and effective treatment modalities. This case report and literature review adds to the knowledge of this uncommon but devastating neuropsychiatric disease.

WERNICKE ENCEPHALOPATHY FOLLOWING BARIATRIC SURGERY: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Wynne Lundblad, M.D.

SUMMARY:

Background: Wernicke encephalopathy (WE) is a neurological disorder caused by thiamine deficiency and characterized by mental status changes (confusion, amnesia, depression, or psychosis), oculomotor changes, and gait disturbances. Bariatric surgery is a known risk factor for WE; its prevalence in this population is unknown but has been estimated as 1 in 500 patients. Although WE usually develops within 9 months of surgery, there are case reports of patients developing WE up to 20 years after surgery. Screening for WE is not commonplace in post-surgical patients, and thiamine is not a standard post-operative supplement. Thiamine supplementation has been recommended for patients with rapid weight loss and frequent vomiting, but this is not yet the standard of care.

Objective: To present a WE case in the context of the available literature focusing on bariatric surgery patients and discuss the implications for identification and treatment of patients at risk for WE.

Case: Ms. S is a 53 year old woman who presented with psychosis fourteen months after her Roux-en-Y surgery. Her symptoms did not respond to several antipsychotics, and she was committed to a state hospital for several months. She was subsequently hospitalized several more times, with one additional state hospitalization. Several years later, she was involuntarily admitted to a psychiatric hospital after assaulting a nurse. On admission, she believed that she was pregnant with twins despite having had a hysterectomy, and that her shoulder was broken and sticking out of her skin. At that time, she was also found to have executive and memory impairment, peripheral neuropathy, a wide-based ataxic gait, and horizontal nystagmus. A review of the medical record indicated that she had experienced rapid post-surgery weight loss and had a long history of dumping syndrome. Review of the bariatric surgery psychological evaluation, as well as collateral information from friends and family, confirmed that she had no psychiatric pathology prior to her gastric bypass surgery. Ms. S. was treated with high-dose parenteral thiamine for 10 days, with complete remission of psychotic symptoms and incomplete resolution of cognitive symptoms.

Conclusion: Wernicke Encephalopathy should be considered and a targeted clinical exam performed in patients with a history of gastric bypass who present with neuropsychiatric disturbances.

A SHOCK IN TIME: DÉJÀ VU FOLLOWING ELECTROCONVULSIVE THERAPY

Lead Author: Ashley J.B. MacLean, B.Sc., M.D.

SUMMARY:

Background

Well-known side effects of Electroconvulsive Therapy (ECT) include amnesia, cognitive

dysfunction and cardiovascular and respiratory complications (1). However, déjà vu following ECT and the underlying mechanism has not been well studied.

Methods

A case of persistent déjà vu following ECT treatment for depression is discussed. The literature on the side effects of ECT, identified by a PUBMED search, using the key words, electroconvulsive therapy, side effects, déjà vu is reviewed.

Results

Patient is a 31-year-old male, previously diagnosed with major depression, who underwent 11 ECT sessions after failing to respond to different pharmacological agents. Patient subsequently developed déjà vu; feeling that many of the experiences he was going through had occurred in the past.

Discussion

There have been no prior case reports in the literature of déjà vu following ECT. However, an Internet search using the words ECT and déjà vu brings up several discussion boards where patients have expressed experiencing déjà vu following ECT. This would suggest that the phenomenon is not as rare as its scarce reporting in medical literature would lead one to believe. The mechanism of action of ECT is unclear. However, in bitemporal lobe ECT, electric current is passed across the temporal lobes. It is well known that déjà vu is seen in temporal lobe seizures as well as a phenomenon that occurs in the general population (2). Thus, it can be postulated that déjà vu following ECT is related to seizure activity induced in the temporal lobes. In an article by Spatt J (2002), he argues that déjà vu is the "result of a false activation of connections between mesiotemporal memory structures and neocortical areas directly involved in the perception of the environment." According to this theory, "déjà vu experiences reflect an inflexible parahippocampal recognition memory system, responsible for feelings of familiarity, working in isolation while the more flexible hippocampal recall system is not involved." Further electrophysiological studies involving epileptic patients will help elucidate the specific brain regions involved (3).

Conclusion

This case report serves to illustrate déjà vu as a side effect of ECT. The underlying mechanism for ECT induced déjà vu is unclear thus, further studies are warranted with the hope that a greater understanding into the etiology of ECT induced déjà vu will provide us with answers on how to prevent it or minimize ECT induced memory impairment in general.

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PALIPERIDONE PALMITATE INDUCED RETROGARDE EJACULATION: CASE REPORT AND REVIEW OF LITERATURE

Lead Author: Rohit Madan, M.D.
Co-Author(s): Varun Monga, M.D; Rahul Sharma, MD; Robert J. Langenfeld, MD; Sriram Ramaswamy, MD;

SUMMARY:

Introduction: Paliperidone palmitate is a long acting intramuscular formulation of paliperidone, anactive metabolite of risperidone. Paliperidone palmitate is FDA approved in the acute and maintenancetreatment phases of schizophrenia in adults. Sexual side effects observed with it include amenorrhea,erectile dysfunction, galactorrhea, gynecomastia and irregular menstruation. The package insert of Paliperidone palmitate does state retrograde ejaculation as potential reproductive adverse effect.

To the best of our knowledge there have been no published reports of retrograde ejaculation with oralpaliperidone or its injectable formulation. We report a case of retrograde ejaculation with paliperidonepalmitate therapy.

Case Report: Mr. A, a 25-year-old male with schizophrenia, paranoid type was admitted to theinpatient unit for worsened psychosis. His past medical history and substance history were not

significant at the time. His home medications included Olanzapine 20 mg and Bupropion 150 mg. Sincepatient had an extensive history of inpatient psychiatry hospitalizations triggered by poor medication adherence, a decision was made to start him on long acting injectable antipsychotic medication.

Paliperidone palmitate was started and within weeks his psychosis was much improved. He was maintained on 156mg dose per month. Within a month of starting Paliperidone palmitate, he began to
experience difficulty ejaculating with very little or no ejaculate at all. Prolactin levels were 42.6 ng/ml (Normal Range 2.6-13.1 ng/ml). Since his quality of life was being significantly affected by his inability to ejaculate, a decision to taper Paliperidone palmitate was made. Tapering off was done over a period
of about 3 months and patient began to report return of normal ejaculation as early as we reached a
dose of 39mg/day. His Prolactin levels a month after stopping the last Paliperidone palmitate injection
of 39 mg were 29.7 ng/ml.
Discussion: There are several case reports of Risperidone induced retrograde ejaculation. It's actually
very much expected that Paliperidone being active metabolite of Risperidone have similar side effectprofile including retrograde ejaculation. Postsynaptic antagonism of the alpha 1 adrenergic receptor has been implicated in inducing retrograde ejaculation by altering the sympathetic tone of the bladder or urethral sphincter. In our patient, theprompt resolution of his retrograde ejaculation with a dosage decrease, with prolactin levels still being higher than normal does correspond with the understanding that Retrogarde ejaculation is the result of postsynaptic antagonism of the alpha 1 adrenergic receptor rather than rather than direct reflection of hyperprolactinemia.
Based on the above case, in addition to other reported sexual adverse events with paliperidone, it is important to keep in mind that paliperidone can induce retrograde ejaculation.

USE OF DRONABINOL IN A CASE OF HUNTINGTON'S PSYCHOSIS

Lead Author: Kari Malwitz, M.D.
Co-Author(s): Garima Singh, M.D., Amanda Harrington, M.D.

SUMMARY:

Use of Dronabinol in a Case of Huntington's Psychosis
Introduction
Literature reveals the biology of the cannabinoid system may provide benefits in the treatment of neurological disease, notably the slowing of progression in neurodegenerative disorders such as Huntington's Disease (HD).
We present a case of psychosis due to HD wherein dronabinol was approved for use for neuroprotection, mood and appetite.
Case
This is a case of a 46 year old male with a history of psychosis due to HD who was admitted to the hospital for medication management and treatment of his psychotic symptomatology. He endorsed having auditory hallucinations and delusions that the Holy Spirit was instructing him to not eat food and not bathe. He also had poor sleep, hygiene, oral intake, had significant agitation and was often isolative. His medication regimen consisted of several antipsychotic medications- paliperidone palmitate [234 milligrams (mg) intramuscular (IM) followed one week later by 156 mg IM], oral haloperidol 5 mg twice daily and one month prior to this he had received injections of haloperidol decanoate 200 mg IM and olanzapine pamoate 405 mg IM, one week apart. Despite this, he frequently required as needed medications for his agitation.
A request was placed to the pharmacy for approval of dronabinol for neuroprotection, mood and appetite. After approval, a starting dose of 2.5 mg oral, three times a day with meals was started. He was noted the following day to be mellow, in terms of mood and affect. Two days after initiation of dronabinol, he was more polite, eating more of his meals, and was quieter on the inpatient unit. He became more aware of his personal hygiene and was less isolative. Three days after initiation, his mood was markedly improved, he was considered to be pleasant and bright, and was eating more resulting in a three pound weight gain for that week. By day 5, there was a continuing improvement in mood and affect with less irritability, less labile moods, and his attention span continued to show improvement. His hygiene and appetite were deemed adequate.
Discussion
Studies have demonstrated a loss of cannabinoid CB1 receptors in the postmortem basal ganglia of patients affected by HD. One study reported an increase in endocannabinoid activity allowed an activation of the remaining population of CB1 receptors, resulting in a significant improvement of motor disturbances and neurochemical deficits in HD.
Although studies have shown cannabinoid-mediated increases in CB1 levels could reduce

the severity of some molecular pathologies observed in HD, there is limited literature and research on the subject. Further investigation of this topic is warranted.

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RESTRAINT IN THE USE OF RESTRAINTS: A CASE OF DELIRIUM AND A DISCUSSION OF CLINICAL AND ETHICAL CONSIDERATIONS IN THE USE OF MULTIMODAL RESTRAINTS

Lead Author: Jed P. Mangal, B.S., M.D.
Co-Author(s): Hanna Zembrzuska M.D.

SUMMARY:

Delirium is a psychiatric syndrome that is common among hospitalized patients, especially among elderly and critically ill patients with estimated prevalence of 15%-55% and 30%-80%, respectively. Delirium has many causes and is likely multifactorial, leading to a poor understanding of the physiology of the disease. However, it is known that the development of delirium has impacts on patient outcomes, leading to the development of permanent cognitive impairment and increasing mortality 3 to 5 fold.

A 75 year-old male with stage IV lung adenocarcinoma and peritoneal carcinomatosis presented with shortness of breath, abdominal pain, and disorientation. He was found to be febrile, tachycardic, tachypneic and hypotensive. On exam, patient was oriented to name but needed frequent reorientation and appeared somnolent at times. His abdomen was distended, tense, and diffusely tender with a positive fluid wave. He had no abnormalities on neurologic exam, although he had difficulty with commands. Laboratory and other diagnostics were significant for leukocytosis, metabolic acidosis, lactic acid level of 4.7 and peritoneal fluid WBC count 1057. He was diagnosed with septic shock and delirium and admitted to the ICU for volume resuscitation, blood pressure and respiratory support, and started on intravenous Piperacillin/Tazobactam. In the first 24 hours of admission his fever and abdominal pain improved, however his hypotension and altered consciousness persisted. He frequently removed supplemental oxygen, argued with nursing staff, and tugged at intravenous lines. He required frequent attention from nursing staff overnight, who placed the patient in mittens and wrist cuffs. The patient became increasingly agitated overnight until nursing requested Lorazepam as needed for chemical restraint in addition. At this time, the patient was started on low dose haloperidol with improvement of his agitation. The patient's condition improved greatly over his remaining admission, haloperidol was discontinued and he was discharged home.

Management of delirium usually involves non-pharmacologic measures, including sleep hygiene, frequent reorientation, familiarizing environment and mobilization, and can require antipsychotic medications. The use of physical or chemical restraints is not recommended in delirium unless the patient is at high risk for harm or violence. However, the prevalence of restraint use in critical care patients is estimated to be 13.6%. Key ethical concerns of restraint implementation include violating the patient's right to autonomy, causing harm to the patient by restraining them, and weighing the benefits of restraint versus no restraints. The early use of antipsychotics in delirium has been shown to reduce the prevalence of restraint use, which can help to avoid the risks of restraining delirious patients but is not without risk itself. These issues are well described in nursing literature, however an increase in physician awareness is needed.

A MORE TOXIC ALCOHOL: A CASE EXAMPLE OF UNIQUE CNS EFFECTS FROM RECURRENT ISOPROPANOL ABUSE

Lead Author: Rabeea Mansoor, M.D.
Co-Author(s): Katy LaLone, M.D.

SUMMARY:

Background: Isopropyl alcohol is an inexpensive commercial product readily available as "rubbing alcohol" and an ingredient in many household cleaning products. Intentional ingestion of isopropanol occurs in severe alcoholics who substitute it for ethanol when the latter is unavailable.Significantly more potent than ethanol, ingestion of only 20 mL causes

intoxication, while 200 mL can cause coma or death[1].Peak serum levels are achieved in an hour of ingestion, producing twice the neurologic depression as ethanol at comparable levels; however, its long-term effects are poorly understood. We present a case of chronic isopropanol abuse in a known alcoholic who demonstrated unique clinical and neuroradiologic findings.
Methods:A 65 year old male with a 30 year history of alcoholism and chronic isopropanol abuse presented after ingestion of rubbing alcohol with elevated isopropanol and acetone levels and a neurological exam remarkable for significant tremor, ataxia and dysmetria with noted cognitive impairment.MRI findings present for over a decade prior showed cerebellar atrophy with severe vermal atrophy, consistent with our clinical findings. To better quantify the epidemiology of chronic isopropranol abuse, we contacted CDC, poison control, and NIAAA. We conducted a literature search to examine the relationship between chronic isopropanol abuse and the neurologic findings in our patient and compared these images to those of chronic ethanol abusers.
Results:The National Poison Data system reported 17,419 exposures to isopropanol and isopropanol containing products in the US in 2012[2],but no data about the prevalence of isopropanol abuse. Literature review revealed case reports of acute toxicity, but limited data on chronic effects or neuroradiologic correlates. Chronic alcoholism causes generalized atrophy of the cerebral cortex, with notable frontal lobe changes and diffuse cerebellar atrophy, which was clearly discrepant from MRI findings of our patient, suggesting an alternate mechanism.
Discussion:Given the more toxic profile of isopropanol compared to ethanol, it is reasonable to suspect that its habitual abuse can cause neurologic damage in specific brain regions. While this is only one case example and there are many confounding factors to consider, we suspect that this patient's chronic isopropanol use led to more severe vermal atrophy than would be expected in alcoholism alone.
Conclusion:To date, the unique neuropathologic effects associated with chronic isopropanol abuse have not been clearly established.Given it is readily available and toxic in small amounts,we propose that further large-scale investigations are needed to clarify the pathologic changes due to its chronic abuse and its neuroimaging correlates to enable early diagnosis and prevention of its neurologic sequelae.
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TREATING PSYCHOSIS IN A PATIENT WITH PARKINSON'S DISEASE

Lead Author: Michael Marcus, M.D.
Co-Author(s): Sean Minjares, M.D., Geoffrey Phillips, M.D.

SUMMARY:

Introduction
Parkinson's Disease Psychosis (PDP) is a "syndrome of psychotic symptoms present continuously or intermittently over the course of a month in someone with idiopathic Parkinson's Disease who has no primary psychotic process." Some patients with PDP may have dementia, and some may take antiparkinsonian medications. In some instances, PDP is attributable to antiparkinsonian medications. PDP represents a challenge for providers due to antipsychotic selection. Current evidence suggests clozapine and quetiapine are both effective in treating PDP. Using this evidence, the authors of this case report present a patient with PDP who was treated with clozapine initially, and later quetiapine.
Case
The patient is a 65 year old male with Parkinson's Disease, PDP, and major neurocognitive disorder who was admitted to the inpatient psychiatric unit after he wandered from his home and had anger outbursts. He was continued on his antiparkinsonian medications including carbidopa 25 mg/levodopa 100 mg QID, ropinirole 2 mg TID, and rasagiline 1 mg daily. While on the inpatient unit, he displayed psychosis including visual hallucinations and disorganized speech. Due to continued psychosis, the patient was started on an antipsychotic. After ensuring his baseline labs were within normal limits, clozapine was started at 12.5 mg and this was gradually increased over multiple days to 37.5 mg. While the patient's psychosis appeared to improve gradually with this medication, he developed consistent tachycardia. As such, his clozapine was gradually tapered off. Due to the concerns that his antiparkinsonian medications could be worsening his psychosis, neurology was

consulted to assess for the possibility of decreasing his dosages of these medications. Neurology recommended that the patient continue rasagiline 1 mg daily, but to lower the carbidopa/levodopa to TID and the ropinirole to BID. After making these changes and discontinuing clozapine, the patient was started on quetiapine 12.5 mg TID. The patient showed good response to this dose and as such, the dose was increased to 12.5 mg QID. However, the patient had too much sedation during the day from this dose and as such, the evening doses were combined such that the patient received 12.5 mg QAM, QPM and 25 mg QHS. The patient's psychosis gradually improved with the quetiapine and he was discharged.
Discussion
The patient's psychosis appeared to improve with dose reductions of his antiparkinsonian medications as well as with clozapine and quetiapine; however, the patient was unable to tolerate the clozapine due to his tachycardia. Per the American Academy of Neurology (AAN), clozapine is deemed "probably" effective for PDP whereas the AAN states that quetiapine is "possibly" effective for PDP. Therefore, in patients with PDP, careful attention should be paid to the choice of antipsychotic as well as the patient's antiparkinsonian regimen.

COMORBIDITY BETWEEN BORDERLINE PERSONALITY DISORDER AND EATING DISORDERS: A CASE REPORT

Lead Author: Marianne L. Martins
Amanda D. Machado, Carla M. F. Dias, Kenia K.F. Nascimento, Samara A. F. Araújo, Tatiana T.T.G.M. Lourenco, M.D. Ph.D.

SUMMARY:

Introduction: The presence of eating disorders is frequent among patients with some personality disorders, especially borderline, histrionic and anancastic (Martins and Sassi, 2004). These comorbidities have been investigated during the last decades, due to their impact on the approach and treatment of the patients.
The following is a case study of a female patient with Borderline Personality Disorder (BPD), suffering from Anorexia Nervosa binging/purging type. Eating disorders can hold traces of BPD, especially concerning the impulsivity features they have in common. However, it is an often neglected comorbidity, which supports the relevancy of this case's description.
Case Description: A fashion student patient, female, single and aged twenty-seven, was voluntarily committed after a suicide attempt. After a breakup of a three-year relationship, she related ideations and plans of suicide. Since then, she's been presenting dissociative escapes and childlike behavior. The patient has had eight previous institutionalizations due to other suicide attempts and acute anorexia complications. At the age of fifteen, she started with purging behavior such as ingesting shampoo, laxatives and diuretics; nowadays, she also refuses to ingest solid food. She denies substance use and sexual abuse in the past.
Discussion: The patient presents important characteristics that point to a diagnosis of BPD. The traces of impulsivity can be described in her binge-eating behavior and suicidal tendencies. In addition, an affect instability concerning the other patients in the ward was observed, especially anger. The dissociative symptoms also suggest a BPD.
Studies comparing the prevalence of personality disorders among patients with eating disorders show that BPD was the most prevalent in patients with Anorexia nervosa binge-eating/purging type and bulimia nervosa. (Sansone et al, 2005) Moreover, other studies demonstrate that eating disorders were more prevalent between female patients with BPD than female patients with other personality disorders. (Zanarini et al, 2004).
These data corroborate the case presented, which consists of the most common comorbidity's presentation.
Conclusion: It was observed that some types of personality disorders, especially BPD, tend to be more frequent among patients with eating disorders. It is very important for the clinicians to take this comorbidity into account, due to its implications on the evaluation and prognosis of their patients.

POST-TRAUMATIC STRESS AND GROWTH IN MEDICAL STUDENTS AFTER NATURAL DISASTERS IN FUKUSHIMA, JAPAN AND NEW YORK, USA

Lead Author: David S. Anderson, B.A.
Co-Author(s): Phoebe Prioleau, M.P.H, M.Phil, Shohei Andoh, Yu Naruse, Hideharu Sekine,

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SUMMARY:
The March 2011 "triple disaster" (earthquake, tsunami, and nuclear accident) had a profound effect on Japan's northern prefectures. Students at Fukushima Medical University were involved in responding to this extraordinary event and providing aid to survivors. A year and a half later, when Hurricane Sandy hit New York City, medical students from the Icahn School of Medicine at Mount Sinai helped with the hospital response and volunteered in hard-hit areas. Other studies have looked at the psychological response of workers and volunteers to both 3/11 and Hurricane Sandy, but none focused exclusively on medical students. We aim to shed light on the ways in which physicians in training are affected by a large-scale disaster.
We distributed a survey to all 705 currently-enrolled medical students at Fukushima Medical University and collected 494 responses (response rate: 70%). This survey assessed the nature of students' involvement with the 3/11 disaster as well as their post-traumatic symptoms and growth using the Davidson Trauma Scale and Posttraumatic Growth Inventory. We are administering a similar survey to Mount Sinai medical students this fall to assess their involvement with volunteer efforts after Hurricane Sandy, and will integrate the results of both surveys. Modeling our analyses on a similar study conducted with Mount Sinai students after the September 11, 2001 attacks in New York, we will examine the multifactorial nature of students' symptoms and the effects that different levels of personal connection to the disaster, involvement in the relief efforts, and sociodemographic factors such as gender and age have on students' symptoms and post-disaster growth.

SYNTHETIC MARIJUANA INDUCED PSYCHOSIS: A CASE REPORT

Lead Author: Gloria R. Martz, D.O.

SUMMARY:
Synthetic marijuana induced psychosis is a growing phenomenon among adolescent and adult males in the United States. Many forms of the substance known as "Spice" or "K2" are legal and available for purchase. A case is presented of a 21 year old Caucasian male admitted to a state inpatient psychiatric facility for symptoms of paranoia and psychosis following the use of synthetic marijuana. This case report focuses on the epidemiology, pathophysiology, presentation, and management of synthetic marijuana induced psychosis.

NEW ONSET PSYCHOSIS AND SEIZURES: A CASE REPORT OF NMDA ENCEPHALITIS

Lead Author: Anu Mathur, M.D.
Co-Author(s): Sarah M. Fayad, M.D., Almari Ginory, D.O.

SUMMARY:
Introduction
Anti-NMDA receptor encephalitis is identified as a cause of autoimmune and paraneoplastic encephalitis. It has been associated with tumors, however, there are cases with no detectable tumor. The prodromal phase includes fever, malaise, headaches, nausea, vomiting, and diarrhea. Patient's then develops neuropsychiatric symptoms including psychosis, aggression, apathy, depression, catatonia, seizures, abnormal movements, insomnia, autonomic instability, and memory deficits. We present the case of a patient with seizures, delirium, agitation and psychosis from NMDA encephalitis.
Case Report
A 25 year old Caucasian male with history of alcohol and cannabis abuse who was admitted for seizures. For the last three years, he had been drinking four 16oz malt liquors a day, but had endorsed quitting 2 weeks prior to admission. His seizure onset and EEG were both focal, suggesting a structural lesion in the right hemisphere. MRI was negative as well as CSF studies. During admission, patient developed psychosis and was agitated. Initially his symptoms were attributed to DT's (delirium tremens) but symptoms persisted even after several weeks of abstinence. Patient was on lorazepam taper, which was difficult to wean due to worsening agitation and delirium. Patient had signs of autonomic instability including hypertension and tachycardia, also had recurrent episodes where he was severely agitated. He had told nursing staff on one occasion that he was a marine biologist and that there were dolphins in the hospital room. A paraneoplastic panel was sent due to persistent psychosis and results came back positive for

autoimmune limbic encephalitis NMDA-R Ab. Patient was started on IVIG and IV Solumedrol. Malignancy work up including CT scan of chest, abdomen and pelvis, and testicle ultrasound were completed which were all negative. Further EEG studies showed diffuse slowing and generalized rhythmic delta activity plus superimposed fast activity in the beta range mostly over the bifrontal regions with the appearance of delta brushes. Delta brushes on EEG have been reported in anti-NMDA receptor encephalitis.
Conclusion
The clinical picture was concerning for a process other than DT's as the symptoms persisted longer than the usual withdrawal period. Also, the seizures from withdrawal would not be expected to have focal features. As neuropsychiatric symptoms persist, it is important to consider further evaluation of autoimmune or paraneoplastic limbic encephalitis, which often does not have imaging or CSF correlates. As symptoms may be secondary to a tumor, malignancy work up is crucial and monitoring continues for at least 5 years. African American females older than 18 years old have an increased likelihood of an underlying tumor. Treatment includes tumor resection and first-line immunotherapy including corticosteriods and IVIG. For treatment resistant patients, second-line immunotherapy includes Rituximab or cyclophosphamide or a combination.

POST ORGASMIC ILLNESS SYNDROME - A PSYCHIATRIC OR MEDICAL ILLNESS?

Lead Author: Askar Mehdi, M.B.B.S., M.D.
Co-Author(s): Aditya Patel, M.D., Asghar Hossain, M.D.

SUMMARY:

Post Orgasmic Illness Syndrome (POIS) a rare disorder. It is thought to represent a spectrum of syndromes with different etiologies. Literature search was done to explore approach towards such patients and work up required. We conducted our search through PubMed and articles from references. At our facility we came across a 27 year old male, who was experiencing symptoms of, anxiety, word finding difficulty, weakness, myalgia, tinnitus, cold intolerance, neuropathy, rashes, motor tics, and occasionally sudden episodes of breathlessness where he felt incapacitated. Symptoms began after puberty but have been more pronounced for last seven years during his relationship. Patient reported prolong episodes of illness directly after each orgasm that has affected his functioning, his relationships and inability to hold steady employment. Patient was having feelings of hopelessness, helplessness and severely depressed. Subsequently was brought to emergency department after aborted suicidal attempt. Blood work, Urine toxicology and vitals were with in normal limits. More studies are required to substantiate its origin from immunogenic reaction towards own semen or a psychiatric disorder related to "dhat syndrome" with intense anxiety or dysphoria following discharge of semen. That will guide towards proper treatment of such patients.

A 49-YEAR OLD WOMAN WITH PSYCHOSIS ASSOCIATED WITH HASHIMOTOâ€™S THYROIDITIS:THE IMPORTANCE OF A MULTIDISCIPLINARY TEAM APPROACH WITH FAMILY INVOLVEMENT

Lead Author: Paroma Mitra, M.D., M.P.H.
Co-Author(s): Willy Philias, M.D., Erin Samuels, M.D., Evaristo Akerele, M.D.

SUMMARY:

INTRODUCTION:-Thyroid disease has been known to cause new onset mood and psychotic symptoms in patients. There are very few reported cases of Hashimoto's thyroiditis associated with psychiatric disorders.

CASE:-A 48 year old woman without a previous psychiatric history was brought into the emergency room secondary to the sudden onset of paranoia and religious preoccupation. On initial evaluation the patient was described as illogical and disorganized and presented with pressured speech and flight of ideas. Initial workup showed the presence of hypothyroidism with increased Thyroid Stimulating Hormone levels. Endocrinology was involved and based on their recommendations the psychiatry team obtained imaging studies. The studies showed the presence of a multi-nodular goiter. The patient was commenced on anti-psychotic as well as mood stabilizer treatment. Endocrinology recommended the use of methimazole in addition to treatment given. The patient's psychotic symptoms decreased

considerably and her mood symptoms began to resolve. Further studies using Fine Needle Aspiration Cytology showed Hashimoto's thyroiditis. Eventually the patient's psychotropic medications were tapered off and methimazole was maintained.
CONCLUSION:- The case highlights the importance of thyroid function tests especially in the presence of sudden onset mania or psychosis in women. A multidisciplinary approach with necessary medical teams are warranted for complete and accurate treatment of patients with deranged thyroid profiles

ECT IN CLOZAPINE RESISTANT SCHIZOPHRENIA

Lead Author: Varun Monga, M.D.
Co-Author(s): Rohit Madan, M.D., Sriram Ramaswamy, M.D.; Srinivas Dannaram, M.D.; Robert Langelfeld, M.D.

SUMMARY:

Introduction: Treatment resistant Schizophrenia presents a significant challenge to psychiatrists. Despite the superior efficacy of clozapine in this group of patients, a sizable number of patients continue to experience significant positive and negative symptoms with clozapine therapy. In such cases, adding ECT to clozapine can be helpful. ECT is most commonly used in the treatment of severe depression. However, there is data to suggest that ECT and antipsychotics have synergistic effects. In addition to rapid control of symptoms, ECT combined with clozapine can help lower rates of polypharmacy particularly since studies have found little or no advantage of augmenting clozapine with antipsychotics. There are no formal guidelines regarding this approach. Combined ECT and clozapine therapy can prolong seizure time and increase risk for cognitive side effects. This can pose a therapeutic dilemma for clinicians. We report a case of a treatment resistant schizophrenia on clozapine therapy successfully treated with ECT.
Case Report: A 26 year old Caucasian male with treatment resistant schizophrenia was on clozapine therapy for 6 months. His other medications included Paliperidone 9 mg a day, Citalopram 40 Mg a day, Divalproex 1000 mg at bed time and Lorazepam 1 mg three times a day as needed. Despite an adequate trial of Clozapine at therapeutic dose, the patient continued to exhibit significant positive and negative symptoms. He had auditory hallucinations, paranoia, anhedonia, poor hygiene, poor grooming and poor engagement in social activities. There were no concerns regarding medication compliance, drug use or other medical issues. He was actively engaged in a psychosocial recovery day program. Despite psychosocial and psychotherapeutic interventions, patient's condition did not improve and in fact progressively worsened. His wife left her job so that she could stay at home and take care of her husband and kids. After a careful risk and benefit assessment and utilizing a shared medical decision making approach, a decision to start ECT was made. Divalproex was discontinued and Lorazepam lowered with instructions not to take the drug the night before ECT. After obtaining appropriate medical clearance patient was schedule for outpatient ECT. He received 9 bilateral ECT sessions over the course of 3 weeks. Patient reported jaw and leg pain post procedure. He also reported short term memory problems after the 7th treatment. Significant improvement in negative symptoms, positive symptoms and mood symptoms were reported by 6th treatment. Seizure length was not affected with this combination. Maximum seizure length the patient had over the course of treatment was 86 secs.
Conclusions: Clozapine and ECT treatment can be effectively and safely combined despite the risks involved. This strategy may be a good option in patients with suboptimal response to clozapine. We review the literature on initiating ECT treatment in patients on clozapine therapy.

ACTH-PRODUCING PULMONARY CARCINOID TUMOR PRESENTING AS LATE-ONSET MANIA

Lead Author: Robert J. Morgan III, M.D., Ph.D.
Co-Author(s): Kemuel Philbrick, M.D.

SUMMARY:

Cushing's syndrome is an uncommon but well-described cause of neuropsychiatric disorders. Depression is the most commonly associated psychiatric manifestation of Cushing's syndrome, but manic episodes and psychoses have also been observed and described. Pituitary adenomas are the most common cause of Cushing's syndrome generally, but lung tumors are the most common cause of Cushing's syndrome due to ectopic ACTH production. Bronchial carcinoid tumors make up approximately 1 to 2 percent of all lung

malignancies in adults, and approximately 1 to 2 percent of bronchial carcinoids are associated with Cushing's syndrome. Despite this prevalence, to our knowledge there have been no prior reports of bronchial carcinoid tumors presenting with neuropsychiatric manifestations.

Here, we present a case of a 56 year-old woman with no prior psychiatric history who presented with recurrent episodes of psychotic mania without depression. She was treated effectively with mood stabilizing antipsychotics. She was subsequently noted to have refractory hypokalemia and typical Cushingoid features which ultimately led to a diagnosis of Cushing's syndrome secondary to an ACTH-producing bronchial carcinoid. Surgical excision of the tumor led to resolution of endocrinological markers of Cushing's syndrome, and the patient was able to taper off of mood stabilizing medications with no recurrence of mood symptoms. We review her case as well as diagnostic and prognostic considerations in cases of ectopic ACTH production, particularly in association with confounding findings in patients with mood disorders.

REQUIP FOR A DREAM! A CASE OF VIVID HALLUCINATIONS SECONDARY TO ROPINIROLE

Lead Author: Sonia Motin, M.D.
Co-Author(s): Sonia Motin, M.D., Paul D Harcourt, Brian Hays, D.O., Sara L Galdys, Kathleen A. Gross, M.D., Michael Liepman, M.D., Tracey L Mersfelder, Pharm.D., Lorenzo Zaffiri, M.D.

SUMMARY:

Introduction

Ropinirole is a dopamine 2/3 agonist that was approved for restless leg syndrome (RLS) in 2005. Adverse events such as nausea, vomiting, somnolence, and dizziness were reported in over 5% of patients. More concerning are the psychiatric side effects such as confusion and hallucinations have been described in patients with advanced Parkinson's disease. We report a case of rapidly progressive perceptual distortion associated with vivid hallucinations that resolved with discontinuation of ropinirole.

Case Report

A 70-year-old female presented to the hospital with a chief complaint of altered mental status and hallucinations. Her medical history was significant for diabetes mellitus type 2, frequent urinary tract infections (UTI), vascular dementia, depression and RLS. In the last three years her mental status began to gradually deteriorate. Correlating with this timeframe, she began taking ropinirole 2 mg at bedtime in October 2009 for RLS with good compliance.

On admission, she was found to have a UTI and bizarre behavior characterized by vivid hallucinations. Ciprofloxacin was initiated for treatment of the UTI. All central nervous system depressant drugs including ropinirole were discontinued. A rapid improvement of clinical condition and disappearance of hallucinations were noted after the second day of hospitalization. However, ropinirole was then restarted based upon the patient's request during the third night of hospitalization for her RLS symptoms. The following evening hallucinations and psychotic symptoms returned. Ropinirole was again discontinued and within 24 hours the hallucinations resolved. Moreover, the patient's mental status significantly improved following the addition of quetiapine, a dopamine antagonist.

Discussion

Ropinirole is a dopamine agonist frequently used to improve symptoms of RLS at night. Despite several case reports describing hallucinations with ropinirole use, a recent meta-analysis of safety and tolerability of ropinirole use in RLS did not suggest hallucinations as a potential adverse effect. However, a meta-analysis in Parkinson's patients reported a relative risk of hallucinations to be 2.84. Upon admission the patient's symptoms were significant and could have been accentuated by the presence of the UTI and the concurrent use of ciprofloxacin, which increases the serum concentration of ropinirole. We believed that ropinirole caused vivid hallucinations and progressive deterioration of the patient's mental status. The results of the Naranjo adverse drug reaction probability scale related this case of hallucinations as "probable" and a second challenge with ropinirole supports our hypothesis. In addition, treatment with quetiapine, a dopamine antagonist, induced a significant improvement in the patient's sensorium.

Conclusion

This case highlights the risk of vivid hallucinations with the use of ropinirole in patients not affected by Parkinson's disease.

THE DIAGNOSTIC TO IDENTIFY PSYCHIATRIC MANIFESTATION OF CHRONIC LYME DISEASE

Lead Author: Farha Motiwala
Co-Author(s): Fatima Motiwala, M.D.
Daniel Finch, M.D.

SUMMARY:

OBJECTIVE:
Our aim by presenting this case report is to bring to awareness the psychiatric manifestations of Lyme disease which can be misdiagnosed as the primary mental illness.

INTRODUCTION:

Lyme disease, the most prevalent vector borne illness in United states has been an area of interest for different clinical specialties due to the wide range of symptoms caused by this debilitating illness. The neuropsychiatric symptoms found in patients with chronic Lyme include depression, sleep disturbances, fatigue, and cognitive decline and are found to cause significant morbidity. Studies show that depression is common and was found in 26% to 66% of the cases. Panic attacks, obsessive compulsive disorder, manic symptoms, personality changes, aggression, attention deficit disorder and paranoid ideations are less common psychiatric manifestations of this illness. Dementia and hallucinations are the rare psychiatric symptoms found in patients with chronic Lyme.

CASE NARRATIVE:
We present the case of a 48 yo female with past psychiatric history of depression and past medical history of Lyme's disease for 4 years and toxoplasmosis presented with chest pain and feeling of having parasites in her skin and eyes. Pt reported having chest pain since past few weeks but worsened over the last 2 days. Pt reported that parasitic infestation is causing itching in her eyes. She reported she has been treated for Lyme's disease for past 2 and half years. Pt denied symptoms of depression but reported poor sleep and appetite. Pt was currently on Daraprim for toxoplasmosis. Past medications included sertraline (SSRI) and escitalopram but was not currently taking any psychiatric medication. Pt was diagnosed with delusional parasitosis. Pt was discharged to home with outpatient psychiatric follow up appointment as she denied threats to self or others and also denied other psychotic symptoms including auditory and visual hallucinations.

DISCUSSION:
Cerebrospinal fluid (CSF) testing is important in patients with neuropsychiatric manifestations. CSF evaluation before the initiation of antibiotics is important but negative results do not rule out the neuronal damage caused by lyme disease. Lymphocytic pleocytosis is commonly found in early stages while late stage can show elevated protein in CSF only. Depression, psychosis, dementia and other psychiatric illnesses are considered to have inflammatory pathogenesis. Lyme disease is linked with IL-6, IL- 8, IL-12, IL-18, and interferon gamma.

Thus when treating psychiatric illnesses, it is important to remember that Lyme disease can have psychiatric manifestations. Successful management of psychiatric symptoms including depression, sleep disturbances and fatigue leads to decrease in stress and helps recovery from Lyme disease and improves overall prognosis.

LONG TERM PATIENT IN ACUTE UNIT

Lead Author: Hala Moustafa, M.D.
Co-Author(s): Gayle Pletsch, M.D., Erik Kinzie, M.D.

SUMMARY:

Background:
There has been massive cutting in the amount of long term psychiatric beds lately with initiating alternative programs like transitional housing, day programming, vocational rehab services, etc. Based on surveys of public psychiatric beds, there were over 300 inpatient psychiatric beds per 100,000 people in the United States in 1955 compared to an average of 17 beds in 2005.
Purpose:
Is the current number of long term beds reasonable? Can the alternative programs compensate for the current shortage in long term beds?
Case:
Mr. J is a 40 year old severely schizophrenic who was referred to a psychiatric facility from jail. He was found to be markedly gravely disabled with delusions and inability to maintain his ADL's. Initially we could not find any of his

relatives or friends. After 63 days, we were able to contact his foster father who reported that he has not seen him in 15 years and denied any legal or financial responsibility for him. The patient failed pharmacological treatment including 6 antipsychotics and developed serious side effects. He was locked in an acute psychiatric unit for 6 months, although this unit is designed for 3-5 days stay, due to the unavailability of long term bed. The psychiatry team that managed the patient agreed that for most of the time, the unit was just a safe place for him to stay. Acute units are not designed for the management of long term patients as they lack the necessary long-term psychosocial and psychotherapeutic interventions. Interestingly, the cost for a 6 months hospital stay in the acute psychiatric unit was $150,000, which might be twice the cost of a bed in the long term unit.

Discussion:

If the current number of long term beds is reasonable and the alternative programs are compensating the shortage, this patient should have not been held in acute unit for 6 month. In a survey ran by the Treatment Advocacy center of 15 experts on psychiatric care regarding the minimum reasonable number of public psychiatric beds needed for patients with serious psychiatric disorders assuming the existence of good outpatient programs. Almost all 15 experts estimated a need of an average 50 public psychiatric bed per 100,000 people. According to this, 42 of the states have less than half the minimum reasonable number of beds. Only Mississippi, achieves the minimum standard. Other states like Nevada, Arkansas, Iowa, and Michigan have less than 20 percent of the minimum number of beds needed.

Conclusion:

Cutting psychiatric hospital beds might have saved the mental health system money in the short term but will eventually increase the overall cost by not treating mentally ill patients or inadequately treating them by shifting care to jails or other medical services like acute units and emergency rooms.

References:

1.Torrey EF, Entsminger K, Geller J, Stanley J, Jaffe D. The Shortage of Public Hospital Beds for Mentally Ill Persons: A Report of the Treatment Advocacy Center. March 2008

HOW CAN WE HELP WHEN NOTHING WORKS? - A CASE OF TREATMENT RESISTANT SCHIZOAFFECTIVE DISORDER: CASE REPORT AND TREATMENT REVIEW

Lead Author: Munjerina A. Munmun, M.D.
Co-Author(s): Celia Varghese, M.D., Mitali Patnaik, M.D.

SUMMARY:

INTRODUCTION: Schizoaffective disorder is a serious mental illness with lifetime prevalence of 0.3%, exhibits both the signs of Schizophrenia and mood symptoms. Being a life long illness it can affect multiple areas of daily living, school, work, social contact and relationships. Here we will present a treatment refractory case for a young female who almost killed herself.

CASE: 17 y o Caucasian female with history Schizoaffective disorder,

bipolar type by history who have failed multiple trail of medication including ECT. During the last 5 years, she had multiple hospitalizations and 4 serious suicide attempt secondary to psychosis and aggression. Family reported 3 separate occasions when she had seizure like activity though subsequent EEG was inconclusive. She would become nonresponsive approximately once a week for 20-30 minutes, isolates herself and during these episodes she also responds to internal stimuli. She was engaged in self-injurious behavior like hitting her head on the wall, although she never had any recollection of these episodes afterward. Initially she would stop eating for days with poor ADL's due to command AH, telling her not to eat. Patient became very violent and physically aggressive towards parents on many occasions. Sometimes she is extremely paranoid during psychotic phases when she avoids any eye contact and scared of walking around in her own house. She is polite, caring and attached to her parents between episodes, despite being in and out of the hospital she was able to have good grades in school. No known sexual / physical abuse or trauma. She had normal developmental milestone and attended regular school.

LABS/PAST TREATMENT: basic labs, CT (head and abdomen), MRI, EEG, Lyme titer, CSF analysis were all non -conclusive. Over the 5 years she has received multiple treatment regimen including Clozapine 900 mg with out any significant improvement of her symptom. She received > 50 ECT in last one year, following each ECT she was symptom free for

3-4 weeks. Neuropsychiatric evaluation was done to rule out conversion/ somatization disorder.
CURRENT TREATMENT: Lurasidone 40 mg, Mirtazepine 15 mg, Clonazepam 1mg, Benztropine 1 mg along with Psychotherapy.
DISCUSSION: The goal of this poster is to review the atypical presentation of this young female with treatment resistant schizoaffective disorder who had made 4 serious suicide attempts already. We also want to identify possible differentials as well as diagnosis, discuss treatment and review literature regarding prevalence of treatment resistant cases, epidemiology, relapse rate and recommended treatment options for Schizoaffective disorder.

RECURRENT RESPIRATORY PAPILLOMATOSIS AND ITS EFFECT ON DEVELOPMENT OF PSYCHIATRIC CO-MORBIDITIES-A REVIEW OF THE LITERATURE

Lead Author: Shazia Naqvi, M.D.
Co-Author(s): Mahreen Raza, M.D., Humza Haque, Grace Iparraguire, Najeeb U Hussain, M.D,

SUMMARY:

Objective:
Chronic medical conditions in children can often hinder their personal development. Studies have shown that somatic medical conditions are correlated with a high likelihood of emotional and behavioral problems. Also, the rate of ADHD in children with chronic health issues was twice as high as the normal population. The aim of this case study is to find a link between the patient's medical condition and possible development of behavioral problems in order to find effective therapy for the child's development.
Case Report:
A 7 years-old Hispanic patient contracted HPV from his mother during vaginal delivery. His mother first sought medical evaluation when he was 2.5 years old due to lack of speech. Results indicated respiratory problems and slight hearing loss that necessitated insertion of tubes. When he was 3 years-old, medical personnel found masses in his throat. The patient had 19 surgeries to remove throat obstructions since initial diagnosis through February 2014. The patient's mother denied behavioral problems during the patient's years in pre-school. The mother noted developmental difficulties, such as delayed reading, but the findings were not significant enough to require early intervention services. Persistence of this issue until the age of four was observed through the patient's difficulty with reading and speaking, and complemented with verbal and physical conflict with peers, preferred social isolation, and difficulty sustaining attention and controlling hyperactive impulses. At the age of five, the patient was classified for behavior and diagnosed with ADHD.
Conclusion:
The patient's chronic medical condition has appeared to affect his lifestyle via discontinuous education and primary focus on managing his medical condition. Current studies show the effectiveness in cognitive behavioral therapy in managing troubling behavior in children with a chronic medical condition. Secondary control coping (adapting to source of stress) has also shown effectiveness in children with chronic medical conditions. All of these methods will be considered for the patient's therapy on long-term basis.

NEAR FATAL OVERDOSE FROM ZOLPIDEM INDUCED COMPLEX SLEEP BEHAVIOR

Lead Author: Ifeoma Nwugbana, M.D.
Co-Author(s): Amina Z. Ali, M.D., Prathila Nair, M.D.

SUMMARY:

Zolpidem is a non-benzodiazepine of the imidazopyramidine class widely used in treating insomnia. It is popularly used because it has a short half life, is very effective and has few side effects. Some reports have been made of complex sleep behaviors following the use of zolpidem in a small number of patients. Complex sleep behaviors are complex activities that a person undertakes while in a sleep-like state and for which the individual has amnesia afterwards. These behaviors include sleep walking, sleep related eating disorder and sleep driving. In this case, we present a 42 year old female patient who took a near fatal overdose while under the influence of zolpidem. She required treatment in the intensive care unit for respiratory depression and acetaminophen toxicity. This patient's presentation is unique because she had no suicidal ideation prior and subsequent to the overdose. Self harm behavior

following the use of zolpidem, a medication that is widely believed to be safe, is underreported in the literature. We aim to highlight this potentially lethal side effect associated with its use. The importance of medical practitioners educating patients about side effects and monitoring for them will be discussed.

A CASE REPORT OF ANTI-NMDA ENCEPHALITIS AND REVIEW OF THE LITERATURE

Lead Author: Christopher O'Connell, M.D.
Co-Author(s): Garima Singh, M.D., Muaid Ithman, M.D.

SUMMARY:

INTRODUCTION: Anti-NMDA encephalitis is an autoimmune anti-body mediated attack on NMDA-type glutamate receptors, which leads to sudden behavioral change followed by pronounced neurologic deterioration. The classic presentation includes changes in behavior and psychosis, followed by seizures, autonomic instability, dyskinesias, and altered consciousness with catatonic features. The incidence is more common in young woman, up to 50% of whom have an ovarian teratoma. Anti-NMDA encephalitis has a complex presentation and remains a diagnostic challenge requiring high clinical suspicion. We present the case of a 20 year old woman, who presented to the hospital with seizures, paranoia and psychosis and was later found to have Anti-NMDA encephalitis.
CLINICAL CASE: Ms. X is a 20 year old woman, who was admitted to the Neurology service in March 2014 and was consulted to Psychiatry for evaluation of depression and psychosis. On evaluation, the patient was disorganized, confused and only limited information could be collected form her. Collateral information was gathered from her mother, which revealed the patient had been functioning fairly well until recently when she started having memory impairment, behavior changes, hallucinations, and decline in her activities of daily living, preceded by a 3-4 month history of seizures. The patient's mother described the patient as a "typical teenager," who was happy, healthy, and took care of herself, and who had no significant history of depression, mental illness, or memory impairment prior to 4-5 months before presentation. During her hospitalization, she underwent an extensive medical work-up, including EEG monitoring and several laboratory and imaging studies. She was agitated and combative towards staff and family members and had breakthrough seizures on 2-3 antiepileptic medications. Quetiapine was started and titrated to 100mg BID for mood stabilization and psychosis with little benefit. Work-up included a lumbar puncture, which was positive for Anti-NMDA antibodies. She received IVIg and steroids for 5 days. Ms. X's neurologic and psychiatric symptoms improved on immunotherapy and she was eventually stabilized and discharged to a rehabilitation facility after a 14 day hospitalization.
DISCUSSION: Anti-NMDA encephalitis is a challenging disease because of its complex presentation. Psychiatrists should have a high suspicion for the disease in any young woman presenting with abrupt seizures and behavioral changes. Treatment includes IVIg and steroids and evaluation and subsequent treatment for neoplasm. The understanding of the exact course and treatment of the disease continues to evolve and more research is needed.
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CAN'T IT BE BOTH? THE CHALLENGES OF DIAGNOSING AND TREATING PANDAS IN THE SETTING OF AN UNDERLYING CONVERSION DISORDER: A CASE REPORT

Lead Author: Christopher F. Ong, M.D.
Co-Author(s): Donevan Westerveld B.S., Jonathan Browning B.S., Almari Ginory D.O., Sarah M. Fayad, M.D.

SUMMARY:

INTRODUCTION: The term PANDAS (Pediatric autoimmune neuropsychiatric disorder associated with streptococcal infections) describes a clinical phenomenon in which an antecedent Group A streptococcal (GAS) infection subsequently leads to rapid onset emergence of obsessive compulsive and/or tic disorder symptoms. Prevailing theory states that an aberrant immune response to GAS antigens causes an autoimmune reaction

towards the basal ganglia, resulting in symptoms such as obsessions, compulsions, motor stereotypies, and movement disorders. Numerous treatments such as antibiotics, plasma exchange, intravenous immunoglobulin (IVIG), antidepressants, and antipsychotics have been discussed and researched to a limited extent.

CASE REPORT: We present the case of a 10-year-old male who presented with symptoms of abdominal pain, vomiting, diarrhea, and an unremitting guttural tic. This severe, low-pitched tic would occur incessantly at a rate of 15 grunts per minute even while the patient was eating or talking and would only cease when he went to sleep. He was originally diagnosed with viral gastroenteritis and initially responded well to a 7-day course of amoxicillin. However, following completion of antibiotic treatment, the epigastric pain and guttural tic resumed with an additional symptom of new onset motor immobility, specifically an inability to move any muscle below his chin. A medical work-up evaluating for causes of acute onset tics and motor paralysis such as Anti-NMDA Receptor Antibody Encephalitis, Acute Disseminated Encephalomyelitis, Acute Intermittent Porphyria, Thyroid Disease, Celiac Disease, Whipple's Disease, Lupus, and Guillain-BarrÃ© Syndrome came back negative. Based on the negative medical work-up, an abnormal anti-streptolysin titer of 282, as well as no personal or family history of a comorbid psychiatric disorder, the patient was given a provisional diagnosis of PANDAS. Trials of guanfacine, amoxicillin, risperidone, and IVIG were initiated, however the patient experienced no improvement until he was started on clonazepam. As the patient's tics improved (down to 12 grunts per minute) and as he slowly gained limited range of motion in his truncal and lower extremity muscle groups, the patient's mother noted an incident where he unexpectedly moved his arms towards his chest. When his mother vocalized her excitement at his sudden improvement, the patient immediately dropped his arms and lost motor strength throughout all muscle groups once again. Based on that incident, a diagnosis of Conversion Disorder was made in addition to his current diagnosis of PANDAS.
CONCLUSION: As we continue to better define criteria for more accurate diagnoses of and treatments for PANDAS, one should always be cognizant of comorbid psychiatric conditions that can blur the clinical presentation and make treatment of this rare phenomenon even more challenging, especially given the unique challenges of interviewing a pediatric patient.

A RARE BUT DANGEROUS SIDE EFFECT TO A COMMON MOOD STABILIZER

Lead Author: Joseph Otonichar, D.O., M.S.
Co-Author(s): Michael Heck, D.O., Nassima Ait-Daoud, M.D.

SUMMARY:

BACKGROUND:
Anemia and leukopenia are well-known side effects of carbamazepine, but drug-induced immune thrombocytopenia (DIT) is much rarer. The frequency of carbamazepine induced thrombocytopenia is not well defined and a literature review reveals few published cases, with only 12 cases known as of 1990. DIT was first recognized about 150 years ago with exposure to quinine. Caused by drug-induced antibodies, it differs mechanistically from idiopathic thrombocytopenia. The hallmark of DIT is antibody-to-platelet binding only in the presence of the sensitizing drug; therefore, treatment is discontinuation of the offending agent. During initial exposure, it usually requires 5 to 7 days exposure to produce sensitization.
CASE:
A 42 year old male with a history of bipolar disorder type I, alcohol abuse, generalized anxiety disorder, hypertension, type 2 DM, and dyslipidemia pages the on-call psychiatry resident complaining of a rash that started earlier in the morning. He describes the rash as "red dots the size of a pin" that began on his feet and have since spread to his chest and arms. He denies pruritus, bruising, or pain. The patient reports that he has been taking quetiapine long term and that about two weeks ago his psychiatrist changed his mood stabilizer from divalproex sodium to carbamazepine 200mg BID. He reports that he took his carbamazepine initially for about one week and-after running out of the medication for several days-resumed his carbamazepine just two days ago.
The on-call psychiatry resident advised the patient to present to the emergency department where he was found to have undetectable platelet levels in his serum (<10,000/mm3) with CBC and BMP otherwise within normal limits. Three weeks earlier, his platelet count was 370,000/mm3. In the ED, the patient

complained of headache and bleeding gums. He was found to have a petechial rash over his feet, lower legs, distal arms, chest and upper back. A head CT was obtained and revealed no intracranial bleed. He was admitted to the general medical service for three days and seen by the hematology consult service. His carbamazepine was discontinued and he received four units of platelets. He was treated with a three day course of prednisone before being discharged home with a platelet count of 33,000/mm3. He was diagnosed with carbamazepine-induced thrombocytopenia and his platelet level normalized two weeks after carbamazepine discontinuation.
DISCUSSION:
Herein is a case of a patient who was started on a carbamazepine and subsequently experienced an undetectable platelet count. This life threatening side effect could have been missed as the patient was in no distress. This case highlights the importance of educating patients about rare adverse events so they can be recognized and reported promptly. On the Naranjo Algorithm probability scale, it is probable (Level II evidence) that this patient's thrombocytopenia was induced by carbamazepine.

A CASE OF ULTRARAPID NEUROCOGNITIVE DECLINE

Lead Author: Nishant Parikh, M.D.

SUMMARY:

Patient J was a 77 year old woman who ultimately died from a rapidly progressive dementia (RPD). Â HerÂ complicated hospital course is a microcosm of the ~5000 cases/year of RPD, their associated prolonged hospital courses and often costly diagnostic processes. Â Patient J had a family history of Alzheimer's dementia, a complicated past medical history including type II bipolar disorder, insulin-dependent diabetes, hypothyroidism, breast and lung cancers in remission but no previous history of neurocognitive disorder. Â She had an abrupt 3-week-long rapidly worsening emotional lability, pressured incoherent speech, poor memory, paranoia and hallucinations with the most precipitous decline in the week prior to her initial psychiatric admission. Folstein MMSE had decreased from 28 (recorded 2 months prior)Â to 14. Initially, her symptoms suggested a mixed manic episode but her exam was also significant for cogwheel rigidity, waxing/waning consciousness and MRI findings of temporal lobe atrophy and microhemorrhages. Her hospital course was complicated by toe cellulitis and fluctuating blood glucose. After discharge to a SNF with a diagnosis of delirium from diabetic foot ulcer and dementia NOS, she was admitted 2 months later for further worsening of mental status and was initially admitted to general medicine, then psychiatry, transferred back to medicine due to concern for sepsis, then transferred to neurology for a RPD workup. A comprehensive workup included negative HIV, hepatitis panel, ANA, ESR, CRP, ENA, vitamin B12, thiamine, TSH, folate, RPR, TPO antibody, CSF paraneoplastic panel, 14-3-3 and NMDA receptor ab. Repeat MRI showed mid cerebral volume loss and severe white matter disease as well as subcortical microhemorrhages and EEG showed moderate encephalopathy of non-specific etiology. Neurosurgery declined brain biopsy, given risks. She was ultimately given a trial of high dose steroids to empirically treat amyloid angiopathy, which resulted in little improvement. Patient J was transferred to hospice care where she died, within 5 months of her first symptoms. Autopsy studies confirmed Alzheimer's disease and cerebral amyloid angiopathy.
Important in the evaluation of RPDs is to rule out infectious, endocrine, immunologic, neurologic, neoplastic and toxic-metabolic causes, as these can be potentially treatable. Hence, a systematic diagnostic approach is prudent in establishing the diagnosis. Should treatable causes of RPD be ruled out, the prognosis becomes poor and prolonging hospitalization becomes futile and possibly unethical. Patient J's case poses important practical and ethical questions that can serve to guide expeditious future workups and offer empiric treatments that can not only provide a less distressing experience to the patient and their families, but could also prove to be less burdensome to the healthcare system.

THERAPEUTIC DOSES OF LITHIUM VARY BY MOOD STATE

Lead Author: Mitesh K. Patel, M.D.
Co-Author(s): Cuneyt Tegin, M.D.
Rifaat S. El-Mallakh, M.D.

SUMMARY:

Background : Bipolar disorder is a mental disorder characterized by elevated mood and periods of depression. Traditionally, bipolar

disorder is treated with Lithium titrated to a level to minimize side effects. However, the side effects of lithium vary by mood state. Patients in an acute manic or hypomanic episode often require more Lithium than when euthymic to experience side effects. As such, Lithium doses should be increased at the first signs of mania or hypomania to ensure patient remains as close as possible to euthymic mood state.
Case Description: A 45 year-old woman was hospitalized for acute mania. She had claimed to be adherent to her regiment, and her lithium level was 0.7 mEq/L on admission. She was stabilized on lithium 1200mg/day (lithium level 1.0 mEq/L), and aripiprazole 30mg/day. She recovered fully and returned to her job within 2 weeks of hospital discharge. On follow-up one month later, she complained of tremor that interfered with function, and both the lithium and aripiprazole were reduced to 900mg/day and 15mg/day. She remained stable with minimal symptoms and tolerable residual tremor for 14 months. However, she again presented with manic symptoms, while adherent to her regiment (lithium level again 0.7 mEq/L). Both medications were increased (to 1200mg/day and 30mg/day, respectively), and she improved without requiring hospitalization. Six weeks later she again complained of disabling tremor.
Discussion: This case demonstrates that though Lithium is titrated to side effects when patient is euthymic, an increased dose is required to maintain patient in euthymia when the first signs of mania are present. Side effects of Lithium vary by mood state, where manic patients experience less side effects. Maintaining patients on increased dose of Lithium during initial phases of a manic episode can assist in preventing hospitalization of acutely manic patients. Stable doses of Lithium are not sufficient to prevent recurrence of mania.

LURASIDONE IN PATIENTS WITH AUTISM SPECTRUM DISORDER

Lead Author: Aadhar Patil, M.D.
Co-Author(s): Reynaldo L. Pella, Lee S. Cohen, M.D.

SUMMARY:

This is the first clinical report of the use of Lurasidone, a secondÂ generation orally administered atypical antipsychotic compound in patients with Autism Spectrum Disorder. Risperidone and Aripiprazole have been studied in developmentally disabled and autistic patients and are FDA approved for the treatment of irritability associated with autism, but studies of newer agents are limited. We studied seven patients with Autism Spectrum Disorder from our developmental disability clinic, all of whom have concomitant intellectual disability and severe behavioral issues characterized by aggression, impulsivity, and selfÂ injurious behavior. One case was coÂ-morbid with cerebral palsy and one case was co-morbid with seizure disorder. The sample included 1 female and 6 male cases. Mean patient age of the sample was 20 (range 11 to 27 years old). Mean length of time on Lurasidone was 9.7 months (range 2 to 34 months). Mean titrated total daily dose was 29mg (range 10 to 60mg). Cases were retrospectively chart Âreviewed for Clinical Global Impression Severity Scale (CGIÂS) before initiating Lurasidone and Clinical Global Impression Improvement Scale (CGIÂI) and Clinical Global Impression Efficacy Scale (CGIÂ-E) after initiating Lurasidone. Mean CGIÂS of the sample was 5.4 (range 5 to 6), which correlates with severe illness, and mean CGIÂI of the sample was 2.9 (range 2 to 4), which correlates with minimal improvement. Two patients were much improved (2), four patients were minimally improved (3), and one patient showed no change (4) after clinical review by a board certified psychiatrist. A similar pattern arose using the CGIÂE. Mean CGIÂE of the sample was 2.4 (range 1 to 4) which correlates with minimal to moderate therapeutic efficacy. One patient showed no improvement (1), three patients showed minimal efficacy of the drug (2), two patients showed moderate efficacy (3), and one patient also showed marked efficacy (4). Overall, 86% of patients treated with Lurasidone showed improvement in clinical functioning. Lurasidone may function as an alternative compound for improvement in impulsivity, aggression, and self-Âinjurious behavior in the treatment of patients with Autism Spectrum Disorder who have failed currently approved compounds.

DELUSIONAL PARASITOSIS IN THE SETTING OF BILATERAL CEREBROVASCULAR ACCIDENT AND CERVICAL MASS

Lead Author: Bryan Pelka, M.D.
Co-Author(s): Enoch Barrios M.D., Meena Vythilingam M.D., Harold Wain, PhD

SUMMARY:
Background: Delusional Parasitosis is a rare disorder in which patients display somatic delusions of infestation with parasites. Hallucinatory components can also be present such as visualization of the parasites or the sensation of parasites on or underneath the skin. Delusional Parasitosis can be a primary disorder or secondary to another psychiatric or medical condition. We present the assessment and management of a patient with Delusional Parasitosis in the setting of bilateral CVAs and a new cervical mass.

Case: The patient is a 70 year old female who emigrated from the Philippines in the 1960s. She had minimal contact with medical providers prior to presenting with two days of acute generalized weakness. She displayed minimal range of motion and strength in all extremities with some preservation of right upper extremity motion. The patient also described the sensation of insects crawling underneath her skin with associated burning. She reported these symptoms started in 1995 after a cortisone injection for Carpal Tunnel Syndrome and felt as though the insects were 'eating me up'. She attributed her clinical presentation and the findings on imaging entirely to these insects. Previously, she had seen small green insects fall from her hair while grooming but not for the last year. She reported that the insects were now invisible. The patient also had innumerable hypopigmented macules and patches noted on all extremities in addition to several newer 2-3cm lesions on the forehead. These lesions displayed dried blood and surrounding hypopigmentation. The patient attributed these lesions to the insects. Imaging displayed left occipital and right cerebellar subacute CVAs as well as a C1-C2 mass. The patient's family later indicated that her delusions have been apparent for five years, shortly after the death of the patient's mother.
Discussion: This patient was challenging due to a lack of historical or collateral information. It was unclear how long the patient's delusions had been present or their degree of persistence. Evidence of past excoriations in conjunction with newer lesions pointed to some chronicity. Vascular involvement exacerbating the patient's delusions in the setting of compromised posterior cerebral blood flow for an unknown duration should be considered. Other etiologies to consider include nutritional deficits, infection, malignancy, liver dysfunction, electrolyte abnormalities, hypothyroidism, and/or psychodynamic variables. Due to the patient's CVAs, Neurology recommended maintaining blood pressure above a certain threshold to ensure cerebral blood flow. As treatment with antipsychotics could cause an unsafe drop in blood pressure in this medically complicated patient, the approach to addressing the patient's delusions and preventing further self-harm had to initially be conservative with non-pharmacological interventions. The clinical approach also had to be reconsidered dependent on the patient's outcome.

A CASE OF COMPLICATED POSTERIOR REVERSIBLE ENCEPHELOPATHY SYNDROME (PRES) PRESENTING WITH VISUAL AND TACTILE HALLUCINATIONS

Lead Author: Varma Penumetcha, M.D.
Co-Author(s): Kamalika Roy, M.D., Sonia Fernando, M.D.

SUMMARY:
Background:
Posterior Reversible Encephalopathy Syndrome is a heterogeneous condition with various clinical and radiological presentations. Clinically it presents as acute onset of headaches, seizures, confusion and visual disturbances. Commonly associated in patients with renal failure with hypertension,
treatment with immunosuppressive and cytotoxic drugs, eclampsia, it usually presents as a reversible condition, however they have been cases reported about irreversible neurological damage, especially blindness following PRES. Here we would like to present a case of PRES with near total visual loss presenting with visual and tactile hallucination an year after the episode.
Case:
A 56 year old African American female with a significant past medical history of end stage renal disease, hypertension, coronary artery disease, diabetes mellitus and depression presented to the emergency department with acute onset of shortness of breath. She was diagnosed of having frank pulmonary edema with a blood pressure of 230/130mmhg and an oxygen saturation of 50mmhg. On

Day 1, CT scan of the head did not reveal acute intracranial hemorrhage. On Day 2 the patient reported of inability to see, unable to move her legs and arms and memory problems. MRI of the brain revealed restricted water diffusion involving bilateral occipital lobes with increased signal intensity on the same regions on FLAIR and T2-weighted images. A diagnosis of PRES was considered. Her motor function returned to normal within a week, however her vision was limited to perceiving light and able to see shapes. Her ophthalmological examination came back normal, revealing that she has cortical blindness as a complication of PRES. A year later the patient presented to the emergency department with a complain of seeing "orb like fuzzy creatures and curtains falling in front of her eye", with tactile sensations of these creatures crawling underneath her toes. She reported to be very distressed by these hallucinations. MRI of the brain revealed cortical thinning without any signs of acute infarct, considered as late sequelae to PRES.

Discussion:

The hallucinations that this patient had were similar to Charles-Bonnet type of hallucinations seen in patients with partial visual loss, however differ by its association with tactile hallucinations and lack of insight. Although her vision did not return to normal, she responded will to risperidone 3mg with a resolution of her visual hallucinations and reduced distress related to her tactile hallucinations.

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ONLINE ORGAN DONATIONS: ALTRUISM OR SELF-SAVING

Lead Author: Ngac N. Phan, M.D.
Co-Author(s): Philip M. Yam, M.D., Harold Wain, Ph.D.

SUMMARY:

INTRODUCTION: Organ donations have saved countless lives. Finding appropriate matches at times has been difficult. Typically family member have been primary donors. Recently organ donations that occur through online meetings are becoming more popular. While this is an obvious benefit for recipients, there may be a subset of the population that tends to be "givers." For people who would give their organs to those in need, having greater access to potential recipients expedites the process. The increase of donors from casual introduction online may create issues in evaluating the donors motivation or capacity. A part of psychiatric practice is evaluating for capacity as well as psychological reasons for elective procedures. While many patients who donate their organs do so in an act of altruism, there may be other factors influencing that decision. Studies show differences in brain structures between those who donate their organs. A closer look at donors, particularly those who donate online, may reveal other influential developmental and social factors that could contribute to their decision to make such a sacrifice. The following case illustrates that beyond altruism, there exists an element of saving oneself as a potential factor to motivate oneself to donate a part of one's body for someone in need who they had never met. CASE: This is a thirty-nine year old woman who was referred to a psychological evaluation for capacity in making a decision to proceed with an elective kidney transplant. The patient decided to donate her kidney after learning about the identity of her recipient through Facebook. A thorough psychological evaluation revealed that she is presently psychologically sound and has generally altruistic intentions of donating her kidney. Other reasons that may have affected her decision included her desire to "pay it forward" and the fact she had close friend who was also an organ donor with whom she identified with. Developmentally, this patient also had interesting motivational factor. She had a traumatic childhood and was later placed in the foster care system. Her life rescuer was her new foster mother, who allowed her to become independent and live a more comfortable life. She now wants to rescue others. DISCUSSION: Organ donations through online means make it accessible for patients to donate their organs to strangers. A routine psychological evaluation is recommended prior to elective procedures, and notably those involving transplants given to strangers. People who donate their organs display extraordinary altruism. However, there are psychosocial factors of interest that may contribute. Donating organs in this setting can be seen as self-saving to help one to resolve past trauma and conflict. It may be useful to further study the developmental and genetic

players that may lead one to make such a decision.

A THIN LINE: ANOREXIA NERVOSA AFTER BARIATRIC SURGERY AND THE NEED FOR A NEW APPROACH

Lead Author: Andrew Pierce, M.D.
Co-Author(s): Laura Rodriguez-Roman, M.D., Emma Lundgrin, B.S.N., Amelia Davis, M.D., Almari Ginory D.O., Sarah M. Fayad, M.D.

SUMMARY:

Obesity is a growing health concern in America. Bariatric surgery has emerged as an effective treatment resulting in sustained weight and comorbidity reduction(1). Its use has become more frequent with over 220,000 procedures completed in 2009(2). Important psychiatric implications materialized concurrently. A cohort of manuscripts has identified eating disorders including Anorexia Nervosa, Bulimia and Eating Disorder NOS in such patients(3,4).
Case Report
Ms. S is a 50-year-old female with a history of MDD, Unspecified Anxiety Disorder and Sedative Use Disorder who presented voluntarily after treatment for malnutrition from a tertiary care facility to an eating disorder recovery center for the treatment of Anorexia Nervosa. She sought treatment from a bariatric surgeon 13 months prior for morbid obesity with a BMI of 46.8 kg/m2 and medical comorbidities. Management included psychiatric assessment, dietary consultation and exercise initiative preceding Roux-en-Y gastric bypass surgery.
At admission Ms. S had a BMI of 15.3 kg/m2. She was guarded concerning dietary restriction and behavior interfering with weight gain. Collateral sources indicated the patient restricted her intake to small portions of fruit and water consistent with the post-operative diet. She had disturbed body image but denied bingeing, purging or excessive exercise. Anorexia Nervosa, restricting type, severe in addition to her existing psychiatric comorbidities was diagnosed. Treatment required an intensive multidisciplinary approach. Malnutrition and medical conditions were treated with enteral nutrition, laboratory monitoring and nursing care. Psychiatric treatment consisted of medication management and robust therapy services. Cognition, mood, insight, body image, nutrition, metabolic derangements and BMI improved to 16.76 kg/m2 and the patient was discharged.
Discussion
Ms. S exemplifies an expanding demographic of mental illness(3). Patients undergoing bariatric surgery need a longitudinally sustained multidisciplinary approach to care. Current standards require psychiatric evaluation prior to bariatric surgery, but continued monitoring is rarely instituted. We propose continuous mental health provider involvement in both pre- and post-operative stages. Concurrent increase in multidisciplinary collaboration, comorbidity management, population specific education, research and awareness may provide the model of care necessary to identify and treat eating disorders in this population.

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A CASE SERIES STUDY OF MEDICATION BURDEN IN DELIRIUM

Lead Author: Krista L. Pinard, M.D.
Co-Author(s): Krista Pinard, M.D., Joseph Thornton, M.D., Uma Suryadevara M.D., Colleen Campbell, R.N., M.S.N., A.R.N.P., Stephen Welch M.D., Loren Solberg, M.D.

SUMMARY:

The authors describe a delirium response protocol in 3 patients compared to 3 patients with treatment as usual. In 2012 the Malcolm Randall VA Medical Center initiated a project called "Think Delirium." The goal of the project is to improve the outcomes for patients who develop or who are at risk for developing delirium.
The key tool for this project is the Delirium Response Card. This pocket card outlines a process for recognition of delirium using the CAM method: first wave interventions emphasize nonpharmacological interventions and screening labs, then conservative medication management with specific instructions to avoid anticholinergic and

benzodiazepine medications. Also included on this card are instructions for administering tools to assess delirum, namely the Blessed Memory Orientation Concentration test.
The project was piloted on one of the 6 medical surgical units in the hospital after training of the nurse educator and the staff nurses on the floor. Orientation to the project, including to the Delirium Response Card, was also provided to the medical attendings and medical house staff via monthly orientation sessions. The psychiatry consultation liaison team was the first point of contact for patients suspected to have delirium. Additionally, the geriatric medicine team made weekly rounds on patients with delirium indentified by the psychiatry consult liaison team.
This report briefly describes 3 patients treated before implementation of the protocol and 3 patients treated after implementation of the protocol. As there were no standard measures of delirium or diagnostic criteria applied prior to the protocol, we elected to use medication profiles as an independent variable for outcomes.
Two of the co-authors of this report have developed a methodology called the Florida Medication Burden Assessment Rating System. In this system, medications are rated for severity along selected domains, including sedation, anticholinergic effect, confusion, and medical risk. This table has been developed for 260 medications. For each patient within the VA Hospital their medication profile is easily found in the CPRS record system. We selected 3 charts under the care of the team prior to implementation of the protocol and 3 charts under the care of the team after implementation of the protocol. We then compared the medication burden on the first day of assessment to the last day of assessment for all 6 patients
Our data on this case series shows a trend for increase in total medication burden score from initial to secondary review. However 3 of the 4 patients prescribed anticholinergic medications showed a decrease in anticholinergic ratings during treatment.
The authors plan to develop a delirium registry and incorporate outcome measures such as the BOMC, as well as medication burden, as part of the standard care to develop an infrastructure for interventional studies to reduce the incidence and severity of delirium

AN ETHICAL DILEMMA IN A DEPRESSED PATIENT'S REFUSAL OF TREATMENT

Lead Author: Caridad Ponce Martinez, M.D.
Co-Author(s): Derek S. Mongold, M.D., Donna T. Chen, M.D., M.P.H.

SUMMARY:

Background: Psychiatrists are frequently called upon to assess patients' capacity to make their own medical decisions. In the absence of psychosis, delirium, or severe dementia, the determination of capacity can be challenging. We present a case of a severely malnourished and depressed individual refusing treatment.
Case Report: A 41-year-old male with a history of recurrent depression and anorexia nervosa, presented with failure to thrive and severe, chronic lower extremity wounds. He had been bed-ridden for about 1 year and was transported to the hospital after falling out of bed. At the time of admission, he had a calculated BMI of 11.2. It appeared that his current weight and restriction of food intake stemmed from suicidal ideation, rather than active anorexia nervosa. He was voluntarily starving himself to death, because his religious beliefs kept him from more actively committing suicide. He was admitted to the Medicine service and Psychiatry was consulted for management of his depression.
Per Psychiatry's evaluation, the patient lacked capacity to make medical decisions, given that his depression impaired his ability to appreciate how the proposed treatment (adequate nourishment and ECT) could be of benefit to him. His primary treatment team strongly disagreed with this assessment. Although they agreed that the patient lacked a terminal illness and could likely recover significant function with adequate treatment, the removal of his decision-making capacity raised the possibility of involuntary treatment, including involuntary feeding, which they thought was unethical and staff objected to participating. An Ethics consult was placed to assist with the treatment plan, and it was agreed that a third physician would conduct an independent evaluation of patient's capacity. This psychiatrist agreed that, due to patient's severe depression, he lacked capacity, and a surrogate decision-maker should be appointed.
Patient's parents became his decision makers and, per his request, they agreed not to pursue aggressive treatment. During his hospitalization,

patient's total daily caloric intake remained <500. He was discharged to a skilled nursing facility on hospice care, and died 5 months later.
Discussion: Although voluntarily deciding to stop oral intake could be considered a socially and ethically acceptable way to die, Psychiatry felt this was not the case for this patient, given lack of decision making capacity. Depression does not always imply lack of capacity. Rather, depression can cause hopelessness to the point that a patient loses appreciation of the possibility for recovery. It could therefore be argued that an involuntary treatment trial was indicated to restore this patient's capacity.
Conclusions: This case raises interesting questions in the areas of moral distress, the evaluation of medical decision-making capacity, and the desire to die in the absence of terminal illness, other than severe depression.

3/11 AND 9/11: A MULTI-FACETED INVESTIGATION OF A SURVIVOR EXCHANGE PROGRAM

Lead Author: Phoebe Prioleau, M.A., M.P.H.
Co-Author(s): David Anderson, B.A., Robert Yanagisawa, M.D., Craig Katz, M.D.

SUMMARY:

The Great East Japan Earthquake of March 2011 and the ensuing tsunami and nuclear accident created unique and unprecedented challenges for residents of the Tohoku area in Northern Japan. However, the general issues of coping with a large-scale disaster and its aftermath are universal. In 2012, members of the 9/11 Tribute Center and Family Association traveled to Japan on a mission of community outreach together with representatives from a New York-area Rotary Club. They visited 3/11 survivors to share their own experiences of tragedy and recovery and met with local Rotarians and government officials. Two subsequent trips took place in 2013 and 2014.
The objective of this study was to assess the impact of these visits by administering a survey to Japanese Rotarians that included demographic information, ratings of the trips' significance, and the Posttraumatic Growth Inventory. Surveys were collected both from Rotarians who had direct contact with the trip members and from Rotarians belonging to other local clubs that did not meet with the trip members. 90% of those who responded reported involvement in the 3/11 relief effort, and 43.6% were still involved as of August 2014. Rotarians whose clubs were visited by the 9/11 trip members were statistically more likely than those who were not visited to rate the trips' significance higher on every measure: to themselves ($p=0.002$), to their clubs ($p<0.001$), to their cities ($p=0.002$), and in comparison to other post-3/11 efforts ($p=0.01$). They also agreed more strongly that the trips were sustainable ($p=0.003$) and strengthened bonds between survivors of different disasters ($p=0.03$).
To the best of our knowledge, this study is the first of its kind to explore exchanges between survivors of different disasters. It draws implications for ongoing post-3/11 outreach efforts in Japan and for post-disaster outreach in general, and fills a void in the disaster mental health literature.

MENS ET MANUS: WITZELSUCHT AND PRIMITIVE REFLEXES

Lead Author: Kimia Pourrezaei, D.O.
Co-Author(s): Carolina Retamero, M.D.

SUMMARY:

Background: Witzelsucht was first described by A.A. Brill in a 1929 volume of The International Journal of Psychoanalysis. The term is derived from the German witzeln (to make jokes) and sucht (addiction). Witzelsucht is characterized by a compulsion to tell puns, uncouth jokes, and/or irrelevant stories at inappropriate times. Once considered a rare neuropsychiatric syndrome many neurologists suggest it may be pervasive in diseases affecting the frontal lobe, particularly the right hemisphere. These patients may initially present to psychiatrists in a state indistinguishable from acute mania. In these circumstances, it behooves the psychiatrist to test for the presence of primitive reflexes, collectively referred to as frontal release signs.
Methods: A comprehensive chart review was completed and a PubMed search was conducted using the terms Witzelsucht, Primitive Reflexes, Frontal Lobe Disease. Case: An 80-year-old retired African American female, with no significant psychiatric or medical history, presented to the neurology clinic, accompanied by her husband, for evaluation of memory deficits and change in personality extent over one year. Her presence was commanding, albeit charming. She dominated the conversation with her jocular demeanor and gift for storytelling, liberated from fear and self-

criticism. On examination the patient could not recall any of three objects on two separate occasions, despite prompting. She had brisk reflexes and extinction to tactile double simultaneous stimulation in the left upper extremities. The most pertinent finding was the presence of several frontal release signs including a prominent snout response, left unilateral palmomental response, and glabellar response. Subsequent MRI results confirmed a diagnosis of Frontotemporal Dementia.
Discussion: Witzelsucht has been associated with a variety of conditions affecting the frontal lobes. Clinical presentation is consistent with compulsive jocularity, disinhibition, and a demeanor suggestive of mania. Eliciting the presence of primitive reflexes is a simple, cost-effective technique that provides valuable information about the etiology of psychiatric symptoms and the need to obtain neuroimaging. Additionally, frontal release signs may be valuable in detecting early pre-dementia cognitive decline. In conclusion, eliciting primitive reflexes as a routine part of psychiatric evaluation may be an invaluable predictive and diagnostic tool. If properly diagnosed, Witzelsucht may respond to SSRIs and other psychotropic medications.
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SERIAL KETAMINE INFUSIONS FOR TREATMENT-RESISTANT BIPOLAR DEPRESSION: A CASE REPORT

Lead Author: Jason J. Quinn, B.S., M.D.
Co-Author(s): Mark Sinyor, M.D., Justin Weissglas, M.D.

SUMMARY:

Introduction: Ketamine has recently been identified as having rapid antidepressant action after a single infusion in treatment-resistant bipolar depression (BD). Here we present a case that illustrates ketamine's potential role, not only in rapidly alleviating symptoms of depression in BD but also in addressing several pragmatic issues for psychiatric inpatients: 1) A desire to avoid ECT because of stigma and its potentially unfavourable side effect profile, 2) The need to find treatments that rapidly help patients engage in psychotherapy and 3) The desire to minimize length of hospitalization.
Case Description: "Ms. K" is a 44 year old woman with bipolar disorder type I and obsessive compulsive disorder. She had several previous outpatient trials of SSRIs and SNRIs, as well as risperidone, which were not tolerated. There was no history of suicide attempts.
Ms. K was admitted in 2013 to an acute-care teaching hospital in Canada with a one week history of severe depression, featuring suicidal ideation and significant guilty cognitions. She was unable to say more than a few words to the treating team, get out of bed to attend to routine self-care and refused to see her family. She was found incapable to consent to treatment and a substitute decision maker (SDM) was appointed. Ms. K. did not respond to trials of lithium, carbamazepine, aripiprazole, and bupropion XR. The combination of valproic acid 500mg BID, quetiapine 1200mg qHS, clonazepam 0.5mg BID improved her sleep and anxiety, but she remained severely depressed. ECT and rTMS were offered by the treating team but refused by the SDM due to reasons of stigma and possible side effects. Ultimately, the decision was made to place her on the wait-list for a long-term care placement due to lack of improvement and system constraints at the acute care hospital.
Two months into her admission, the hospital began offering ketamine to treatment-refractory patients. The SDM consented to an off-label trial of ketamine 0.5mg/kg IV delivered over 40 minutes, twice per week for 6 sessions over 3 weeks. There were no other changes made to her medications. Ms. K. experienced no side effects beyond drowsiness during the infusions. Her MADRS score decreased from 34 at baseline to 13 after the initial infusion. She was then able to engage in CBT, which had failed previously. By discharge, 9 days after the final ketamine infusion, Ms. K. demonstrated full remission of symptoms including a renewed desire to engage with her family.
Implications: This case highlights both the dramatic improvement that treatment-resistant depressed patients with BD can experience post-ketamine infusion(s), but also that this novel approach may have other implications related to the acceptability of treatment to

patients and their families, the need to find approaches that rapidly improve capacity to engage in psychotherapy and the desire to expedite return to function and avoid long-term hospitalization.

VITAMIN C-AND ZINC-RESPONSIVE NEUROPSYCHIATRIC SCURVY: A CASE REPORT AND REVIEW

Lead Author: Martha J. Quiroga, M.D.
Co-Author(s): Thomas M. Brown, M.D., David W. Carroll, D.N.P.

SUMMARY:

Objective:
1. Review the clinical features of neuropsychiatric scurvy.
2. Describe the role of vitamin C and zinc in the pathophysiology and treatment of neuropsychiatric scurvy and related extrapyramidal symptoms (EPS).
Background:
The recent discovery of vitamin C-responsive EPS has expanded the clinical presentation of scurvy to one that may occasionally be neuropsychiatric. Because vitamin C and zinc can have similar systemic presentations, and there is overlapping activity of these micronutrients in the regulation of the neurotransmitters dopamine, glutamate and GABA, the authors routinely treat hypovitaminosis C with an intravenous combination of vitamin C and zinc. In this case, deficiency of zinc may have also contributed the development of a movement disorder. The potential role of zinc in the pathophysiology of neuropsychiatric scurvy and related EPS is highlighted, and the impact of treating these micronutrient deficiencies on psychiatric presentation is discussed.
Case Summary:
A 66-year old man with a psychiatric history of bipolar disorder, admitted for the management of a pleural effusion, was found to exhibit Parkinsonism, neurocognitive deficits, psychomotor slowing and affective disturbance. Lab results showed low serum vitamin C and zinc levels. Intravenous replacement of these micronutrients led to resolution of the movement disorder in less than 24 hours, as well as an alteration in psychomotor activity and mood.
Conclusions:
Patients with mental illness are at greater risk of malnutrition due to poor diet, tendency to smoke and medical co-morbidities. Given the intimate role of the micronutrients vitamin C and zinc in the normal functioning of the basal ganglia, and their similar presentations in deficiency states, the authors are enfolding zinc deficiency as a risk factor for neuropsychiatric scurvy. Accordingly, further opportunities are anticipated to explore the the potential nature of an isolated zinc deficiency on basal ganglia function, the central relationship of vitamin C and zinc, as well as the impact of treating these deficiency states.

PROGNOSIS IN CHILDHOOD ONSET SCHIZOPHRENIA: A CLINICAL CASE AND LITERATURE REVIEW

Lead Author: Zelma Rahim, M.D.
Co-Author(s): Sara Brewer, M.D.

SUMMARY:

The clinical case pertains to a rare psychiatric illness, childhood onset schizophrenia (COS). An 18 year-old female, diagnosed with COS at age 11, on clozapine since age 13, is seen in the outpatient clinic since the winter of 2009. The patient's care is transferred to a resident psychiatrist in the fall of 2013 at the same time that the patient's mother seeks legal guardianship. The patient has been enrolled in special education since childhood. She has been unable to live independently, without her mother's support in all aspects; education, health care, finances, activities of daily living. Simultaneously, the patient herself is at a stage where she feels the need to exert her own independence. During clinic visits, the patient's questions regarding her own identity become apparent, as the patient often queries the resident psychiatrist about similarities in ethnicity and appearance with the patient. The therapeutic relationship between the resident psychiatrist and patient deepens over time. A dialectic emerges between the seeking of legal guardianship and strivings for independence during subsequent clinic visits.
Hence, the following clinical question arises from the case; what are the expected psychosocial and psychopathological outcomes of such rare COS cases in young adulthood based on the available psychiatric literature?
The authors review the literature with respect to nine follow-up studies from 1994 to year end 2013, focusing on psychosocial & psychopathological outcomes of COS cases. Studies reviewed include early onset

schizophrenia cases (onset less than 18) as well as COS cases. Methods varied with respect to prospective versus retrospective assessment, the use of diagnostic instruments, interview structure at initial versus follow up assessments, as well as schizophrenia symptoms scales implemented. Psychopathological outcomes of poor global functioning, several hospitalizations/treatment, treatment with mainly antipsychotic medications and continued diagnostic stability of COS into young adulthood were evident. Psychosocial outcomes of limited education and employment, living situations where there is dependency on parents or institutions, and limited social relationships at follow-up were also evident. Predictors of outcomes included family history of mental illness, including schizophrenia, premorbid symptomatology particularly of social withdrawal and internalizing symptoms, as well as hospitalizations during the early onset of illness. Finally, comparisons are drawn between the psychopathological, psychosocial, and predictors of outcome of the clinical case versus COS cases illustrated in the literature.
COS appears to have a poor prognosis and a high degree of global impairment. The follow-up studies reveal that COS is an unremitting illness, with continuity from childhood into young adulthood. Hence early aggressive treatment, special education for patients and support for families are of utmost importance.

DBS INDUCED MANIA IN A PATIENT WITH HISTORY OF TREATMENT RESISTANT OCD

Lead Author: Rumana Rahmani, M.D.
Co-Author(s): Jay Littlefield, MSIV

SUMMARY:

A 45 year old Caucasian male, divorced, self-employed, with 2 daughters and lives by himself. Patient was brought in to our facility by the police department for agitated and aggressive behavior. The patient has a history of obsessive compulsive disorder (OCD) and depression. The patient had been following up with his outpatient psychiatrist in Mount Sinai, last seen one week ago and has been partially compliant with medications. Patient had deep brain stimulation implanted in 7/2013 to Nucleus Accumbens. As per the psychiatrist, patient is having periods of emotional outburst with symptoms of increased energy, decreased sleep, pressured speech, involving in high risk taking behavior losing millions of dollars and sexual. Patient has also been verbally aggressive to his children and other people. One day prior to evaluation, the patient threatened his daughter stating, "If you don't shut up, I am going to send you home in a stretcher." Daughter then relayed the information to the mother who became concerned called patient's psychiatrist. The psychiatrist called 911 and had the patient brought in for evaluation. Patient reported no depressive, anxiety or psychotic symptoms. Reported no SI/HI. Reported no AH/VH. Reported no substance abuse.

NEUROPSYCHIATRIC MANIFESTATIONS OF SPINOCEREBELLAR ATAXIA TYPE 2 (SCA2)

Lead Author: Rumana Rahmani, M.D.
Co-Author(s): Rishi Chopra, MSIII

SUMMARY:

63y/o Argentinian male with history of spinocerebellar ataxia type II since age 45. There is no history of psychiatric diagnosis or prior inpatient psychiatric hospitalizations. There is a history of followup with neurologist and cardiologist in New York City. Reportedly as per collateral, patient's disease has been progressing gradually where patient went from using cane to walker and then to wheelchair. Reportedly, patient underwent a drastic decline. Reportedly, approx 2 months ago during a party, patient was having visual hallucinations where he saw himself dead in a chair and he thought people were coming for his wake/funeral. Patient started mixing up reality with fantasy. Patient reportedly started exhibiting bizarre behavior, screaming at the dog, calling his wife bad names. Reportedly since last week, patient is unable to bathe/shower or dress himself. He has been withdrawn and seclusive. Past weekend, patient was in bed with head down swinging his feet and when asked to get up, he reported saying, "I have to get my thoughts in order. I am in the system. I am going crazy, give me 2 minutes." On day of admission, patient became agitated, verbally aggressive and started to open the sliding door to the backyard where the pool was stating, "I want to die." Patient became agitated, irritable, and angry upon intervention by wife. He attempted to punch her subsequently to which wife called 911, and

patient was brought to ER. Upon interview, patient was selectively mute, internally preoccupied, responding to internal and external stimuli: smirking. As per wife, patient was reported to have lucid period.

KETAMINE: KING OF CLUB DRUG AND ANESTHETIC PROVIDES A BREAKTHROUGH AS IT SHOWS EFFECTIVENESS IN TREATMENT RESISTANT DEPRESSION (TRD): A CASE REPORT

Lead Author: Abhishek Rai, M.D.
Co-Author(s): Will Vanderveer M.D.,Fadi Georges M.D.

SUMMARY:

INTRODUCTION: Originally developed as derivative of phencyclidine as a "dissociative anesthetic". Ketamine has non-competitive antagonist activity at NMDA receptor, which makes it a potent antidepressant which shows its antidepressant effect within hours. To our knowledge we present the first case report of use of intranasal ketamine for the patient of treatment resistant depression.
CASE REPORT: Mr. X is a 55 Years old Caucasian male.Presented to the clinic in 2003 with the symptoms of anxiety AND depressed mood which had gradually increased. After evaluation and mental status examination patient was given the diagnosis of Treatment resistant depression. He was also diagnosed with anxiety disorder with co-morbid substance abuse. Patient had medical diagnosis of OSA, hypogonadism, and hypothyroidism
Patient had failed trial of multiple antidepressants for a period of 10 years along with more than decade of psycho-therapy.
Before the decision for the treatment with ketamine was made patient had (BDI) score of 26 in November 2013, prompting a 2nd opinion evaluation. Looking into long term use of antidepressant failure it was discussed with patient and decision was made to start him on intranasal ketamine.
Patient was prescribed 150mg/mL IN Ketamine with a metered dose pump, beginning on December 12 2013. The first several doses were self-administered in the prescribing physician's office, with the agreement that the patient would arrange a ride home from the dose administration and not drive for 3 hours. He was started on 0.1 mL IN q 3 days (Dose) of IN ketamine. His max dose was .2 mL (30mg) qod titrated over several weeks on the basis of clinical improvement and monitoring for side effects. Max dose was reached by the end of January 2014, and he has been maintained on this dose as of this writing.
As the dose was titrated patients symptoms improved. His (BDI) was 13. So response after starting IN ketamine was about 50 percent reduction in symptoms.
Some of the noticeable side effects were dissociative symptoms including some out-of-body sensations and "not knowing who I was" for a few minutes after his doses, as well as mild headache and dizziness. These side effects were noticeable after 2nd and 3rd dose. His side effects stabilized with further doses of ketamine. Patient was regularly followed up every seven Days.
Patients currently is stable on 30mg IN q every other day (Dose of ketamine). He is being successfully maintained on this dose of IN ketamine with no current side effects except for mild nasal irritation.
CONCLUSION: We present first case of IN ketamine for the treatment of TRD. Our patient had no major side effect and marked improvement in his symptoms of depression. Ketamine has also shown to positively impact the sleep. The basis of action of ketamine is noncompetitive antagonism of NMDA receptor. Low cost of IN ketamine and its fast response makes it an easy available effective treatment option.

DIGOXIN INDUCED DELIRIUM IN AN ELDERLY PATIENT WITH DEMENTIA AND BIPOLAR DISORDER

Lead Author: Swapnil Rath, M.D.
Co-Author(s): Swapnil Rath, M.D.
Gunjan Gholkar, M.D.
William Cardasis, M.D.

SUMMARY:

Introduction: Elderly patients are prone to delirium due to commonly prescribed medications. Some of the most common co-morbidities in elderly patients are atrial fibrillation and congestive heart failure for which treatment may include digoxin. Digoxin toxicity usually manifests as cardiac arrhythmia, visual and gastrointestinal symptoms. CNS symptoms are less commonly recognized and may be the earliest or only sign of digoxin toxicity. The following case study depicts an elderly female

who developed CNS symptoms as the first sign of digoxin toxicity.
Case Report: A 66 year old caucasian female with past medical history of dementia, chronic atrial fibrillation, congestive heart failure, hypertension and bipolar disorder (stable on lamotrigine, quetiapine and duloxetine) was admitted to the medical floor for bilateral lower extremity swelling. The patient was diagnosed with cellulitis and IV vancomycin was initiated. She was found to have atrial fibrillation with rapid ventricular rate for which IV diliazem drip was started. On day 3, patient was switched to digoxin to optimize rate control and oral doxycycline due to improvement in the cellulitis. Digoxin level drawn on day 5 was high at 2.1 ng/ml. Psychiatry was consulted due to new onset hallucinations. The patient was found to have paranoid delusions, cognitive deficits, auditory and visual hallucinations. The neurological physical examination was negative for focal deficits. CT head w/o contrast showed generalized volume loss and microvascular ischemia changes. Her medical work-up was unremarkable. We thought the patient was having symptoms due to high digoxin level and hence the dose was reduced. The repeat level on day 8 was normal at 2.0ng/ml. The doxycycline was stopped due to possible adverse drug interaction with digoxin. The patient was transferred to inpatient mental health for further monitoring. Over the next few days, patient's mental status improved and on day of discharge she was back to her baseline.
Discussion: The CNS manifestations of digoxin toxicity are most common in elderly but least studied. These include visual and auditory hallucinations, paranoid ideations, agitation, drowsiness, fatigue, malaise, cognitive deficits and depression. These could be the first and the only manifestation of digoxin toxicity. Malnourished older patients with low albumin are at higher risk due to digoxin's protein binding capacity. Patients with low potassium tend to have more adverse effects of digoxin. Antibiotics like doxycycline can increase digoxin levels. This patient was at high risk of digoxin induced delirium due to hypoalbuminemia, hypokalemia & doxycycline use.
Conclusion: Clinicians should be aware of drug-drug interactions in elderly patients with psychiatric illness that have medical co-morbidities. There is limited literature on digoxin induced delirium. We hope this study will help early recognition, reduce morbidity & shorten length of hospital stay.

MIGRAINE AND MOOD â€“ AN INTERESTING CASE REPORT!

Lead Author: Mahreen Raza, M.D.
Co-Author(s): Shazia Naqvi, M.D., Najeeb U Hussain, M.D.

SUMMARY:

Objective:
Although treatment of migraine is well established but there is very little literature is available for the use of immunosuppressive therapy for Migraine. As there is data regarding the use of corticosteroids for prevention of recurrence of migraine, there is very limited data supporting its use during active episode. The aim of this current study is to support the use of corticosteroid in active resistant cases of complicated Migraine and its effect on refractory depression.
Methods: Case presentation and literature review.
CASE REPORT: This is a 34 year old Caucasian female married, domiciled with prior history of Bipolar Disorder, admitted to an inpatient psychiatric unit with severe depression and suicidal ideations. She was at the verge of losing her job as paralegal that was the major stressor at that time. Patient was admitted to inpatient psychiatric unit for severe depression, suicidal ideation. Headache was the major contributor to refractory depression. Patient reports that she was quite impulsive and she actually shaved her head out of strong impulses. She distracted herself from slashing her wrist or cutting her throat. Vital signs were stable and lab values were unremarkable. There was no improvement of bipolar depression with quetiapine 300mg bid and lamotrigine 200mg daily. Neurology consult was called for resistant Migraine Headaches. She was started on short course of rapidly tapering corticosteroid other than conventional therapy due to resistant nature of Migraine Headache. Headaches improved and patient came out of depression miraculously in the matter of two days.
CONCLUSION:
This case illustrates the use of corticosteroids during active resistant Migraine attacks. An acute Migraine treatment in emergency setting by Aaron Saguil MD et al., states that using dexamethasone with abortive therapy, reduces the chances of recurrence. The institute for

Clinical Systems Improvement suggests a graduated response to severe Migraine headache symptoms starting with triptans and NSAIDS then ergotamines and finally neuroleptics, with reservation of opioids and dexamethasone as adjunct in refractory cases. Also, the European Federation of Neurological Societies suggests using corticosteroid for Status Migrainosus. Innes et al., in a multi center clinical trial, demonstrate that 24mg of dexamethasone intravenously decreased the incidence of severe recurrent headache after ED treatment. This trail used higher dose of dexamethasone as compared to previous study mentioned. All patients in Innes study received dopamine antagonists, raising the issue of possible synergistic benefit from dexamethasone plus dopamine antagonists.
There are studies supporting the development of Migraine from depression and vice versa. In other words, our case describes the bidirectional relationship of Migraine and depression suggested by treatment of both with corticosteroid.

ADULT ADHD AND CO-MORBID BIPOLAR DISORDER AND TREATMENT -- A CASE REPORT AND LITERATURE REVIEW

Lead Author: Neelambika S. Revadigar, M.D.
Co-Author(s): Paroma Mitra, M.D., and Evaristo Akerele. M.D.

SUMMARY:

Introduction
There is an increasing awareness of the overlap of attention-deficit/hyperactivity disorder (ADHD) and bipolar disorder (BPD) in youth and adults. E.g., Winokur et al (1995) indicated that 20% of adults with BPD had criteria for ADHD. Although heightened recognition of adults with ADHD and BPD has been observed, little evidence is available guiding the pharmacotherapeutic treatment of these pts. While stimulant medications are clearly effective for the treatment of ADHD in adults (Spencer et al 1995), there have been theoretical concerns that stimulant medications may exacerbate mania or psychosis in bipolar or bipolar-prone individuals (Del- Bello et al 2001). So, studies of alternative agents with minimally destabilizing properties for treating ADHD in BPD adults are warranted.
Case presentation
26 y/o Caucasian man, with h/o ADHD and Bipolar I disorder, 2 hospitalizations within 2 months, and recent hospitalization in NY Presbyterian hospital (10/11/13 to 11/4/13) with no known medical problems came to clinic for intake. Pt. had recently moved from another state, had become medication non complaint resulting in exacerbation of manic and ADHD symptoms that included talking too fast, euphoria, grandiosity, hearing voices, decreased need for sleep, hypersexuality, and racing thoughts/flight of ideas, impulsivity, inattention, hyperactivity. Pt. also reported psychotic symptoms. Collaterals had indicated extensive history of ADHD and Bipolar Disorder. Initially he was treated with anti-psychotic and mood stabilizers for the first 4 weeks. Patient's mood and psychotic symptoms began abating. However, symptoms of ADHD prevailed including inattention, hyperactivity and impulsivity. Bupropion (atypical anti-depressant) was added to his regime in week 5. The pt.'s ADHD symptoms decreased by almost 60% in 3-4 weeks.
Discussion
This case report and prior studies suggest that atypical antidepressant bupropion, which is an aminoketone that has indirect dopaminergic and noradrenergic agonist effects (Ascher et al 1995), has been shown to be effective in the treatment of ADHD both in controlled pediatric (Barrick- man et al 1995) and adult trials (Wilens et al 2001c). In particular, bupropion has been reported to have been associated with less risk of inducing hypomania, mania, and rapid cycling when treating depression in adults with BPD compared to other antidepressants (Compton and Nemeroff 2000).
Conclusion
Data on treatment response in ADHD/BPD in adults is limited. The literature review and case report strongly suggest that ADHD comorbidity should always be considered in pts. presenting with BPD. Sequential treatment is recommended. Bupropion showed improvement in ADHD and BPD without aggravating manic/psychotic symptoms.
Future Directions
1) Double blind controlled study for efficacy of Bupropion as adjunct treatment in BPD/ADHD
2) Double blind study assess the role of psychotherapy in treatment outcome for ADHD/BPD

BICYTOPENIA: ADVERSE EFFECT OF RISPERIDONE

Lead Author: Muhammad Rizvi, M.D.

SUMMARY:

Hematologic abnormalities, such as leukopenia, agranulocytosis, and thrombocytopenia, can be life threatening adverse reactions to atypical antipsychotics. Although clozapine has the highest risk of leukopenia and neutropenia, these side effects also have been associated with other atypical antipsychotics, including risperidone, olanzapine, ziprasidone, paliperdione, and quetiapine. Risperdone induced leukopenia has been reported, but risperidone-induced bicytopenia that is, leukopenia/thrombocytopenia is rare.

Case

Mr. A, age 25, is an African American man admitted to an inpatient psychiatric unit for management of acute psychotic symptoms. He has been taking risperidone, 4 mg/d, for the past 6 months, although his adherence to the regimen is questionable. Baseline blood count shows a white blood cell (WBC) count of 4,400/Î¼L with an absolute neutrophil count (ANC) of 1,900/Î¼L and a platelet count 160Ã—103/Î¼L. A few days after restarting risperidone, repeat blood count shows a drop in the WBC count to 2,900/Î¼L, with an ANC of 900/Î¼L and a platelet count of 130Ã—103/Î¼L.

Mr. A's physical examination is normal, he does not have any signs or symptoms of infection, and additional lab tests are negative. Risperidone is considered as a possible cause of bicytopenia and is discontinued. Mr. A agrees to start treatment with aripiprazole, 10 mg/d.

In next 10 days, the WBC count increases to 6,000/Î¼L. The ANC at 3,100/Î¼L and platelets at 150Ã—103/Î¼L remain stable throughout hospitalization. The slowly increasing WBC count after stopping risperidone is highly suggestive that this agent caused Mr. A's bicytopenia.

Differential diagnosis

Bone-marrow suppression is associated with first- and second-generation antipsychotics. Blood dyscrasia is a concern in clinical psychiatry because hematologic abnormalities can be life-threatening, requiring close monitoring of the blood count for patients taking an antipsychotic. It is important, therefore, to consider medication side effects in the differential diagnosis of >1 hematologic abnormalities in these patients.

Precise pathophysiologic understanding of the hematologic side effects of anti-psychotics is lacking, although different mechanisms of action have been proposed. Possible mechanisms when a patient is taking clozapine or olanzapine include:

- direct toxic effect of the drug on bone marrow
- increased peripheral destruction
- oxidative stress induced by unstable metabolites.

There is not enough evidence, however, to identify risperidone's mechanism of action on blood cells.

Aripiprazole might be a useful alternative when another antipsychotic causes leukopenia and neutropenia. In addition to regularly monitoring the blood cell count during antipsychotic treatment, the neutrophil and platelet counts should be monitored.

HALLUCINATIONS RELATED TO SENSORY DEPRIVATION OF CEREBRAL CORTEX: A LINK BETWEEN PSYCHIATRY AND NEUROLOGY

Lead Author: Erik M. Rotterman, B.S.
Co-Author(s): Vipul Shukla, M.S., Hongyan Li, M.D., Ph.D.

SUMMARY:

Deprivation of sensory inputs can result in reorganization of the cerebral cortex. Dynamic changes in deafferented cerebral cortex are well known yet poorly understood. Mechanisms may vary depending upon the nature of damage, the integrity of other nervous systems, and the individual's health. Although the neuroplastic response may retain or "normalize" the interrupted sensory hierarchies, transient or persistent clinical disorders-including significant hallucinations-may occur due to maladaptation. We report three cases of patients who presented with unimodal hallucinations related to severe visual or auditory loss.

The first case is a 94-year old woman who developed recurrent and episodic visual hallucinations with vivid details. Her medical history was significant for chronic macular degeneration. Behavioral changes or psychiatric history were not present, and physical examination demonstrated advanced bilateral cataracts and a visual acuity of 20/200. MRI showed an old right occipital lobe vascular lesion with encephalomalacia. She was diagnosed with Charles Bonnet syndrome.

Cataract surgery was performed, and her hallucinations resolved.
The second case is a 61-year old woman with history of migraine and an old right posterior hemispheric stroke. The stroke caused a left visual field defect that had nearly recovered subjectively. She presented with recurrent and episodic visual hallucinations of primitive, twisted bright patterns following light exposure. Physical exam revealed a visual field defect in the left superior temporal quadrant. MRI showed an extended old stroke involving the right inferior primary visual cortex, optic radiation, and the lateral geniculate body. EEG showed a reduced response to photic stimulation in the right posterior hemisphere. However, photic stimulation triggered her visual hallucination and these symptoms persisted for three days. Altered response to light was concerning to the patient, and reducing exposure to bright light was recommended.
The third case was a 79-year old woman who presented with recurrent and episodic vivid auditory hallucinations at night or in darkness. Medical history was significant for poorly corrected bilateral hearing loss. Physical exam was unremarkable except for profound bilateral deafness (R>L). MRI showed old lacunar infarcts in the brainstem and EEG was normal. Psychiatric evaluation revealed mild depression, related to the death of her husband two years prior. Her hallucinations were explained by possible cortex-initiated maladaptation when alternative sensory afferents to the deprived auditory cortex were interrupted.
These cases demonstrate unimodal hallucinations related to severe cortical deprivation of specific sensory inputs. Healthcare providers, especially psychiatrists and neurologists, should be aware of this type of under-recognized clinical condition to avoid misdiagnosis and mistreatment.

ADOLESCENT WITH CATATONIA: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Riyad M. Rouf, M.D.
Co-Author(s): Tolga Taneli, M.D.

SUMMARY:

Introduction:
Catatonia is commonly associated with schizophrenia, mood disorders, and disproportionately with autism in youth. Medical conditions associated with catatonia include inflammatory and toxic states. We discuss a case of a patient who presented with a range of risk factors, including an inherited vulnerability, as well as the abuse of substances, including cannabis.
Case Report:
A 16-year-old Brazilian-American boy presented with a history significant for disruptive behavior in the context of arguments with his mother, attention-deficit hyperactivity disorder, as well as sporadic cannabis use. His treatment included outpatient therapy and the prescription of dextro-amphetamine. He presented to the emergency department acutely agitated, disorganized in thought process, and actively hallucinating. Family revealed that he had been abusing cannabis, as well as the prescribed stimulant. His altered mental status was suspected to be delirium due to amphetamine intoxication, prompting an intensive care unit admission, as well as a work-up for encephalitis. MRI of the brain was normal, as were cerebrospinal fluid (CSF) evaluations that included studies for syphilis, herpes simplex, and a CSF culture. Thyroid stimulating hormone (TSH) and free thyroxine (FT4) were also in the normal range. Urine toxicology was positive for amphetamines, but not cannabinoids. By day two, when his mental status had not improved at the rate expected for amphetamine toxicity, suspicions were raised for a persistent psychotic state of organic cause. It was later revealed by family that the patient had also abused the supplement L-theonine and the Brazilian prescription medicine, "Dorflex," which contains metamizole, orphenadrine citrate, and caffeine. Autonomic instability suggested anticholinergic delirium due to orphanedrine, but perseveration in paranoid delusions and signs of catatonia were strongly making the case for an organic psychosis. A formal examination for catatonic symptoms revealed echolalia, palilalia, "mitgehen", waxy flexibility, and stupor. The mother had previously mentioned a family history significant for disruptive behavior and substance use in the patient's half-brother, who lived in Brazil. A more thorough pursuit of leads revealed that the half-brother had developed similar psychotic symptoms and was admitted to a psychiatric facility in Brazil by the fifth day. Although the patient's catatonia began to respond to lorazepam, up to 2 mg three times daily, he was

eventually transferred to an inpatient psychiatric unit for further care.
Discussion:
Catatonia is commonly seen in adults, but more rarely in children and adolescents. Catatonic symptoms have also been reported with the use of cannabinoids and amphetamines. This patient favorably responded to lorazepam, the approved treatment. The speculated mechanism of action is through GABAergic effects. Electroconvulsive Therapy (ECT) remains an effective last-resort treatment.

SEVERE ANXIETY AND PANIC ATTACKS DUE TO ACUTE PHENIBUT WITHDRAWAL

Lead Author: William D. Rumbaugh Jr., M.D.
Co-Author(s): Roger H. Duda, M.D.

SUMMARY:

In this case, we present a patient who experienced an acute worsening of anxiety and panic attacks in the context of withdrawal from an over-the-counter supplement. The supplement, currently available, is marketed for treatment of anxiety, panic, and depression, and contains a proprietary blend of multiple ingredients, notably Phenibut (beta-phenyl-gamma-aminobutyric acid). After approximately 6 months of daily use, the patient abruptly discontinued the supplement, leading to multiple severe panic attacks culminating in a visit to the emergency department. We highlight the pharmacological effects of Phenibut and the potential withdrawal implications, with particular emphasis on the importance of screening for use of over-the-counter supplements due to their impact on patient care and management.

EFFECT OF EARLY LIFE STRESSORS THAT PREDICT ADULT DEPRESSION ON PERFORMANCE AND BRAIN MORPHOLOGY

Lead Author: Ayman Saleh, M.D.
Co-Author(s): Guy Potter, Ph.D., Brian Boyd, B.S., Kamil Kudra, Ph.D., James MacFall, Ph.D., Warren Taylor, M.D. M.H.Sc.

SUMMARY:

Introduction:
Early life stress (ELS) in childhood has negative effects on emotional function and increase risks of depression in adults. Human studies report ELS being associated with long term brain alterations, while animal studies report changes in adulthood cognitive function. Few studies have clarified the type of stressors that primarily contribute to depression.
Hypothesis:
Specific early life stressors will predict adulthood depression. These stressors will also be associated with poorer cognitive function and alterations in regional brain volumes.
Methods:
We examined 129 adult subjects, including 64 with MDD and 65 comparison controls. All participants completed diagnostic testing, neuropsychological testing and 3T cranial MRI. Childhood stressors were assessed by self-report. Using FreeSurfer we measured volumes of regions previously reported to be related to ELS, specifically anterior cingulate cortex, orbitofrontal cortex, amygdala, hippocampus and caudate nucleus. We conducted regression analyses to identify which stressors predict MDD and examined their effect on cognition function and regional brain volumes.
Results:
MDD patients reported increased rates of several specific early life traumas, including emotional abuse, physical abuse, sexual abuse, severe family conflict, neglect, major illness in family and being bullied. Only emotional abuse, sexual abuse and severe family conflict significantly predicted depression. In all subjects, these three traumas were associated with poorer performance on tests of processing speed and working memory. Moreover, they were associated with smaller left lateral orbitofrontal cortex and right caudate. We also observed an interaction between these three stressors and diagnosis, where these three stressors were associated with smaller hippocampus volumes but only in depressed subjects.
Conclusions:
Out of eight stressors, only emotional abuse, sexual abuse and severe family conflict predict depression in adulthood. They also predict poorer performance on test of processing speed and working memory; and are associated with altered brain volumes of caudate, lateral orbitofrontal and hippocampus.
Discussion:
We found three early life stressors that predicted adulthood depression. Supporting previous animal data, these stressors were also

associated with cognitive dysfunction, in findings not widely reported in human studies. Although these stressors were associated with caudate and lateral orbitofrontal volumetric changes, they were only related to smaller hippocampal volume in the depressed cohort. However, the direction of this relation is unclear and need further study.

PSYCHIATRIC PRESENTATION OF HASHIMOTO'S ENCEPHALOPATHY

Lead Author: Yuliet Sanchez, M.D.
Co-Author(s): Sarah Fayad, M.D., Almari Ginory, D.O.

SUMMARY:

Hashimoto encephalopathy (HE), represents a rare disorder of presumed autoimmune origins that can present with variety of psychiatric symptoms in association with elevated titers of anti-thyroid antibodies. The clinical presentation consists of relapsing and remitting episodes of neuropsychiatric symptoms that can have a complete remission with corticosteroid treatment. The symptoms include cognitive impairment, consciousness disorders, hallucinations, headaches, ataxia, coma, seizures, myoclonus, acute onset psychosis, depressive symptoms or mania. We present two cases of HE, focusing on their evaluation, psychiatric symptoms and subsequent management.
Case 1: 58 yo female with history of depression presented to the Emergency Department for abdominal pain and altered mental status (AMS). She had a two months history of personality changes with irritability, mood lability, aphasia and problems balancing her checkbook. She was mumbling, confused, agitated and threatened to kill herself. Lorazepam and Ziprasidone were given to control the agitation and the patient was admitted to the hospital for further evaluation. An extensive workup for underlying organic etiology of AMS was unremarkable except for elevated thyroid peroxidase antibodies at 114.7, TSH elevated at 6.92, and Free T4 decreased at 0.85. CT, MRI, EEG were all negative. She was treated with Levothyroxine for subclinical hypothyroidism and Methylprednisolone. Her conscious level improved but she continued talkative, with elevated mood, pressured speech, and agitated at times. Quetiapine and Chlorpromazine were started for agitation and mood stabilization. Once medically cleared she was transferred to a psychiatric facility for further observation.
Case 2: 79 yo female with history of depression, primary hyperparathyroidism, and hypothyroidism presented with a two months history of AMS, agitation, and combativeness. On exam she exhibited aphasia, visual hallucinations, paranoia, and was responding to internal stimuli. Laboratory workup was remarkable for elevated serum calcium to 13.2, TSH low to 0.11, Free T4 decreased at 0.89, Thyroglobulin antibodies increased to 263, and PTH elevated to 88. Head CT showed Left Intracranial Hemorrhage, Head MRI revealed a Meningioma, and EEG showed seizure activity from the left parieto-occipital region. She was treated with a course of Prednisone, Levothyroxine for hypothyroidism, Phenytoin for seizures, and Quetiapine for agitation. The AMS, seizures, and psychosis resolved and the patient was discharged home.
HE is a rare disorder that is likely to be under-diagnosed due to its diverse clinical presentation. It presents with a variety of psychiatric symptoms that can rapidly resolve after treated with steroids. For instance, it may be useful to screen for anti-thyroid antibodies and to consider this disorder in the differential diagnosis of patient that presents with a subacute onset of psychiatric symptoms and thyroid abnormalities.

‘500 REPEAT VISITS: LESSONS LEARNED”

Lead Author: Eric G. Santos, M.D.
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SUMMARY:

$4 billion is spent annually on people who use the ED for non-urgent care and repeatedly. Studies report that 8% -27% of all ER visits are inappropriate. "Frequent users" (6 visits/year) utilize behavioral health services with a financial costs 6 times greater than that of others. Many repeat visitors are resource-poor mentally ill patients. Repeat users" have 2 visits within 3 years, "serial users" 4 visits per year, "extreme" users make up to 70 visits per year, and "super" users return to the ED dozens, even hundreds, of times per year. There has been an increase in mental health related issues among all "repeat users", "highly frequent users", and so-called, "super frequent users" of whom the

frequent users were more likely to make at least one ED visit associated with mental health, alcohol, or drug-related diagnoses.

We report a case of a 56-year-old woman who walked into the ED approximately 500 times over the last 16 years (averaging 31 visits/year). She is separated, unemployed on SSI and carries a diagnosis of Bipolar disorder NOS, Substance-Induced Mood disorder, as well as cocaine and alcohol use disorder, with previous psychiatric hospitalizations last 18 years prior, with inconsistent follow-up at a hospital-based patient-centered Medical Home clinic which serves mentally ill chemically affected patients. She is fairly consistent in taking Aripiprazole, Buspirone and Gabapentin. Her initial complaints have ranged from feeling anxious to worry about rent issues, usually right after recent cocaine and alcohol use. She tends to use alcohol (8 beers) on weekends with blood alcohol levels ranging from 0-180 mg/dl and $100 worth of cocaine three times a month. She has declined offers for detox or rehab. Immediately upon initial contact with the ER psychiatrist she states that she feels better and is ready to go home.

Hospitals are expected to address the recurring needs of repeat users of the ED including patients with dual diagnosis. These frequent visits impact utilization of resources in the ED including staff time, increase waiting time and divert resources from patients with more urgent needs. As many as 30 million previously uninsured people will be gaining health coverage with recent implementation of the Affordable Care Act and a marked increase in the use of the ED is expected, including increases in repeat visits.

Interventions targeting frequent users of ED's may be effective. Integrated case or care managers can be cost-effective, reduce ED costs and improve social and clinical outcomes. Other measures include integration of healthcare across specialties, elimination of gaps in care, supporting collaborative care between hospitals and community agencies. Individualized treatment plans upon prompt identification of high utilizers can help break the cycle of repeat visits.

This case illustrates the need for a multipronged approach to help decrease high volume users, decrease costs and improve patient care.

USE OF MEMANTINE IN AUTISM SPECTRUM DISORDER: A LITERATURE REVIEW AND CASE REPORT

Lead Author: Adam H. Schindzielorz, B.Sc.
Co-Author(s): Suzanne Holroyd, M.D., Kristina Bryant-Melvin, M.D.

SUMMARY:

Objective: To add to the current literature regarding the use of memantine as treatment for communication deficits in autism in the pediatric populations.

Introduction: Autism spectrum disorder (ASD) refers to a group of phenotypically similar neurodevelopmental conditions of which autism is the best known. ASD is characterized by deficits in social relatedness, communication, and interfering repetitive behaviors. Associated symptoms include inattention, aggression, irritability, hyperactivity, anxiety, and self-injurious behaviors. Currently, FDA-approved treatments exist to treat secondary symptoms but not core symptomatology. The etiology of autism and other ASD is thought to be multifactorial but is not well understood. Some studies suggest that glutamate excitotoxicity may play a role in the pathogenesis of ASD. Memantine, an NMDA-receptor antagonist, could potentially address core symptoms in ASD by targeting disease-specific pathophysiology.

Methods: A literature search of multiple databases was performed using the search terms "memantine, autism, child, adolescent, speech and verbal communication." Literature results were compared to our case outcome in order to lend support or refute the findings associated with our patient's treatment with memantine.

Case Report: Our patient is an 11 year old Caucasian male who began treatment with memantine following parental request after learning of a phase II clinical trial utilizing the drug for treatment in autism. Following one month of receiving memantine 5mg daily the patient reportedly began showing increased verbal communication at home. Despite the patient not exhibiting verbal communication on patient interview at the clinic, the guardians reported that the patient had begun using 30 plus newly learned words, and had learned to communicate via sign language. Continued improvement in communication was noted over the course of one year of treatment with memantine.

Discussion: Memantine is currently undergoing several phase II clinical trials for the purpose of treating core symptoms of ASD. Multiple articles suggest the potential benefit of mematine due to suspected glutamate excitotoxicity as a contributor to illness development and the related drug mechanism of action. Several case reports as well as open-label trials suggest increased receptive and expressive use of language in autistic children and adolescents with memantine treatment. Our patient appeared to obtain similar benefit through increased use of verbal communication skills. Our case appears unique in that he also began using sign language.
Conclusion: Memantine is not yet approved for treatment of ASD. However, in this case it appeared effective for treating core deficits in verbal and non-verbal communication in a child with autism.

BOUNDARIES BETWEEN VEGAN DIET, EATING DISORDER AND HEALTH ANXIETY DISORDER: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Pernilla Schweitzer, M.D.

SUMMARY:

In recent years, there has been a dramatic rise in the number of people who adhere to vegan diets to achieve health goals or weight loss. Adhering to such a diet is often time consuming, expensive, and a limit to social activities. How do we distinguish certain strict diets from eating disorder or health anxiety disorder? How do we account for sociocultural definitions of diet? We explore these boundaries in the case of a 24-year-old Native American woman living in the San Francisco Bay Area who presented with complaints of body dysmorphia, failure to thrive, social isolation and fear of developing cancer. We discuss the bi-directional relationship between her symptoms and her diet, which consisted of strictly vegan and gluten free food. These questions have important implications on prognosis, treatment and insurance coverage, in addition to larger social ramifications.

LOXAPINE AS AN ALTERNATIVE TO CLOZAPINE

Lead Author: Syed S. Shah, M.D.

Co-Author(s): Mitali Patnaik, M.D., Francis Smith, M.D., Munjerina Munmun, M.D.

SUMMARY:

Abstract: Loxapine a dibenzoxazepine shows great structural and functional homology to the atypical antipsychotic clozapine as it has a high affinity for binding to serotonin 5-HT2 and dopamine D4 receptors. However, it is not atypical like clozapine, since its 5-HT2 occupancy is not higher than its D2 occupancy. Loxapine has traditionally been considered a typical neuroleptic, but its pharmacological properties are rather atypical. In vitro studies have shown that its 5-HT2 affinity is higher than its D2 affinity. We present a case where we used Loxapine as an alternative to Clozapine in treatment resistant psychosis.
Case: 67 y/o WF with a past psychiatric history of bipolar disorder was admitted to the hospital with worsening psychosis secondary to treatment non-compliance. On admission, patient was floridly psychotic with disorganized speech and behavior, laughing hysterically, labile, racing thoughts, loose associations and poor hygiene. She had been on Lithium for many years but was discontinued as a result of renal failure. PMHx included hypertension, hemorrhoids and obesity. During the course of her hospitalization, the patient was on a variety of antipsychotic and mood stabilization medications. The patient eventually agreed to a trial of Clozapine as long as the drug was titrated slowly. She complained of dizziness and fell on occasion without sustaining head injury. She had minimal response to Clozapine 100mg/day. She had fixed delusions that she had five baby infants with her outpatient psychiatrist, to whom she believed she was married and that her inpatient psychiatrist was her father-in-law. While on clozapine, the patient's hemoglobin dropped to 6.2 and she was subsequently transferred to the medical hospital for treatment. Clozapine was cross titrated with Loxapine and ultimately discontinued. We titrated her to a dose of Loxapine 20mg daily. Marginal improvement of the psychotic features was noted with Loxapine while foregoing the side effects of clozapine.
Discussion:Studies have demonstrated how Loxapine provides rapid improvement of psychosis and majority of the research has been done in establishing its clinical efficacy but given that it has structural and functional homology to Clozapine no studies have been

done to use it as an alternative to atypical antipsychotics when there are severe side effects especially with Clozapine. Loxapine does not produce the agranulocytosis that often results from protracted clozapine treatment but is usually associated with EPS. Thus, Loxapine is a viable option in treating resistant psychosis when patients are unable to tolerate clozapine but more research is needed to determine the effects of Loxapine compared to atypicas usually associated with EPS.

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CULTURAL CONCEPTS OF SEMEN AND ASSOCIATED PSYCHIATRIC PRESENTATIONS IN INDIAN MEN: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Hema Shah, M.B.A., M.D.
Co-Author(s): Mallika Lavakumar, M.D.

SUMMARY:

Background:
Semen is considered a symbol of masculinity, a vital body fluid representing male sexuality, reproductive ability and physical health. Cultural beliefs among Hindu Indian men regarding the power and role of semen contribute to various psychiatric presentations such as symptoms of anxiety, depression, and malaise. They also often explain and account for sexual dysfunction including poor libido, impotence, and sex addiction and for celibacy, a non-pathological lifestyle choice. (1) In changing paradigm of psychosexual health we as a physician should learn to take into account cultural meaning of sexual health concerns.
Results:
We present a case of a 23 year old Indian man with no prior medical or psychiatric history who presented with symptoms of fatigue, lethargy, dysphoria, decreased appetite, poor concentration, and body aches. He was soon to be married and worried immensely about his sexual performance and the implications of losing semen, which he viewed as a source of vitality, during masturbation and urination. It became clear that his culturally informed beliefs about semen and semen loss were contributing to his psychiatric presentation.
Discussion:
First, we discuss the historical and cultural beliefs surrounding semen as an elixir of life and a vital force. We describe how the expulsion of semen is also viewed as an obstacle to moral and spiritual growth. We explain how these beliefs inform our understanding of Dhat, a culture bound syndrome in India, where patients present with medically unexplained symptoms such as pain, fatigue, features of depression and anxiety, decreased libido and impotence when they lose semen through nocturnal emission or masturbation. We describe how the conceptualization of Dhat has evolved from purely a psychosomatic illness to a culturally conditioned expression of major depressive disorder. (1) We also discuss semen retention syndrome the opposite presentation of Dhat, where a fear of retaining semen rather losing semen leads to excessive masturbation and sex addiction. (2) Finally, we discuss the cultural practice of Brahmacharya or celibacy, where one refrains from the voluntary loss of semen, as a regimen to restore health, to exercise control, and maintain high moral standards.
Conclusion:
Semen has been overvalued for vitality, masculinity and sexual performance in men. It is interesting to check various semen related notions in male population and how it affects mental health. An understanding of the cultural beliefs regarding semen and associated psychopathology and sexual dysfunction is essential to provide culturally competent care for the male patients.

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MANIA PRECIPITATED BY WEIGHT-LOSS SUPPLEMENT GARCINIA CAMBOGIA: A REPORT OF THREE CASES

Lead Author: Noreen Shaikh
Co-Author(s): Brian Hendrickson, M.D., Mallay Occhiogrosso, M.D., Julie Penzner, M.D.

SUMMARY:

Popularized by Dr. Mehmet Oz, garcinia cambogia has emerged as a weight loss supplement. The active ingredient, hydroxycitric acid, is believed to modulate metabolism and appetite via cortical serotonin signaling. Although the putative mechanism of action of garcinia cambogia is through serotonin, literature demonstrating psychiatric side effects is limited. Review of the literature revealed one case of mania in a patient taking Hydroxycut, whose primary ingredient is garcinia cambogia, and another of a patient who developed serotonin syndrome with the combination of SSRI plus garcinia cambogia. Here we present three cases of stable, euthymic patients predisposed to mania whose manic episodes emerged during garcinia cambogia use.

Cases:

Mr. A is a 33-year-old employed male without psychiatric history, but with bilateral family history of depression, and with intermittent use of marijuana. Mr. A began garcinia cambogia for weight loss, at a dose of 1-2 pills daily. One-month into garcinia cambogia use, Mr. A was diagnosed with a manic episode of bipolar I disorder, and treated to remission with valproate and olanzapine.

Mr. B is a 50-year-old married male health professional with bipolar I disorder, including several psychiatric admissions. Prior to current presentation, he had been stable, out of the hospital and on no medications for five years. Two months prior to presentation, he began taking 2 pills daily of garcinia cambogia for weight loss, combined with a switch to a Paleolithic diet. One month into his garcinia cambogia use, Mr. B was admitted for mania, and treated to remission with valproate and olanzapine plus discontinuation of garcinia cambogia.

Ms. C is a 34-year-old married mother with bipolar II disorder and a history of SSRI-induced hypomania. At the time of initiation of garcinia cambogia, Ms. C had been stable for 18 months on an outpatient regimen of aripiprazole, bupropion and topiramate. Ms. C began diet, exercise and garcinia cambogia supplements for 4-6 weeks before being diagnosed with a recurrence of bipolar II disorder, with hypomanic and depressive features. Her symptoms remitted with continuation of her psychotropic regimen, the addition of lorazepam, and discontinuation of garcinia cambogia.

Although the instigators of mania are multifactorial and poorly understood, we postulate that in these cases, the sustained use of garcinia cambogia was etiologic in the mood disturbance, possibly through disruption of cortical serotonin signaling. Investigation into the mechanism of garcinia cambogia reveals similarities to that of SSRIs, with effective increases in synaptic serotonin. Thus with a mechanism similar to antidepressant-induced mania, garcinia cambogia in these patients likely led to increased synaptic serotonin activity, with the consequence of manic and hypomanic episodes. Based on the experiences of these patients, we suggest further research into the psychiatric safety of garcinia cambogia.

PSYCHIATRIC SIDE EFFECTS OF LEVETIRACETAM

Lead Author: Nima Sharif, M.D.
Co-Author(s): Christine Marchionni M.D., Roy Steinhouse, M.D.

SUMMARY:

Title : Psychiatric side effects of levetiracetam

Authors: Nima Sharif M.D., Christine Marchionni M.D., Roy Steinhouse, M.D.

Introduction:

Psychiatric side effects of new antiepileptic medications can be extensive and cause significant morbidity for patients. Studies have associated psychiatric and behavioral side effects to a number of new antiepileptic medications. These factors are at times neglected when choosing medications for patients.

CASE DESCRIPTION:

55 yr old AAF, with no past psychiatric history who, presented to the outpatient department with complaints of depression. She reported that her stressor involved having her first seizure on 1/9/2012. This event was found to be secondary to a benign meningioma, which was resected through neurosurgical procedure. Patient was subsequently placed on levetiracetam and developed depressed mood and low energy secondary to this medication. She also reported insomnia with frequent awakenings at night, obtaining only 4 hours of sleep per night, with decreased appetite and 25 lbs. weight loss since. She had decreased concentration, anhedonia, was becoming increasingly seclusive with increased crying spells and feelings of hopelessness and helplessness. She denied a history of

depressive episodes or manic episodes in the past. She was started on mirtazapine, titrated to, 15mg HS, with some improvement of insomnia and appetite. Patient was also placed on lamotrigine titrated to 150mg BID and levetiracetam was discontinued. Following these medication adjustments she reported resolution of all affective symptoms, increase in daily activities and enjoyment of social gatherings and family functions.
CONCLUSIONS:
Affective symptoms can be due to a wide range of conditions. The possible side effects of the current medications which a patient is prescribed should be considered. Studies have shown up to 25.4 percent of patients taking levetiracetam experienced some affective symptoms. Other studies have shown antiepileptic attributed psychiatric and behavioral side effects in adults treated with levetiracetam to occur at an overall rate of 15.8%. This was further classified into, depression (4%), irritability (9%), anxiety (1.9%), behavioral changes (3.5%), and psychosis (1.3%). Furthermore, levetiracetam was associated with significantly more psychiatric side effects when compared to other antiepileptic medications. This case supports the association of levetiracetam with psychiatric side effects, with significant improvement obtained from using alternative medications.
Studies have shown that psychiatric side effects occur in 23% of patients taking antiepileptics, who have a past psychiatric history, and in 12% of patients without a past psychiatric history. This information can lead to improved assessment of patients being prescribed antiepileptics, and can also aid in the selection of these medications based on more complete risk/benefit ratios.

INTRANASAL BUPROPION ABUSE: CASE REPORT AND LITERATURE REVIEW

Lead Author: Rahul Sharma, M.D.
Co-Author(s): Rohit Madan, MD; Ashish Sharma, MD

SUMMARY:

Introduction: Bupropion is a norepinephrine dopamine reuptake inhibitor commonly used for major depressive disorder, nicotine dependence, bipolar depression, ADHD and SSRI-induced sexual dysfunction or apathy. In recent years, there has been a growing concern about the abuse potential of bupropion. Here we report an interesting case of intranasal bupropion abuse in the hospital setting.
Case report: Mr. E is a 32-year-old male with DSM-V diagnosis of bipolar disorder and cannabis use disorder, mild who was admitted to the medical floor following an overdose of 10 pills of 2mg clonazepam. Upon initial evaluation, patient had reported that he was snorting the bupropion prescribed to him "to get high". Pharmacy records showed his home dose to be bupropion SR 200mg orally twice daily. Knowing this information, it is plausible to estimate the amount of bupropion being used intranasally by him to be close to 400mg per day, although the exact amount was not provided by the patient. After running out of the bupropion prescription, he began to go through withdrawal symptoms, which predominantly included nervousness, jitteriness and overall sense of unease. He eventually tried to counteract some of these symptoms with the use of clonazepam. While on the medical unit, video monitoring showed the patient to be crushing unknown pills into powder form and snorting them. With bupropion insufflation, he reported a high unlike the high he obtained from cannabis use. He did not report any adverse effects from bupropion insufflation and nor was there any seizures reported.

Discussion: Review of literature has shown a few case reports documenting bupropion abuse by nasal insufflation, in addition to intravenous abuse. One case report described abuse of bupropion involving prison inmates in a correctional facility. Inmates admitted to reporting ineffectiveness of other psychotropics in the hopes of being prescribed bupropion. Bupropion abuse has been documented in the civilian sector as well. In 2005, a 23-year-old nursing student decided to snort bupropion after reading on the package insert that bupropion acts as a dopamine reuptake inhibitor. She reported effects that were similar to cocaine, however weaker. In yet another case, a 29-year-old woman with a history of polysubstance dependence was admitted to the hospital following withdrawal from intravenous bupropion. She described the high as something similar to injection of cocaine of poor quality.
Conclusion: Bupropion abuse may be more prevalent than has been documented thus far. Whether the primary setting of abuse occurs in

a correctional facility or in the civilian population, it is something that is becoming more widespread. A common underlying factor appears to be history of substance abuse. More research is needed on the abuse potential of bupropion, and physicians need to be more cautious in prescribing it to subjects with significant history of substance dependence.

WEDDING VOWS MADE "IN SICKNESS" MAY NOT SURVIVE "IN HEALTH": A CASE OF MARITAL DISTRESS EMERGING AFTER SUCCESSFUL TREATMENT OF OCD

Lead Author: Neeral Sheth, D.O.
Co-Author(s): Alyson K. Zalta, Ph.D., Sheila M. Dowd, Ph.D.

SUMMARY:

BACKGROUND: Research shows that obsessive compulsive disorder (OCD) not only impacts how patients carry out their daily lives, but also has a significant impact on marital functioning. Spouses often become involved in accommodating patients' OCD symptoms and may experience an increased burden themselves. A cognitive behavioral technique known as exposure and response prevention (ExRP) has been successful in improvement of OCD symptoms, and several studies have shown that ExRP ultimately improves marital functioning. What has not been previously described in the literature is how marital conflicts may arise following successful treatment of OCD.
CASE REPORT: A 30 year old married man was referred for treatment of OCD. His obsessions included having intrusive thoughts of stabbing family members as well as thoughts of being homosexual. His compulsions were primarily mental compulsions in which he would spend hours neutralizing the obsessions by convincing himself they were not true. His OCD was severe to the point where he was not able to use his professional degree, but instead worked in the service industry where he could function despite his mental compulsions. Due to inadequate treatment, his OCD was never symptom-free throughout the course of his marriage. The patient was treated with a combination of fluoxetine and 12 sessions of ExRP. After his symptoms remitted, he was seen for medication management only. During follow up, the patient stated that his quality of life had considerably improved, but that he was increasingly dissatisfied with his marriage. He subsequently began an extra-marital affair which was eventually discovered by his wife, causing even greater conflict. The patient questioned if he had initially entered his marriage because of the stability that his wife provided him in the midst of the dysfunction created by his OCD.
DISCUSSION: This case demonstrates how successful treatment of OCD may increase marital conflict. After treatment of any chronic illness, roles within a marriage may be altered and couples may need to readjust to new ways of relating to one another. While this concept has been studied in other areas of medicine such as after bariatric surgery, there is little research on how couples might struggle after remission of a mental illness. Harry Stack Sullivan, the father of interpersonal psychoanalysis, theorized that anxiety was a driving force in one's choosing of a secure connection over a satisfying one. In this case, when our patient's OCD symptoms diminished, his drive to find a more pleasurable relationship may have overcome his drive for stability. This case illustrates the need for providers to educate patients on changes in family dynamics that might occur with symptom improvement, as well as offer counseling to couples during treatment to help guide them through these marital adjustments.

HOARDING IN YOUNG CHILDREN

Lead Author: Srijana Shrestha O'Connell, M.D.
Co-Author(s): Sultana Jahan, M.D.
Erum Khan, M.D.

SUMMARY:

INTRODUCTION:
Obsessive-compulsive disorder (OCD) is characterized by intrusive and unwanted persistent thoughts, urges, or images and repetitive behaviors or mental acts that are performed in response to an obsession. Pediatric OCD has a spectrum of symptom clusters including hoarding as a distinct subtype of OCD. Hoarding subtype is typified by a persistent difficulty or distress discarding or parting with possessions and excessive accumulation of objects .The DSM 5 distinguishes OCD hoarding subtype from the newly distinguished diagnosis of Hoarding Disorder. In hoarding subtype the obsession or origin of distress would be typical of OCD

(concerns about completeness or harm reduction).
CLINICAL CASE:
Mr. X is an 8 year old male with a past psychiatric history of ADHD and separation anxiety, who presented to clinic with bio mom on for evaluation of hoarding. Mom gave many examples of non-valuable items causing considerable distress to the patient to part with: ex: he would not allow mom to discard his trimmed hair after a hair cut- demanding her to save it in a bag, he would save trash ex: empty McDonalds Happy-meal boxes, empty soda bottles. At one point he performed CPR on a previously discarded soda bottle from the trash, saying "I will not let mom kill you". He was started on sertraline (SSRI) 12.5 mg po qam and titrated up to 25 mg po qam. Given mild response at first follow up visit, sertraline (SSRI) was increased to 37.5 mg po qam. The higher dose of sertraline (SSRI) led to marked improvements in symptoms as Mom reported he no longer was throwing fits with discarding items.

DISCUSSION:
Pediatric OCD has an annual prevalence rate ranging from 1-3% .The hoarding subtype affects as many as 20-30% of this population(Samuels et al 2002) . Given that reports of "very early onset" OCD (younger than 10) have only been recently documented, this percentage may not be an accurate reflection. The current data shows that hoarding subtype in older children and adolescents tends to have distinct features and poor treatment prognosis. Youth with hoarding compulsions show more severe symptoms, less insight and more magical thinking, increased rates of anxiety, aggression, physical complaints, and higher rates of panic disorder . They are a challenge to manage as information shows high drop out rates and treatment refusal. Given the unfavorable clinical portrait there is now a pressing need for research on the prevalence, development, course and evaluation of treatment protocols for young children. If hoarding can be better recognized and treated during childhood, perhaps some of its long-term effects can be alleviated.
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PTSD DEVELOPMENT AFTER TOXIC MOLD EXPOSURE

Lead Author: Edward V. Singh, M.D.

SUMMARY:

Background and Purpose: 50 year old female developed post traumatic stress disorder after a life threatening bout of toxic mold exposure. Her past medical history was significant for systemic lupus erythemous and asthma. No surgical history, and unknown family history.
Introduction:This patient was exposed to toxic mold 6 months ago. She had recently moved into an apartment that was recently renovated for a septic tank rupture. Unknowingly, the patient remained in the apartment for 2 weeks until she became symptomatic. She initially developed rhinorrhea, post nasal drip and ocular pruritus within a week, but attributed them to seasonal allergies. Shortly after (2-3 days) she developed severe shortness of breath, dyspnea and asthmatic reactions. She was hospitalized and diagnosed and treated for toxic mold exposure.
She had her house professionally tested for mold which came back positive for Stachybotrys chartarum. She relocated to a hotel during the mold removal. After completion of removal she moved back into her apartment, and developed similar but less threatening symptoms. Upon further testing, mold was still found. She is currently under legal battle with her landlord.
As a result of the mold exposure she was hospitalized for life threatening asthma exacerbation, lost her job, relocated twice, currently in a legal battle with her landlord. She has developed Post traumatic stress disorder. She started developing intrusive thoughts in the form of nightmares and flashbacks. She had negative changes in his mood with an inability to experience positive emotions and hopelessness. She had trouble sleeping, concentrating. Conversation or the sight of her old apartment will trigger an intense psychological or physiological distress. Her PTSD was being treated with a combination of cognitive therapy as well as pharmacotherapy.
Conclusion: An estimated 21% of asthma cases in the U.S. are attributed to mold exposure. After Hurricane Katrina which left 75% of New

Orleans submerged, an increase of cases of mold exposure were evident. Similar results were seen following Hurricane Sandy in New York. Toxic mold exposure can be a life threatening situation. It can lead to an ongoing legal battle, large financial losses, job losses, home relocation, all of which can result in post traumatic stress disorder.

HASHIMOTO'S ENCEPHALOPATHY: A RARE NEUROCOGNITIVE DISORDER

Lead Author: Garima Singh, M.D.
Co-Author(s): Oyinloye Gbola, M.D., Malwitz Kari M.D., Ithman Muiad, M.D.

SUMMARY:

INTRODUCTION: Hashimoto's encephalopathy (HE) is a rare neuropsychiatric syndrome, which often presents with cognitive decline, mood symptoms, psychosis, tremors, seizures, and an altered level of consciousness. HE for the first time was described in 1966 but still the pathophysiology of the disease is unknown. The occurrence of the disease is more prevalent in the young female (4:1) population with a mean age of 40-45. In the majority of cases, the symptoms completely resolved with a course of immunosuppressive treatment which suggests that the disorder is immune-mediated rather than the direct effect of altered thyroid hormone on the nervous system. Because of the infrequent occurrence, lack of specific diagnostic criteria and the broad spectrum of manifestations, the disease is often underdiagnosed which results in serious consequences.
CASE: We present a case of a 22 year old female who presented to the Emergency Room with a seizure like spell. She was unable to comprehend the questions, was confused and demonstrated inappropriate behavior. Her mother reported that for a period of 3 weeks the patient had been having on and off altered levels of consciousness, numbness, tingling, cognitive decline, seizure spells, headache, nausea, with a seizure like spell. She was also admitted at an outside hospital and a complete work up was done including MRI, CT scan which was unremarkable. During her stay in our hospital, the patient underwent multiple tests including MRI which was unremarkable, NMDA was negative, Thyroid peroxidase was elevated with values of 385.5 IU and ANA was positive, suggestive of Hashimoto's encephalopathy (autoimmune disease). Thyroid panel was normal. Her EEG was grossly abnormal demonstrating generalized slowing consistent with her presentation of an encephalopathy. Following diagnosis, she was treated with 5 days of IVIG, and noted dramatic improvement in condition. She was discharged from the hospital in stable condition and followed in up out patient, when she was back to her normal cognitive function, EEG had normalized and her anti-thyroid peroxidase level was 136.
DISCUSSION: HE is a disease of exclusion with a variable clinical presentation. The literature and research is limited, the majority of reported cases have been associated with hypothyroidism, although a number of cases have been identified with hyperthyroidism, prompting some authors to label this disease as Steroid Responsive Encephalopathy Associated with Autoimmune Thyroiditis (SREAT). A review of literature shows that the most common antithyroid antibody detected amongst reported cases is anti-TPO (86%), followed by antithyroglobulin antibodies (48%). Since no specific diagnostic criteria are present, the disease is often underdiagnosed and results in fatal results. Further research, investigation and education are needed to study the pathogenesis of the disease.
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CONVERSION DISORDER IN AN APPALACHIAN COMMUNITY: A PREVALENCE AND CASE CONTROL STUDY

Lead Author: Sarah E. Slocum, B.S.
Co-Author(s): Suzanne Holroyd, M.D.

SUMMARY:

Conversion disorder (CD) has long been a debated diagnosis in both the psychiatric and general medical literature; requisite diagnostic criteria have evolved in sequential versions of the Diagnostic and Statistical Manual of Mental Disorders (DSM). CD is thought to be the manifestation of physical and/or neurological symptoms for primary gain without an identifiable organic cause. Historically, CD has been described as being more common in women, in those with a lower educational level and socioeconomic profile, and in rural communities. Prevalence of reported CD on psychiatric consultation services varies widely (5-25%) depending on the population studied.

For example, high rates are reported in military hospitalized populations. However, there is little evidence in the literature actually examining or supporting that CD is in fact more common in rural areas. To our knowledge, there is no known prevalence or other study of CD in a United States Appalachian population.

In this case control study, we examined the prevalence of CD in a rural Appalachian community hospital-based psychiatric consultation service in Huntington WV. We also performed a chart review of 26 patients diagnosed with CD (cases) and compared them to 52 control subjects, who were randomly selected patients from the same psychiatric consultation service during the same time period. The prevalence of CD in our consultation service was 6.6% within a 13 month period. The prevalence is compared to other described consultative and clinical populations and discussed. In addition, demographic, clinical, and associated factors of CD were examined and compared between the two groups (cases and controls). By examining these data, a better understanding of the prevalence and associated correlates of CD in a rural Appalachian population can be determined. This study adds to the literature regarding the associated factors of CD. Given the relatively low prevalence of CD in our study, our results do not support that CD is more common in rural areas.

HYPOTHYROIDISM DUE TO HASHIMOTO'S THYROIDITIS MASKED BY ANOREXIA NERVOSA

Lead Author: Adjoa Smalls-Mantey, D.Phil.
Co-Author(s): Adjoa Smalls-Mantey, D.Phil., Joanna Steinglass, M.D., Marshall Primack, M.D., Jill Clark-Hamilton, M.D., Mary Bongiovi, M.D., Ph.D.

SUMMARY:
Anorexia nervosa (AN) is typically associated with altered thyroid function tests, notably a low total and free T3, and lower, but within normal range, free T4 and TSH. A 16-year-old girl with a four-year history of AN presented with elevated TSH that fluctuated with changes in weight. TSH was within normal limits (1.7-3.64 mIU/L) following periods of weight loss and elevated with weight gain (5.9-21.66 mIU/L). Anti-thyroperoxidase antibodies were markedly elevated, suggesting chronic Hashimoto's thyroiditis. Of note, the elevated TSH that would be expected in Hashimoto's thyroiditis was blunted by weight loss associated with AN. Physicians should be aware that AN may contribute to masking thyroid abnormalities in Hashimoto's thyroiditis.

CLOZAPINE AND NABILONE IN THE TREATMENT OF TARDIVE TOURETTE SYNDROME - A CASE REPORT AND LITERATURE REVIEW

Lead Author: Natasha Snelgrove, M.D.
Co-Author(s): Paul Dagg, M.D., FRCPC

SUMMARY:
Tardive Tourette Syndrome is considered to be a type of rare tardive phenomenon. It is reported quite infrequently in the literature. The first case was reported and published in the 1970s and, since then, there have been less than 30 cases reported in the literature. Some of these reports include treatments tried for Tardive Tourette Syndrome (TTS). These treatments have typically included trials of clonidine, typical or atypical antipsychotics, or benzodiazepines. There is also a single previous case report from 1995 of successful treatment of TTS with clozapine. In our particular case, the subject developed TTS after approximately 6 years on varying antipsychotic treatments. The subject presented to us approximately 3 years after the onset of Tourette-like symptoms. Varying treatments were attempted, and success in treatment was found using clozapine, settling at a dose of 600mg PO daily. In addition, some evidence in the treatment of this subject suggested that nabilone may be useful as an augmenting or additional treatment option for some patients with Tardive Tourette Syndrome.

ELECTROCONVULSIVE THERAPY IN A PATIENT WITH A CRANIOFACIAL METALLIC PLATE

Lead Author: Caitlin Snow, M.D.
Co-Author(s): Dimitry Francois, M.D., Nabil Kotbi, M.D., Robert C. Young, M.D.

SUMMARY:
Introduction: Despite an expanding literature to support the safe and effective use of Electroconvulsive Therapy (ECT) in patients with cranial metallic objects (cMO), concerns remain that hardware may impose additional risk. This

case report describes a patient with titanium skull implants and severe bipolar depression who was successfully treated with two courses of right unilateral (RUL) ECT.

Case Report: A 52-year-old man with bipolar I disorder was admitted to a psychiatric hospital for treatment of severe depression. He had received numerous psychotropic trials with limited benefit. Suicide risk assessment was notable for two high-lethality suicide attempts and three first-degree relatives who completed suicide. Pertinent medical history included a remote facial reconstructive surgery with titanium plates implanted over his left zygomatic, maxillary and frontal bones. Following careful review, ECT was considered the best treatment option. No modifications to the ECT protocol were made. The patient responded to 12 RUL ECT treatments with a score reduction on the 17 item-Hamilton Rating Scale for Depression from 32 to 7. There were no side effects and he scored 30/30 on the Folstein Mini-Mental Status Examination throughout the treatment course. He was discharged on venlafaxine XR 225 mg and lithium carbonate 1200 mg (level 0.8 mEq/L). Five months later he was readmitted for a depressive relapse in the setting of non-adherence. He received nine RUL ECT treatments and improved with no complications. He was again discharged on venlafaxine XR and lithium carbonate.
Discussion: Clinicians have raised theoretical concerns that the presence of cMO in patients receiving ECT may interfere with current flow, increase the risk of vascular damage or facial fracture, or result in neuronal injury due to overheating. In response, Gahr et al. recently published a systematic review of 24 case reports of safe and effective ECT treatment in the presence of cMO, with 42% of authors reporting modified placement of the ECT electrodes. Given the evolving risk assessment and practice guidelines, it is important to report additional cases. None of the cases reviewed by Gahr et al. described more than one course of ECT. This case describes a patient with recurrent bipolar depression and multiple titanium facial implants who was successfully treated with two courses of RUL ECT within five months.
Conclusion: There were no procedure-related complications from two courses of RUL ECT in a patient with cMO. More case reports are indicated to assess absolute risk. Future research should investigate the role of repeated neuroimaging and the impact of electrode placement modification in these patients.

CULTURAL DISPLACEMENT WITH PSYCHOTIC FEATURES: A CASE STUDY

Lead Author: Rachel Steere, D.O.

SUMMARY:

We report the case of a young adult Rwandan-born male in the United States on refugee status who presented with disorganized, unpredictable behavior for court-ordered treatment after being found incompetent to stand trial on trespassing charges. We explore the possible role of cultural displacement and social isolation as related to this patient's psychotic presentation. We offer suggestions for clinicians to incorporate culturally supportive resources into the assessment and treatment of patients, including in-person translator services, culturally familiar social experiences, supportive behavioral observation, and cultural education for health care providers. We also review the forensic components of this case, which highlight the importance of cultural liaisons for patients navigating the intricacies of the legal system. Additional studies are needed to explore the effect of cultural displacement on the development, maintenance, and aggravation of psychosis and the effectiveness of culturally-tailored interventions for the treatment of psychiatric illness in culturally displaced patient populations.

INTRAVENOUS BUPROPION USE DISORDER RESULTING IN PSYCHOSIS AND TISSUE NECROSIS: UNDOCUMENTED COMPLICATIONS OF A DRUG HABIT WITH INCREASING POPULARITY

Lead Author: Melanie Strike, B.Sc., M.D.
Co-Author(s): Simon Hatcher, B.Sc., M.B.B.S., M.Med.Sc., M.R.C.Psych., F.R.A.N.Z.C.P., M.D., F.R.C.P.C.

SUMMARY:

Background: There are several reports of bupropion insufflation since 2002 and two cases of intravenous bupropion use disorder since 2013. There are no documented cases of bupropion injection associated with tissue necrosis or psychosis. Existing case reports do

not characterize drug seeking or preparation behaviors. There is no epidemiological data on bupropion abuse.
Case Presentation: We report two cases of habitual intravenous bupropion injection by individuals with polysubstance use and mood disorders. The patients learned to inject bupropion from individuals who were previously incarcerated. They easily obtained bupropion as a result of physician deception, diversion or crime, and consumed 1500 to 4500 mg daily by injection. Both individuals experienced vascular and tissue damage; one patient developed cellulitis, compartment syndrome, and extensive necrosis that nearly required multiple digit amputations. The other patient reported visual hallucinations and persecutory delusions that persisted for three days after his last use of the drug.

Discussion: Despite early claims that oral bupropion lacks addictive properties, bupropion is proposed to have amphetamine-like and addictive effects, particularly when administered intravenously or intranasally. Case studies and reports in the grey literature suggest that bupropion is becoming a drug of choice among recreational drug users, especially those with comorbid mood disorders. Individuals who inject high doses of bupropion may be at risk of severe complications such as tissue necrosis, seizures or psychosis. Prescribers should be aware of noncontrolled medications with emerging popularity among recreational drug users, such as bupropion, quetiapine and gabapentin. As with opioids and other controlled medications, physicians may consider employing clinical strategies to prevent the abuse or diversion of uncontrolled psychotropic drugs, especially when prescribing to a patient with a substance use disorder history. We identify a need for epidemiological research on the abuse of bupropion and other noncontrolled psychotropic medications. We propose a mandatory reporting system for cases of psychotropic medication misuse and consideration for the inclusion of bupropion and other noncontrolled psychoactive drugs in Prescription Drug Monitoring Programs. The abuse of these noncontrolled medications may be expected to rise as recreational drug users experience increasing difficulty in obtaining opioids, stimulants and sedative-hypnotics.

AUDITORY HALLUCINATIONS AS A PRESENTING SYMPTOM IN A TEMPOROPARIETAL LOBE LESION: A CASE REPORT

Lead Author: Paula Tabares, M.D.
Co-Author(s): Tabares Paula, M.D., David Aruna, M.D., Pisinski Leszek M.D., Kleiman Anne M.D.

SUMMARY:

OBJECTIVE:
To report a case of auditory hallucinations which correlated with a temporoparietal lobe lesion
CASE SUMMARY:
A 60 year old woman, left handed, smoker with history of hypertension, treated hepatitis C, status-post left breast excisional biopsy, and status-post femoral atherectomy, complained of vertigo, hypoacusis and hearing high pitched voices. Brain MRI reported a right temporoparietal rim enhancing lesion.
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Following breast biopsy and atherectomy, patient reported sudden hypoacusis, vertigo, hearing voices, specifically, the relentless sound of a young man singing in her ear, "like just Bieber". She also developed inability to tolerate loud music or sounds. She denied headache, nausea or vomiting.
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Brain MRI reported a rim enhancing lesion with chronic hemorrhagic component located in the right temporal operculum with contiguous extension to the right parietal operculum, which in the context of breast carcinoma would be indicative of metastatic lesion, with probable direct spread and leptomeningeal extension. Lumbar puncture ruled out malignancy in cerebrospinal fluid. Electroencephalogram was normal. Three-month follow-up brain MRI demonstrated interval decrease in the size of the lesion, suggestive of an ischemic lesion such as an evolving subacute infarct with hemorrhagic transformation in the absence of interval systemic treatment.
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Patient was given meclizine for symptomatic treatment of vertigo, lamotrigine to prevent seizures, and quetiapine for treatment of the auditory hallucinations.
The vertigo and the auditory hallucinations subsided, and her tolerance and ability to listen to music improved.

DISCUSSION:
Lesions located in temporal operculum and primary auditory cortex could be the cause of abnormal auditory perceptions such as hallucinations. The etiology of the lesion in this case report is still unclear, but is suspected to be ischemic, of embolic origin.
The improvement of the auditory symptoms could be due to shrinking of the lesion and perhaps to the treatment with antipsychoticsÂ Clinicians should consider temporal lobe lesions in the differential diagnosis for patients presenting with new onset of auditory abnormal perceptions.

TREATMENT OF DEPRESSION AND PSYCHOSIS IN HUNTINGTON'S DISEASE, A CASE REPORT

Lead Author: Laura Tait, M.D.
Co-Author(s): Sarah Diekman, M.D., Uma Suryadevera, M.D., Dawn Bruijnzeel, M.D.

SUMMARY:
Huntington's Disease is a progressive neurodegenerative disorder associated with movement abnormalities, cognitive decline, and psychiatric signs and symptoms. This disease follows a Mendelian autosomal dominant inheritance pattern. It is characterized by expansion of variable number tandem repeats (VNTR) with the huntingtin protein's HTT gene, cytogeneticaly located at 4p16.3. Extra CAG repeats in this region lead to the formation of huntingtin aggregates that are implicated in the neuropathology observed in Huntington's cases. Post mortum pathological studies have shown the most significantly affected areas involve the striatal neurons followed next in severity by the cortex. Huntington's Disease demonstrates the genetic phenomenon of anticipation, ie the amount of VNTRs increase with each generation, and as a result, the symptoms of Huntington's Disease are observed at younger ages. The disease is debilitating and is a frequent cause of increased morbidity and mortality. Depression is a common comorbid condition seen in at least thirty percent of the patients with Huntington's Disease and the risk of suicide in these patients is five times higher when compared to the general population. Therefore the aggressive treatment of depression in patients with Huntington's Disease is warranted. We discuss a case report involving a patient with Huntington's disease, who presented with major depressive disorder, suicidal ideation, active auditory hallucinations, and choreaiform movements. We will discuss the various options for the treatment of depression and psychosis in Huntington's patients including pharmacologic interventions and the use of ECT in order to achieve maximal benefit of symptom relief.

DIFFUSION TENSOR IMAGING IN MILITARY BLAST EXPOSURE RESULTING IN MTBI AND PTSD: A CASE REPORT

Lead Author: Nicholas Tamoria, M.D.
Co-Author(s): Ping-Hong Yeh, Ph.D., Terrence Oakes, Ph.D., Geoffrey Grammer, M.D., Gerard Riedy M.D., Ph.D.

SUMMARY:
Introduction: The National Intrepid Center of Excellence (NICoE) offers active duty service members a multi-disciplinary evaluation and treatment program including advanced neuroimaging for Mild Traumatic Brain Injury (mTBI). Mild TBI secondary to blast exposure is the most common TBI injury endured by combat troops deployed to Iraq and Afghanistan. Traditional structural MRI has limited utility in assessing mTBI, but advances in diffusion tensor imaging (DTI) analysis that detects microstructural changes to white matter cortical tracts, may yield greater benefit. DTI offers a sensitive and quantitative potential biomarker by identifying central nervous system pathophysiology and deepening understanding of structure-function relationships in mTBI and psychiatric syndromes.
Case: A 33 year old male Marine with no prior psychiatric or concussive history was exposed to sustained firefights and multiple close blast exposures while deployed to Afghanistan. The blasts resulted in alteration of consciousness for less than 5 minutes but no loss of consciousness. In the weeks after the blasts, he developed chronic migraine headaches, photosensitivity, blurry vision, tinnitus, and vertigo that worsened with stress, sleep deprivation, or sustained loud noise. He also complained of re-experiencing, avoidance, numbing, and hyperarousal symptoms. These symptoms continued more than one year, and he was diagnosed with mTBI and Post Traumatic Stress Disorder (PTSD). Two years after the blasts, he was evaluated at the NICoE for persistent symptoms. 3T MRI of the brain

revealed multiple foci of T2 hyperintensity within the periventricular and subcortical white matter, primarily located in the bilateral prefrontal regions. DTI showed abnormalities in fronto-striatal, fronto-limbic, and fronto-parieto-occipital white matter tracts. A treatment program was developed with consideration of his neurologic injury. Completion of the NICoE program resulted in a significant reduction of 30 points on the Neurobehavioral Symptom Inventory and 29 points on the PTSD Checklist Military Version after 4 weeks.
Discussion: TBI comorbid with psychological health conditions, often referred to as the "invisible wounds of war," is a leading cause of morbidity and disability for combat veterans. DTI may provide a method to detect and quantify these injuries, leading to improved diagnosis and treatment. This case highlights the potential utility of DTI imaging as a noninvasive biomarker for the assessment of combat related mTBI and psychiatric disorders. Additional research is needed to reliably correlate imaging results with cognitive and psychiatric symptoms.

NEUROPSYCHIATRIC MANIFESTATION OF CORONA RADIATA INFARCT

Lead Author: Vikram P. Tanwani, M.B.B.S.

SUMMARY:

Lacunar infarcts are often considered benign as they do not usually cause clinically significant neurological/neuropsychiatric deficits.
In this presentation, we highlight the case of a middle aged female who develop psychiatric symptoms from lacunar infarcts in the corona Radiata ; necessitating in pharmacological intervention.
The possible association of Lacunar infarct in Corona Radiata with neuropsychiatric symptoms may help in dealing with these patients with psychiatric symptoms, more effectively.

CHILDHOOD ABUSE AND ONSET OF PSYCHOSIS IN EARLY ADULTHOOD

Lead Author: Vikram P. Tanwani, M.B.B.S.

SUMMARY:

One of the issues in psychiatry which is often debated ; is whether the stress from having discordant family in childhood can contribute to/precipitate the development of psychosis in adulthood.
We present the case/example of a young female patient whose early life experiences of perceived abuse by parents have culminated into a paranoid disorder /personality and the a possible correlation between these . The patient developed symptoms of paranoid psychosis in early adulthood on the background of significantly unstable/discordant family dynamics and now has started waging a internet warfare against her parents .Psychobiosocial treatments have been making little inroads into her recovery .
This case supports/illustrates the possibility of a relationship between familial discord, with its inherent adverse impact on an individual's sense of security; and the subsequent vulnerability of the individual to develop psychosis in the face of external stressors/challenges.

ROLE OF MICROCYCSTS IN LITHIUM-RELATED END STAGE RENAL DISEASE

Lead Author: Cuneyt Tegin, M.D.
Co-Author(s): Mitesh Patel, M.D., Rifaat S. El-Mallakh, M.D.

SUMMARY:

Background:
Lithium remains the gold-standard of the pharmacological treatment of bipolar disorder. Nevertheless, it has well-known pharmacologically adverse effects, nephrotoxicity being one of the most significant. The molecular mechanisms underlying lithium-induced nephrotoxicity are not as yet established. It is currently understood that lithium induce irreversible direct damage to renal tubuli. Lithium therapy also leads to proliferation and abundant renal cysts (microcysts), commonly in the collecting ducts of the cortico-medullary region.
Case:
A 32 year-old white woman with severe bipolar I disorder for 24 years who has been stable for over 10 years on lithium 1200mg daily and clozapine 600mg daily. Recent depressive symptoms necessitated the addition of lurasidone which was increased to 120mg daily. She has been on these three medications for over 1 year. Routine laboratory testing revealed a stable lithium level (0.8-0.9 mEq/L), blood urea nitrogen (BUN, 12-15 mg/dl), creatinine (1.0-1.1

mg/dl), and estimated glomerular filtration rate (eGFR 70s mL/min/1.73) for years until approximately one year ago when the eGFR dropped into the 50s, with a slight increase in BUN to 18. Concerns about lithium-related kidney toxicity led to decision to taper her lithium. Within one month of reducing the lithium dose to 900mg daily, the patient became more symptomatic with difficulty performing activities of daily living. A magnetic resonance image (MRI) revealed only 3 microcysts on T2 weighted image. The clinical deterioration and the relative absence of microcysts on MRI, led to the decision to maintain lithium at therapeutic dosage, and it was increased again to 1200mg/day. Over the 6 months follow-up after the lithium dose was reestablished, her eGFR returned to 80 ml/min/1.73, creatinine 1.03, BUN, 12, and lithium level 1.0.

Discussion:

Lithium-induced renal disorders can occur such as acute intoxication and chronic nephropathy, with the latter occurring most often after 10â€“20 years of lithium exposure.

Lithium exposure chronic nephropathy can cause microcycts, decreased glomerular filtration rate and eventually chronic kidney disease. Lithium-related GFR drop may warrant lithium withdrawal. This is considered essential in early phases to prevent progression to end stage renal disease.

OLDER PATIENT, YOUNGER DOCTOR: THE UTILITY OF FILIAL TRANSFERENCE AS A VEHICLE FOR 'CORRECTION' OF PERCEIVED PARENTING FAILURE

Lead Author: Aviva Teitelbaum, M.D.
Co-Author(s): Lauren Stossel, M.D., Julie Penzner, M.D.

SUMMARY:

Background: The corrective emotional experience has been maligned and championed. Patients' experiences with younger doctors may evoke affectively-charged filial transferences. These may activate and "correct" a patient's earlier experiences as a parent. Here we report the case of an elderly woman admitted to an inpatient psychiatric unit for psychotic depression and suicidal ideation. She devoted her life to raising children and at the time of her admission, struggled with relinquishing the caregiver role, feelings of rejection from her children, and loss of independence as she aged. Working with two young psychiatric residents elicited filial transferences, contributing to alleviation of symptoms.

Case: Ms. A is a 67 year-old woman with a history of major depression whose presentation was preceded by a several month period living in a subway system. With original intent to suicide by jumping on the tracks, Ms. A surprised herself by finding companionship among other itinerants. She emerged at Christmastime, and was admitted to an inpatient psychiatric unit.

With one and then another resident psychiatrist, Ms. A shared memories of an invalidating mother who rejected displays of emotion and was unreceptive to her physical and psychological distress. Importantly, when Ms. A was in her teens, she became pregnant. The infant was placed for adoption at her mother's insistence and she experienced lifelong guilt over this loss. She strongly identified with her lost child's abandonment as she retreated into the subway system. During her time in the hospital, Ms. A discussed her desire to protect her children in ways her mother had failed to protect her. She assumed a maternal role with the residents, characterized by excessive familiarity, terms of endearment and physical affection. She worried about their health and well-being, like she would for her own child.

The transference provided a vehicle to understand Ms. A's identity as a mother, her guilt at abandoning a baby, and her dismay at feeling unnecessary to her adult children. During changeover from one resident to the other, Ms. A's suicidal ideation returned, allowing for exploration of abandonment fears and dependence.

Discussion: Several studies have identified dependence as a central factor contributing to depressive illness in the elderly. Receiving care from adult children may have negative effects on the psyche of older parents, as it highlights the inability to reciprocate.

Through Ms. A's relationship with her two young doctors, she was able to better understand her own experiences as a daughter and a mother. Her guilt about her maternal inadequacy lessened as she enacted the role of "ideal parent" to her treaters. This facilitated a reconnection with her children during treatment and disposition planning. In this case, the resident psychiatrists were proxies for the patient's own children, allowing her to explore

themes of attachment, abandonment and perceived parental failure.

'IRRITABLE BEYOND BELIEF' : TEMPORAL LOBE GLIOMA RESECTION AND LEVETIRACETAM: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Paul Thisayakorn
Co-Author(s): Paul Thisayakorn, M.D., Isabel Schuermeyer, M.D.

SUMMARY:

Background and Method: High grade gliomas are malignant progressive brain tumors presenting with headache, seizure, and neurological deficits. Frontal and temporal lobe lesions may impair emotion and behavior. In addition, the surgical and medical management of brain tumors can cause neuro-psychiatric adverse consequence. Herein, we present a case of a patient with temporal high grade gliomas who underwent tumor resection, received Levetiracetam and later developed remarkable irritability. Literature regarding irritability and aggression from brain tumor and Levetiracetam are reviewed.
Case report: 32 year-old female presented with progressive fatigue, and short term memory loss. The brain MRI suggested a diffuse glioma involving the middle and inferior temporal gyri. Levetiracetam 500 mg twice a day was initiated for seizure prophylaxis and she gradually developed several affective symptoms including poor emotional control, and difficulty tolerating frustration.
Tumor resection was performed and the lesion was found to be an anaplastic oligodendroglioma. Levetiracetam was continued after the surgery. At one point, the patient was in rage that consisted of screaming, damaging objects, and striking at her husband. Neuropsychological testing demonstrated mild dysfunction on executive function, and a tendency toward aggressive behavior. The decision was made to stop the Levetiracetam which resulted to the partial improvement of the irritability. Lamotrigine 50 mg twice a day and escitalopram 20 mg daily were started. Despite the medication adjustment, the irritability still persisted but at a lower intensity.
Conclusion: This case report demonstrates severe, uncontrollable emotional change-irritability and aggression, likely secondary to a combination of post-surgical temporal lobe lesion and Levetiracetam. Surgical resection is the major treatment modality in malignant glioma and there are reports of adverse neuro-psychiatric symptoms including aggression and irritability particularly in temporal and frontal lobe tumors. Levetiracetam is widely used for seizure prophylaxis and post-surgical seizure treatment because of its favorable properties such as effective seizure control, simple regimen, and limited life threatening side effects. Unfortunately, levetiracetam has several behavioral effects such as agitation, depression, emotional lability, hostility, and psychosis.
Overlapping of emotional impairment as the side effects of brain tumor resection and Levetiracetam is observed in this case. We hypothesize that there are synergistic adverse effects from both treatment modalities which might worsen the patient's clinical symptoms. The consultant psychiatrist should be aware of this possible adverse outcome when evaluating patients with brain tumors. Further observational study is required for elucidating the synergistic adverse effect of brain tumor resection and Levetiracetam.

NMDA-RECEPTOR ENCEPHALITIS AND HODGKIN'S LYMPHOMA: A CASE REPORT

Lead Author: Olli Toukolehto, M.D.
Co-Author(s): Nicholas A. Tamoria, M.D., David A. Williamson, M.D.

SUMMARY:

CASE REVIEW:
25-year-old Caucasian man presented with disorganized behavior, agitation, and intermittent mutism. He was initially diagnosed with delirium tremens, but his symptoms rapidly progressed to psychosis and catatonia. Treatment with antipsychotic medications and benzodiazepines did not improve his symptoms. Diagnostic workup (MRI, EEG, and routine laboratory tests) was without acute findings. CSF results revealed pleocytosis and treatment with IVIG and methylprednisolone was initiated for presumed encephalitis.
By week 3, specialty testing revealed anti-NMDA receptor antibodies in the CSF. Treatment over the subsequent month with cyclophosphamide and rituximab led to significant improvement in symptoms and mental status (Mini-Mental State Exam score of 22/30). However, during week 9, the patient

experienced an acute manic episode which led to an additional two month hospitalization.
In the outpatient setting, quetiapine and valproic acid was continued for the next two years because attempts to remove these medication led to severe irritability and impaired impulse control. Oncology workup had been negative; however, 26 months after symptom onset the patient presented with new onset of cervical adenopathy. Ultrasound guided biopsy revealed classical Hodgkin's Lymphoma (Stage IIA), which was treated with standard chemotherapy with a favorable response.
Further observation will be needed to determine if the treatment of this patient's lymphoma will result in improvement or resolution of his residual encephalitis-related neuropsychiatric symptoms.
DISCUSSION:
Glutamate is an excitatory neurotransmitter in humans with two general categories of receptors: ionotropic transmembrane receptors (i.e. N-methyl-D-aspartate (NMDA)) and metabotropic G-protein-coupled receptors (i.e. metabotropic glutamate receptor 5 (mGluR5)). Glutamate receptors can be inappropriately expressed in neoplastic cells (i.e. teratomas and Hodgkin's Lymphoma), which may result in the production of autoimmune antibodies. When autoantibodies bind to glutamate receptors in the brain, neuronal signaling can become disrupted and result in encephalitis with varying clinical presentations.
Anti-NMDAR encephalitis continues to gain increasing clinical attention due to its multitude of neurological, cognitive, and psychiatric symptoms. More recent case studies have also reported that autoantibodies against the mGluR5 receptor can result in limbic encephalitis and "Ophelia Syndrome" (consisting primarily of psychiatric symptoms, i.e. impaired memory, emotional lability, hallucinations, and agitation).
CONCLUSIONS:
Patients with autoimmune encephalitis who present with predominant psychiatric symptoms may be misdiagnosed and not receive appropriate medical treatment. Anti-NMDAR and possibly anti-mGluR5 encephalitis should be considered by psychiatrists when treating patients with atypical symptoms, especially in the presence of known or suspected neoplasm.

ORTHOSTATIC HYPOTENSION AFTER FIRST DOSE OF QUETIAPINE EXTENDED-RELEASE: A CASE REPORT AND CLINICAL PEARLS

Lead Author: Sumi Treesa Cyriac, M.D.
Co-Author(s): Pankaj Lamba M.D., Nabila Farooq M.D., Bakul Parikh M.D.

SUMMARY:

INTRODUCTION:
Here we present a case report on orthostatic hypotension after the first dose of quetiapine extended-release (XR). We discuss the case in an attempt to raise awareness of this serious adverse effect which has been described in several studies of quetiapine immediate release (IR). We also describe a few clinical pearls on the pathophysiology, recognizing the risk factors and management.
CASE REPORT:
Ms. A, a 40-year-old female was admitted with complaints of depressed and anxious mood, sleep difficulty, poor appetite and suicidal thoughts. The history was significant for affective disorder. However, she reportedly was not taking prescription medications or over the counter medications at the time of admission. No substance abuse or medical problems were identified during admission and vitals were recorded as within the normal range. She was prescribed quetiapine XR 50 mg and gabapentin 300 mg. Both drugs were used off-label to treat insomnia, anxiety while being further evaluated for bipolar depressive episode. The patient had an episode of near syncope next morning. Orthostatic hypotension secondary to a quetiapine XR was diagnosed.
DISCUSSION:
Adequate autonomic response, mediated by postsynaptic alpha 1-adrenoceptors on vascular smooth muscle cells, and acceleration of heart rate, which is mediated by postsynaptic myocardial beta 1- adrenoceptors is required for maintenance of blood pressure after postural changes. The increase in systemic vascular resistance is attenuated by the alpha 1-adrenoceptor-blocking properties of antipsychotics leading to symptoms of orthostatic hypotension and tachycardia.
The risk of orthostatic hypotension is further increased in patients with disorders of the autonomic nervous system, fluid imbalance and those taking concomitant drug therapy that affects haemodynamic tone. We believe, our patient's very lowâ€“normal (<120 mm Hg) SBP of 86 mmHg on admission, may have been a risk factor. However, she had not reported

dizziness, lightheadedness, generalized weakness and was not taking another medication.
Literature review suggest that prospective monitoring for changes in postural blood pressure is important because patients with psychiatric disorders often do not articulate symptoms of orthostasis and the subjective report of dizziness does not correlate well with orthostatic blood pressure changes.
We did not come across a report comparing the IR to XR. Given the median time to Cmax (tmax) values are 5 and 2 hours for quetiapine XR and IR. It's important to recognize that orthostatic changes due to XR preparation could be delayed by several hours, as seen in this case.
CONCLUSION:
Orthostatic hypotension is a very serious side effect and it's advisable to start patients on the smallest dose, slowly titrate the medication, and advise monitoring for orthostatic vitals when changing the dosage.The report also begs the question if we should promote the off-label use of quetiapine.

PSYCHOSIS AND EATING DISORDER

Lead Author: Adil Tumbi, M.D., M.P.H.
Co-Author(s): David H. Tiller, M.D., Phebe Tucker, M.D.

SUMMARY:

Background: Patient with eating disorders can present with psychotic symptoms and comorbid psychotic disorders. Extensive research has focused on eating disorders and their comorbidity with mood, anxiety and substance use disorders.[1]However, limited research on eating disorders and their relationship to psychosis shows that presence of psychosis or eating disorders can lead to later developing the other disorder.[2,3]We report an interesting case of a patient with a diagnosis of anorexia nervosa who presented with psychosis and delusions.
Clinical case: 27 yr old male with a diagnoses of anorexia nervosa who presented to an outside hospital for altered mental status after sustaining a fall. Labs on initial work-up were blood glucose level: 34, platelets: 227,000, Na: 127, K: 2.3 and albumin 2.3. EKG showed QTc of 613. CT abdomen showed left lower lobe pneumonia and pneumoperitonium. Pt subsequently required an exploratory laparotomy, PEG tube placement, intubation and chest tube placement for pneumothorax. Patient was transferred to our facility for further management of these complications. His hospitalization was complicated with respiratory failure requiring re-intubation X 2, refeeding syndrome, progressive thrombocytopenia, and a PEG tube leak. Patient also had anasarca due to malnutrition, reverse takotsubo with an EF of 30% and stage 2 decubitus ulcers on his coccyx and right buttock. Psychiatry was consulted to evaluate anorexia nervosa. Patient was severely malnourished with a BMI of 11.4. He believed that he had "cancer eating his insides", a long-standing delusion that family reported dated back to high school, when he developed a stomach ulcer. Since then, he complained of pain when eating and swallowing. He started becoming increasingly paranoid about food ingestion, and subsequently lost 100 pounds over two years. Family also reported that patient had started becoming reclusive and would not leave the house. He had a remote but not current history of recreational substance use. He had not received any past psychiatric treatment. On mental status examination: patient was lethargic, extremely cachectic, sunken eyes, temporal wasting, delusion of "cancer eating his insides", disorganized thought process, and limited insight and judgment. Psychiatry team recommended starting him on olanzapine orally disintegrating 2.5 mg PO daily for psychotic symptoms, once the platelet count was > 60,000 . During the hospital course, patient started improving medically, with his thought processes and delusions also improving. Olanzapine orally disintegrating dose was increased to 5mg po bid and he was discharged home with outpatient psychiatric follow-up.
Discussion: It is a diagnostic dilemma to diagnose an eating disorder when there is an underlying psychotic disorder, and vice versa. The psychosis, which may be contributing to be eating disorder, can go unrecognized.The case demonstrates underlying psychosis can lead to eating disorder.

CEREBRAL VENOUS THROMBOSIS PRESENTING WITH PSYCHIATRIC SYMPTOMS

Lead Author: Aghaegbulam H. Uga, M.D.
Co-Author(s): Shreedhar Kulkarni M.D., Vineka Heeramun M.D., Dorcas Adaramola M.D., David Resch M.D.

SUMMARY:

A 25 year female with no past psychiatric history and two months post-partum presented to the emergency room with history of difficulty with communication and altered mental status of sudden onset. In the morning of presentation, she sent text messages to friends and family with words that they could not understand. Mental status examination in the ER showed altered mental status and word salad. Psychiatry consult was ordered. During evaluation, CT of brain showed subarachnoid hemorrhage in the temporal region while MRI confirmed cerebral venous thrombosis involving the left transverse sinus. The patient was treated with and improved on heparin.

THE MASQUERADE OF MYASTHENIA GRAVIS

Lead Author: Aghaegbulam H. Uga, M.D.
Co-Author(s): Rajesh Sadasivuni, M.D., Sheila Thomas, M.D., Chenelle Joseph, M.D., David Resch, MD.

SUMMARY:

Myasthenia gravis (MG) is an autoimmune neuromuscular disease manifesting with fluctuating muscle weakness and fatigue, caused by circulating antibodies to acetylcholine receptors and can be difficult to diagnose on occasions. We present a clinical case of MG which posed a diagnostic difficulty.
The patient is a 62 year female with no past medical history admitted with one month history of progressively worsening dysphagia and dysarthria. She denied odynophagia, nausea or vomiting. She also did not have weakness of any other muscle groups previously or at the time of presentation. She did not have any family history of gastroenterological disorder, amyotrophic lateral sclerosis or myasthenia gravis. She had no history of tobacco, alcohol or illicit substance use. Physical examination did not reveal any neurological deficits. Gastroenterology consult was obtained and the patient had esophagogastroduodenoscopy which showed nonspecific hiatal hernia and duodenitis. She had a percutaneous endoscopic gastrostomy (PEG) tube placement during which she developed respiratory distress requiring brief period of intubation in the intensive care unit following which a neurology consult was obtained. A series of repeated physical and neurologic examination including continuous repetitive limb movements revealed progressive weakness of the limbs. Further testing revealed high anti-acetylcholine receptor antibody. She was treated with plasmapheresis with complete resolution of dysphagia and dysarthria. She was discharged on prednisone and azathioprine.
This case demonstrate the different ways the MG can present making diagnosis difficult and warrants a high index of suspicion and detailed physical examination to avoid unnecessary procedures and reduce complications.

THE USE OF METFORMIN TO COUNTERACT CLOZAPINE-INDUCED METABOLIC SIDE EFFECTS-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., Rachel Hess, MS4.

SUMMARY:

Introduction: Clozapine has been the most effective medication in treatment resistant schizophrenia. However, with this exceptional medication also comes with 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 the phase 3 of the CATIE schizophrenia trial, those who took prolonged periods of clozapine reported weight gain, 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 was stabilized so patient could be maintained on clozapine. Learning Objectives: To determine the effectiveness of metformin in negating the adverse metabolic side effects. Case: 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 50 mg TID; divalproex sodium 1250 mg q12 hours, haloperidol 20 mg BID and benztropine 2 mg q 12 hours. However, she continued to have disorganized thoughts, auditory hallucination, episodes of agitation and aggression. The decision was made to give her clozapine. She was started on metformin 500 mg BID with meals. Her initial weight was 77.1 kg (171 lbs), BMI 29, Glucose 84 mg/dl and triglyceride was 90 mg/dl. Clozapine was slowly titrated

upward. She gained 1.3 kg after 3 weeks after starting clozapine. However, her metabolic panel was WNL. Her HbA1c was 5.2%, glucose 80 mg/dl, and triglyceride was 52 mg/dl. Metformin was increased to 850 mg BID with meals after 3 weeks. During the latter 3 weeks, the metformin was increased to 1000 mg BID with meals to maximize stabilization. At the end of 6 weeks, her weight was 79.2 kg (174 lbs), BMI 32 and glucose 93 mg/dl. Clozapine was 150 mg q 12 hours at the end of 6 weeks. Her psychotic symptoms decreased. She became more logical, had decreased auditory hallucinations and decreased agitation. Discussion: During the initial 3-week period, she demonstrated slight weight gain. Metformin was increased to correct the effects of medication's side effects. Her weight continued to increase a minimal rate at the end of 6 weeks. In a total of 6 weeks, pt gained 3 pounds. Moreover, her glucose, triglyceride and HbA1c continued to be WNL during the 6-week period stabilizing her metabolic effect. Conclusion: One of the challenges faced by clinicians today is dealing with adverse side effects from long-term anti-psychotic 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 evidence based intervention needed to fight medical complications from long-term anti-psychotic side effects.

HOUSE CALLS: INITIATION OF TELEPSYCHIATRY AND TELEPSYCHOTHERAPY WITH AN ESTABLISHED PATIENT

Lead Author: Carlos E. Velez, M.D., M.S.
Co-Author(s): Clark Terrell, M.D., Louise O'Donnell, Ph.D.

SUMMARY:

OBJECTIVE
Telepsychiatry and telepsychotherapy are modalities that extend the reach of the patient encounter beyond the office setting. This can facilitate continuity of care in situations where meeting face to face is impractical, such as when patient and physician are in different cities. However, in setting up a tele-encounter, the physician must be mindful of several factors, including: existing practice guidelines regarding telemedicine; known efficacy of remote- versus in-person meetings; and regulations vis-Ã -vis liability and reimbursement.
METHODS
Telepsychiatry was initiated with an existing patient at the residency training psychotherapy clinic at the University of Texas Health Science Center at San Antonio. The patient was followed by telephone, for both med-management and therapy, by a resident trainee under the supervision of faculty in the Department of Psychiatry. Prior to initiation, institutional clearance was obtained with regard to liability coverage. The patient and resident physician met weekly by telephone, with in-person meetings every two months. Symptomatology was followed, including the use of rating scales. Medication management was eventually transitioned to the patient's local PCP, however psychotherapy and longitudinal follow-up of symptomatology continued as discussed.
RESULTS
The patient was transitioned to weekly telephone sessions, with bimonthly meetings in person. The patient's anxiety and depression improved both by report and per rating scales; however, symptoms of ADHD worsened slightly. Stimulant medication was not refilled remotely, but rather prescribed by the patient's PCP. Antidepressant medication was refilled remotely once, after which it too was prescribed by the PCP. The patient remained appropriate for outpatient level of care throughout, at no point requiring consideration of inpatient management.
CONCLUSIONS
Telepsychiatry and telepsychotherapy can be successfully initiated with existing patients. Telephone follow-up may facilitate continuity of care and a smooth transition of medication management to a local prescriber. Liability issues and reimbursement policies should first be considered. Thought should also be given to the patient's ability and motivation to follow up as scheduled, both remotely and in person.

DEAD OR ALIVE - A CASE REPORT OF COTARD'S DELUSION AND LITERATURE REVIEW

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

SUMMARY:

Cotard Delusion usually presents in patients with Mood Disorders, Psychosis or Medical illnesses like stroke,and brain tumors. It is a rare psychiatric syndrome first described by Jules Cotard, as Nihilistic Delusional Disorder or Cotard Syndrome. Patient usually complains of having lost their possessions, status and strength, but also their heart, blood and intestines.
Case Report- Patient was 46 year male, who stated that he had not been able to sleep for "110 hours". "It is scary, they have eaten my hands, I can not see my hands. I have already died 2 days ago". He says that he has demons inside of him and they are eating away his body. He endorses auditory and visual hallucinations. He was paranoid and said " They are watching me". He talked about death and dying, and also suicidal ideation without any plans. He denied homicidal ideation. He mentioned that he stopped taking his iloperidone about 2 months ago.
Treatment: Electroconvulsive Therapy has been described as treatment of choice. A review of literature shows that Atypical Antipsychotics have been efficacious in treating this delusion. Patient in our case study responded to Anti-psychotic treatment. He responded to oral Olanzapine.

EFFECTIVENESS OF ECT IN DEPRESSED PATIENT COMORBID WITH POSTTRAUMATIC STRESS DISORDER

Lead Author: Hang Wang, M.D., Ph.D.
Co-Author(s): Lori Moss, M.D., Nutan Atre-Vaidya M.D.

SUMMARY:

Post-traumatic stress disorder is a highly prevalent mental health problem, characterized by avoidance behaviors, physical hyper-arousal, and re-experiencing symptoms following exposure to a traumatic event. United States military veteran at higher risk developing PTSD than general population, the lifetime prevalence of PTSD is estimated at 19%. Major depression has been associated with stressful life event and frequently co-occurring with PTSD. Comorbidities often results in greater symptom severity, significant impairment in social and occupational functioning and quality of life. ECT is the most effective treatment for mood disorder. However ECT has not been shown to be effective in treatment of PTSD although studies are limited, most ECT clinical trial excludes patients with PTSD. Our study was conducted through medical chart review on ECT treated patients from 2006 to 2012. Based on data analysis, we found mood disorder improved with ECT independent of comorbidities with PTSD.

HYPONATRAEMIA ASSOCIATED WITH BUPROPION AUGMENTATION IN TREATMENT RESISTANT DEPRESSION: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Aaron J. Wiggins, M.B.B.S.
Co-Author(s): Thangam Balasubramanian, MBBS

SUMMARY:

Bupropion is a non tricyclic antidepressant usually reserved as an augmentation strategy for treatment resistant depression. Hyponatraemia secondary to Syndrome of Inappropriate Antidiuretic Hormone Secretion (SIADH) is a well-recorded adverse event observed in elderly patients on antidepressant treatment. It is most commonly associated with selective serotonin reuptake inhibitors (SSRIs), although has also been reported with other antidepressants such as serotonin and noradrenaline reuptake inhibitors (SNRIs) and tricyclic antidepressants (TCAs). Bupropion acts by the selective inhibition of the neuronal reuptake of noradrenaline and dopamine, having minimal effect on the reuptake of serotonin.
We report on a case of hyponatraemia secondary to bupropion initiation in a 70 year old female patient with treatment resistant depression. The patient had a 10 year history of a recurrent depressive illness and had been admitted to a psychogeriatric unit with a recent relapse. Her treatment prior to admission had been escitalopram 30mg daily, quetiapine 400mg at night and lamotrogine 75mg twice daily. Five days after bupropion was commenced, her serum sodium had dropped from within normal range to 123 mmol/L. Urine sodium and osmolality were 24 mmol/L and 353 mmol/L respectively. Serum osmolaity was 279 mosm/kg. TSH was within normal range at 1.99 miu/L. Nursing staff had also reported the patient appeared to be acting confused over the preceding few days. Bupropion was ceased and within two days her serum sodium had reentered normal range at 133mmol/L.

Our patient developed clinical evidence of hyponatraemia, i.e. confusion, three days following commencement of buproprion. Subsequent investigations were consistent with a likely diagnosis of SIADH. We identified three prior cases of hyponatraemia associated with bupropion. Two of these cases found features of SIADH on biochemistry underlying this change, and one demonstrated a reoccurrence of hyponatraemia on bupropion rechallenge. No medication rechallenge was attempted with our patient given what was considered as a clear time line existing between development of hyponatraemia, commencement of bupropion and subsequent confusion. Bupropion is a strong inhibitor of CYP2D6 which is involved in the metabolism of many SSRIs and TCAs. Concurrent administration of Bupropion and these medications may increase their serum concentration and subsequent toxicity.
Our case and subsequent literature review suggest that hyponatraemia association with bupropion is likely the result of disrupted metabolism of concurrent medication rather then bupropion itself. We would suggest serum sodium being checked prior to and monitored after commencement of bupropion, especially in elderly patients where multiple medications and other risk factors for hyponatramia are likely to be present.

THE INTERFACE OF TOXICOLOGY AND PSYCHIATRY: ON THE FRONT LINES OF POISONING AND OVERDOSE

Lead Author: Bryce Wininger, M.D.
Co-Author(s): Jennifer Schreiber, M.D.

SUMMARY:

Background: Poisoning and overdose are frequent, serious triggers for consultation to a psychiatric service. In fact, it is estimated that poisonings account for 1-5% of all general hospital admissions nationally, with widely varying outcomes and dispositions--admission to the intensive care unit, general medical floor, or inpatient psychiatry; or death in hospital. Toxic exposures are also major causes of delirium, as well as all too common methods for suicide attempt. Common agents of ingestion include benzodiazepines, acetaminophen, antidepressants, and alcohol. The following clinical case will illustrate the role a psychiatric consultant can play in cases of overdose, particularly in a setting without in-house toxicology services.

Case: Ms. A.E. is a 16 year old girl with a history of ADHD and depression, who was transferred from an outside hospital to Georgetown University Hospital's (GUH) pediatric intensive care unit (PICU) after overdose with unknown doses of bupropion, fluoxetine, melatonin, multivitamins, and citalopram, with subsequent seizure. Her mother found A.E. flushed, rigid, and diaphoretic on her bed. The patient then experienced a seizure episode as the mother was calling 911. She was brought to a nearby community hospital and the National Capital Poison Center was alerted.
A.E. was then transferred to the GUH PICU, where the psychiatry consultation team was contacted. By that time, she was found to be delirious, with visual hallucinations and agitation. Her QTc had prolonged to 483 milliseconds. She had received several doses of haloperidol by IV on an as-needed basis. The psychiatry team contacted the Poison Center for updates--toxicology experts had not been involved in the case since the initial presentation to the outside hospital's emergency room. The differential included serotonin syndrome plus dopaminergic surge caused by the mixture of SSRIs and bupropion. The psychiatry team advised the PICU to continue cardiac monitoring, obtain EKGs frequently, check creatine kinase, and replace haloperidol with lorazepam. The next day, the patient's sensorium began to improve and her QTc slowly normalized. At the recommendation of the psychiatry team, A.E. was later transferred to an inpatient child and adolescent psychiatric unit for focused mental health care.
Discussion: It is a well known phenomenon that psychiatric consultants are often involved from the earliest stages of management in cases of poisoning and overdose. What is not clear is the impact that mental health experts can have upon outcomes in such cases. With this project, I intend to explore the role psychiatrists can play during the acute management phases in cases of poisoning and overdose. Specifically, I will be looking at how outcomes are impacted in terms of assessment; gathering collateral information; managing psychotropics; family dynamics; liaising with primary teams; and assisting in navigating the next steps for these patients.

TOO RISKY? WHO DECIDES?

A CASE OF STIMULANT USE IN A PATIENT WITH A CARDIAC HISTORY AND HYPERTENSION

Lead Author: Christine Winter, D.O., M.B.A.
Co-Author(s): Margaret McKeathern, M.D.

SUMMARY:

Introduction:
Stimulants are a standard of treatment for Attention Deficit Hyperactivity Disorder in both adults and children. However, the use of stimulants in cardiac patients has been historically considered to be of a greater risk than benefit. Studies in healthy patients have demonstrated both increases and decreases in heart rates and blood pressures during stimulant treatments. The question to be answered is: Can the risks of a cardiac patient be mitigated to allow for the benefits of treatment with a stimulant?
Case:
The patient is a 36 year old male with a psychiatric history of Attention Deficit Hyperactivity Disorder and Post Traumatic Stress Disorder with chief complaints of difficulty with concentrating, irritability, and insomnia. He was previously treated with short acting stimulants with good benefit. He suffered an idiopathic thoracic aortic aneurysm with spontaneous dissection requiring emergent repair in January 2009. He underwent a David's procedure but continues to struggle with hypertension, aortic stenosis, and a bicuspid aortic valve. This patient presented to the Adult Behavioral Health Clinic requesting to restart stimulant treatment as he and his wife believe that the benefits of the treatment outweigh the risks associated with his cardiac and vascular history.
Results:
The patient and his wife partook in numerous appointments to discuss his understanding of the risks of the requested treatment and treatment options. He was agreeable to lifestyle changes to minimize lifestyle risks and participated in monitoring of heart rate and blood pressure both with and without stimulants to determine his personal risk with the stimulants. He was found to have a baseline uncontrolled hypertension that was addressed with medication modifications. This patient was able to realize a lifestyle benefit with a stable dose of long acting stimulants while addressing his cardiac issues.
Discussion:
The risk versus benefit question is common in medicine and is often overlooked in psychiatry. Physicians make treatment decisions on a daily basis with preset standards of care that at times conflict with the patent's desires. The patient's best interest is classically referred to in these cases and in many situations the treatment varies from that which is desired. In this case, the patient's understanding of the risks was clearly identified and he was able to provide specific descriptions of the perceived benefits. This case is a situation that required a closer look at the risk-benefit ratio from the patient's perspective rather than the usual physician's standard of care.

USE OF ELECTROCONVULSIVE THERAPY IN ADOLESCENTS WITH TREATMENT-RESISTANT DEPRESSIVE DDSORDERS: A CASE SERIES

Lead Author: Naista Zhand, M.D.

SUMMARY:

Objectives: This study aimed to present a comprehensive case series of adolescents who received electroconvulsive therapy (ECT) for treatment-resistant depression.
Methods: Conducting a chart review, we identified 13 adolescents who had ECT for treatment of depression in the past five years (2008-2013) at a Canadian tertiary care psychiatric hospital. Details about participants' clinical profile, index course ECT sessions, outcome, side effects and comorbidities were extracted and analyzed.
Results: Thirteen adolescents aged 15-18 years, received a mean of 14 (SD, 4.5) ECT sessions per patient. Based on the Beck Depression Inventory-II (BDI-II) at baseline, during and after treatment with ECT, a reliable improvement was observed in 10 patients, with three achieving full recovery. Through mixed effects linear modeling we found a decrease of 0.96 points (95% CI, -1.31 to -0.67, $p<0.001$) on the BDI-II total score for every ECT treatment received. The Montreal Cognitive Assessment (MoCA) was used for monitoring of cognitive function throughout the treatment. Adverse effects included transient cognitive impairment (n=11), headache (n=10), muscular pain (n=9), prolonged seizure (n=3), and nausea Â± vomiting (n=3).
Conclusion: A clinically significant improvement was observed for 10 (77%) adolescents receiving ECT for treatment-resistant

depression. These observations suggest that ECT is a potential treatment option for refractory depression in selected adolescents. More data are needed to draw conclusions about efficacy and possible predictors of treatment response.

PYROTHERAPY FOR THE TREATMENT OF PSYCHOSIS IN THE 21ST CENTURY: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Zachary D. Zuschlag, D.O.
Co-Author(s): E. Baron Short, M.D., M.S.C.R., Callie J. Lalich, M.D.

SUMMARY:

The idea that fevers can improve the condition of certain medical and psychiatric diseases is a concept that dates back to the time of Hippocrates. Over the centuries, it has been observed that fevers and infectious agents have been beneficial for a broad spectrum of diseases including neurological conditions such as epilepsy, and psychiatric illnesses including melancholy and psychosis. The interest in the concept of fever as a treatment for disease, termed pyrotherapy or pyretotherapy, peaked in the late 1800's and early 1900's thanks to the Nobel Prize winning work of Julius Wagner von Jauregg for his studies with malaria therapy for general paralysis of the insane, now more commonly known as neurosyphilis. The use of inoculating infectious agents for their fever inducing effects in the treatment of neurosyphilis quickly spread throughout the world, and by the 1920's it was considered by many to be the treatment of choice for neurosyphilis, as well as other psychotic diseases. However, with the discovery of penicillin for the treatment of syphilis, coinciding with the advent of convulsion-oriented practices for the treatment of psychotic disorders including electroconvulsive therapy and insulin coma; pyrotherapy soon lost favor among psychiatrists and since the 1950's has been largely overlooked by the scientific community. In this poster, the authors provide a literature review of the history of pyrotherapy and present a case report of a woman with schizoaffective disorder and severe psychotic symptoms who experienced a remarkable resolution of psychotic symptoms following an episode of sepsis with high fever.

THE TROUBLE WITH TJ: SEPARATING JUVENILE BIPOLAR DISORDER AND ATTENTION DEFICIT HYPERACTIVITY DISORDER

Lead Author: Muhammed Puri, M.D., M.P.H.
Co-Author(s): Roaya Namdari, MS III

SUMMARY:

Juvenile Bipolar disorder is accepted as a diagnosis in children; however, there is much debate regarding the diagnostic criteria. The difficulty in diagnosing juvenile bipolar disorder stems in part from the high association of comorbid conditions, namely attention deficit hyperactivity disorder (ADHD). Several of the diagnostic criteria for ADHD overlap with those of juvenile bipolar disorder, making it difficult to distinguish one from the other. Recent surveys were developed as a screening tool to distinguish pre-pubertal and early adolescent bipolar disorder from ADHD. The results showed that a key differentiating diagnostic factor that favors the diagnosis of juvenile bipolar disorder over ADHD is hypersexual behavior.

Objective: Our goal is to identify the difference in clinical presentation of juvenile bipolar disorder from attention deficit hyperactivity disorder as these disorders demonstrate high comorbidity. The purpose of this case report is to recognize hypersexual behavior as a key distinguishing diagnostic factor that supports juvenile bipolar disorder. Early separation of JBD and ADHD is critical in determining the appropriate pharmacological and therapeutic management for adolescents.

Method: A literature search via Google Scholar on the topic of hypersexual behavior in adolescents.

Conclusion: Juvenile bipolar disorder has a high comorbidity with ADHD making the diagnosis difficult. A screening questionnaire has been developed to separate ADHD from JBD. A key distinguishing feature of juvenile bipolar disorder is a child who presents with hypersexual behavior.

SUDDEN ONSET PSYCHOSIS: A CASE OF CEREBELLOPONTINE ANGLE TUMOR AND ACUTE PSYCHOSIS

Lead Author: Muhammed Puri, M.D., M.P.H.
Co-Author(s): Justin Pratt, Ryan Cappa, Syed Maududi

SUMMARY:

Psychosis is a symptomatology with a multifactorial pathophysiological basis. It is well documented that space-occupying lesions are a potential cause of psychotic symptoms, particularly in patients with acute development1.
We present a case of a 74-year-old Hispanic lady who was transferred to our facility after presenting with acute onset auditory hallucinations, paranoid delusions and altered mental status. Magnetic resonance imaging (MRI) revealed a 1.2cm lobular contrast enhancing mass at the right cerebellopontine angle (CPA) compatible with right vestibular schwannoma.
A literature review reveals multiple case reports of acute onset psychosis associated with schwannomas located at the CPA. In one report the patient's symptoms were treated with atypical antipsychotics (risperidone) with resolutions of psychotic symptoms over the course of a month2. Another report showed symptom resolution after surgical removal of the schwannoma with no return of symptoms upon discontinuation of antipsychotics3. It has been hypothesized that psychiatric symptoms result from CPA lesion compression of structures in the limbic pathways, resulting in impairment of normal neural circuits. In conclusion, our case with MRI findings enhances the current literature regarding psychosis that may be correlated with CPA schwannoma.
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CANADIAN PHYSICIANS' ATTITUDES TOWARDS ACCESSING MENTAL HEALTH RESOURCES

Lead Author: M. Selim Asmer, M.D.

SUMMARY:

In discussing the burden of Mental llnesss in the general population, the mental health needs of Physicians are at times overlooked. Due to recent changes in the healthcare landscape, physicians have an increasingly demanding task of excelling in clinical, academic, and managerial roles [1]. However, despite their rigorous training, studies have shown that physicians experience higher rates of mental illness, substance abuse, and suicide compared to the general population [2]. Only recently have we begun uncover the burden of mental health concerns among Canadian physicians. However, little is known about what proportion of these individuals seek help, and what barriers might prevent or delay physicians from doing so.
The aim of our study was to assess the attitudes of physicians across all specialties if they wereto become mentally ill around the topics of disclosure and treatment. Barriers to disclose one'smental illness can include a variety of factors, including fear of stigmatization, concerns about
career implications, mixing doctor/patient roles, and confidentiality.

CAREGIVER EDUCATION ON INPATIENT DELIRIUM

Lead Author: Anna K Beasley, M.D.
Co-Author(s): Kristin V. Escamilla M.D.

SUMMARY:

A consult psychiatrist receives many cases regarding identification and management of delirium in a patient who is admitted for medical/surgical inpatient care.. Caregivers are often included as part of the treatment plan for someone who is acutely delirious, but often time they have minimal if any understanding of what delirium is and how to help. Clinicians often note difficulties in helping caregivers gain an understanding of delirium due to a caregiver's distress and unfamiliarity with this diagnosis. Providing education on delirium in a loved one is integral in optimizing a patient's treatment and may lead to better outcomes. This challenging topic has led us to propose establishing a formal educational regimen to promote learning in this local population. We hypothesize that providing educational materials to caregivers of delirious patients will increase their understanding of this condition and lead to lower levels of distress with improvements in a patient's overall treatment experience and outcome(s). Methodology will be to distribute this material to a randomly

selected group derived from a population which includes those which have been diagnosed as having delirium per the psychiatry consult team and via clinical assessment using the Confusion ICU (CAM-ICU) exam and have consenting care givers assisting them during their hospital stay. A pre-intervention survey will be provided and after the educational experience, a post-intervention survey will be collected. The placebo group will include patients whose caregivers are surveyed without intermediate inform process is provided. In addition, data on total hospital length and CAM-ICU positive days will be gathered to assess associated outcome(s).
â€‹Data will be collected throughout the academic year at two local hospitals and administered by the same resident/fellow(s) throughout. This project's overall goal is to focus on improvement in understanding by caregivers who serve this patient population in hopes to decrease their associated distress and simultaneously lead to decrease patient morbidity and better overall outcomes related to their treatment while in the hospital as well as thereafter.

CIGARETTE SMOKING BEHAVIORS AND PERCEPTIONS AND USE OF ELECTRONIC E-CIGARETTES AMONG VETERAN AFFAIRS (VA) PATIENTS WITH NICOTINE DEPENDENCE

Lead Author: Harmony R. Abejuela, M.D.
Co-Author(s): Grace Chang, M.D., M.P.H.

SUMMARY:
Background: Nicotine use remains a prominent public health concern. The physiological and psychological dependence on nicotine, negative effects of nicotine withdrawal, and the non-nicotine sensory, behavioral, and socialization cues that reinforce smoking behaviors have made attempts to quit smoking largely unsuccessful. Cigarette use remains higher among people in the military than the general population, with estimates up to 30.8% versus 19%, respectively. Electronic or e-cigarettes were introduced to the U.S. in 2007 as a strategy to quit smoking. E-cigarettes are battery-powered devices that convert nicotine to an inhaled vapor. Neither regulated nor approved by the FDA for smoking cessation, e-cigarettes' efficacy and long-term safety are largely unknown. Nonetheless, their popularity and sales have skyrocketed. Marketed heavily as safe and offered in a variety of flavors, e-cigarettes' potential to increase and/or cause addiction in otherwise non-smoking populations are among the new public health concerns. This pilot study aims to review smoking behaviors and e-cigarette perceptions and use among VA patients with nicotine dependence. Methods: A 40-item questionnaire, with assessment of current and past cigarette use, and the Fagerstrom Test for Nicotine Dependence was given to 15 patients enrolled in a residential substance use program at the VA Boston Healthcare System. Data were analyzed using the SAS statistical package [version 9.3]. Results: Demographics are as follows: mean age range was 41 years [range, 25 to 66], 80% male, smoking an average of 0.77 packs per day, for an average of 20 years. The mean Fagerstrom Test results was consistent with moderate dependence. Patients reported that 87% attempted to quit with 73% reported quitting cold turkey as the most frequent and successful method. The main reason for resumption of smoking was stress [46%], cited by more women than men [100% versus 34%, p = 0.08]. While all patients heard of e-cigarettes [76% from other people], only 53% have ever tried them. Among those who have not tried them, 73% wanted to do so. More than half [53%] believed that they are healthier than regular cigarettes and would try them if provided by the VA. 40% believed that e-cigarettes would make quitting smoking easier and faster as opposed to other smoking cessation methods. Conclusion: Despite public knowledge of its negative health outcomes, cigarette smoking behaviors persist and remain a public health concern particularly in the VA setting. Patients who have not tried e-cigarettes seem largely unaware of their potential safety risks, lack of regulation and oversight by the FDA, and potential to reinforce continued smoking behaviors. Majority of patients are open to trying e-cigarettes if it is provided by the VA or another insurance company. Primary care physicians and psychiatrists need to educate and provide information to their patients on the latest research on e-cigarettes' efficacy and safety.

CLINICAL CHARACTERISTICS AND OUTCOMES OF PATIENTS WHO SUBMIT 72 HOUR LETTERS

Lead Author: Diana Cozma, M.D.

Co-Author(s): Panagiota Korenis, M.D., Vivien Gutierrez, M.D., Ali Khadivi, Ph.D., Katya Frischer, M.D.

SUMMARY:
Historically physicians were allowed to make determinations regarding the length of and course of treatment for psychiatric patients. Legislation, case law and deinstitutionalization have afforded patients the right to request a court hearing to review their request for discharge and their decisions regarding the course of their treatment. In New York State, the civil commitment statute requires that a patient who has been admitted to a psychiatric hospital, and who requests to be released in writing be notified of the hospital's decision to go to court and retain him or be released within 72 hours of this request. This written request is called a "72-hour letter". Patients discharged from the hospital by the judge are leaving against medical advice. The purpose of this study is to investigate the prevalence of discharges leaving against medical advice from a psychiatric inpatient unit in an inner city community hospital in New York City. The study will examine the characteristics of the patients who request to leave the hospital. This retrospective case controlled study will examine all patients who submitted a 72 hour letter from January 2014 to June 2014 at Bronx Lebanon Hospital. This poster will describe the demographic and clinical characteristics of patients who request to leave the hospital. This group of patients will be compared to a random group of patients hospitalized during the same time period who did not make a request to leave the hospital. We hypothesize that leaving subsequent to a 72 hour letter is associated with lack of social support, poor insight and no follow up in outpatient care.

USE OF VIDEO GAME TECHNOLOGY AS AN EARLY INTERVENTION TOOL FOR YOUTH EXPERIENCING PSYCHOSIS AND CONCURRENT SUBSTANCE USE

Lead Author: Alexandra Douglas, M.D.
Co-Author(s): Brian Cooper; Suzanne Archie, M.D.

SUMMARY:
Youth experiencing early signs of psychosis may have difficulty articulating their symptoms and accessing mental health resources. The purpose of our research is two-fold; By designing a first person video game that allows the player to experience symptoms of psychosis, we hope it can be used as an effective simulation tool to open up discussion between clinicians and youth as well as to increase awareness and understanding of the link between marijuana use and psychosis and where to access help in the community. In order to ensure the video game is applicable and effective, we wish to pre-test the video game with both youth and those who have experience with substances and/or psychosis. With feedback provided from interviews and focus groups, we hope to develop an effective resource for health care professionals working with youth, substances, and mental illness. Method: to day 8 individual interviews have been conducted with first-episode patients with prior experience with substances and psychosis, with an additional 2 interviews scheduled in the near future. Each participant played the video game prototype and provided feedback on content, game-play, and relevance to youth. Ten pre-test knowledge-based questions were completed by each participant before playing the game, and repeated at the end of the game to evaluate the base level knowledge of the participants and educational value of the game. An additional two youth focus groups are scheduled to take place, similar to the individual interviews, participants will play the prototype and provide feedback. Results: 5 of 8 participants enjoyed playing the video game, 6 of 8 were willing the play the game against once it was ready to be piloted. General feedback was that the game would be an effective tool. Invaluable feedback was obtained in regards to game-play and content; the most common difficulties being that all players were unable to complete the task of locating a computer password, as the instructions were not clear, and all players enjoyed the basketball mini-game. 6 of 8 players felt the game was a realistic portrayal of what they had experienced. Conclusion: Though still in its infancy, our video-game holds the potential to be an effective tool in youth experiencing symptoms of psychosis and substance use/abuse counseling.
Note: further research will be conducted between submission of this abstract and the APA conference; we plan to include data from subsequent focus group on the poster presentation.

INVISIBLE TO UNTOUCHABLE: THE CHALLENGES OF PSYCHOSOCIAL OUTREACH TO INTERNALLY DISPLACED WOMEN IN BOGOTA, COLUMBIA

Lead Author: Zelde Espinel, M.A., M.D., M.P.H.
Co-Author(s): James M. Shultz, M.S., Ph.D., Helena Verdeli, Ph.D., Luis Jorge Hernandez Flores, M.D., Ph.D., Ricardo Araya, M.D., Ph.D., Yuval Neria, Ph.D., Fredysha McDaniel, M.D., Ana Claudia Andrade

SUMMARY:

Background. We are piloting an evidence-based stepped-care mental health intervention program entitled, OSITA: "Outreach, Screening, and Intervention for Trauma for Internally Displaced Women Living in BogotÃ¡, Colombia." OSITA is testing the feasibility of recruiting female internally displaced persons (IDPs); screening them for common mental disorders (CMDs); presenting psycho-education tailored to the screening results; providing sessions of interpersonal psychotherapy (IPT) for those who have moderate symptom elevations; and referring those with severe symptoms to emergency psychiatric consultation. OSITA has found that innovative multi-strategy outreach approaches must be used to effectively seek, recruit, provide services, and retain IDPs. Invisible: One problem is that Colombian IDPs masquerade as a hidden population; there are no clearly demarcated venues that are populated exclusively by IDPs. Untouchable: A second problem is that IDPs have recently been designated a "protected class" of citizens; government agencies now restrict access to IDPs.
Methods. OSITA is engaged in multi-pronged outreach approaches in order to capture the target population of women IDPs. Approaches include: 1) Direct community outreach: Outreach to homes of women IDPs who have been pre-identified and who currently receive services from mobile health teams based at public hospitals. 2) Recruitment through IDP registration centers. 3) Outreach based on client referrals identified from partner hospital databases. 4) Outreach using the community network of primary care clinics. 5) "Snowball referral" from women IDPs: Women IDPs are employed in OSITA. They have been "task-shifted" to screen and provide IPT counseling. 6) Outreach to women IDPs with children in special pre-schools. IDP mothers are recruited as they drop off and pick up children at pre-schools with a high proportion of IDP families. 7) Outreach via non-governmental organization (NGO) programs for special populations of IDPs. 8) Outreach to clients served by the Department of Social Prosperity. Outreach via referrals from a national government department - with a large IDP clientele â€“ with programs focusing on family well being. 9) Outreach based on referrals from university research programs with IDP participants.
Results. OSITA has developed a monitoring system for tracking contacts, scheduled and completed appointments, screening results, referrals to IPT, completed IPT sessions, CMD symptom resolution, and referrals for emergency evaluation. Data from the first 8 months of the implementation period will be available, analyzed, and presented to demonstrate the relative success and efficiency of each outreach modality.
Conclusion. OSITA is experimenting with an innovative and multifaceted approach to outreach to a geographically dispersed and protectively shielded population of IDP victims of armed conflict in BogotÃ¡.

YOGA IN THE YARD: ASSESSING THE ADDITION OF A THERAPEUTIC YOGA PRACTICE TO THE STANDARD OF CARE ON AN INPATIENT PSYCHIATRIC UNIT

Lead Author: Candace Giles, M.D.
Co-Author(s): Aminata Cisse, M.D.

SUMMARY:

Therapeutic yoga, a low-cost intervention, has been shown to decrease symptoms of anxiety and depression in the mentally ill. At public mental health institutions, however, there are limited recreational/therapeutic activities offered to patients due to financial constraints. This study will assess the addition of a therapeutic yoga practice to the standard of care in a public trust hospital inpatient forensic unit over a three-month period. We hypothesize that yoga practice will decrease anxiety and aggression. We will assess baseline and post-yoga treatment of self-reported anxiety using the Hamilton Anxiety Scale, and assess change in aggression by comparing the nursing reports of aggression incidents in the three month pre- vs. post-implementation of yoga practice. . Participants will include 16 males and females,

18 years of age or older, with a variety of DSM-5 psychiatric diagnoses such as psychosis, mood and personality disturbances.

IMPLEMENTATION OF AN INTEGRATED WOMEN'S PREVENTIVE HEALTH SERVICE ON AN INPATIENT PSYCHIATRIC UNIT IN SAN FRANCISCO

Lead Author: Monique James
Co-Author(s): Christina Mangurian M.D., Rebecca Jackson, M.D., Emily Lee, M.D., James Dilley, M.D.

SUMMARY:

Background:
People with severe mental illnesses (SMI) die over 20 years earlier than the general population. Their increased morbidity and mortality are largely due to treatable medical conditions, and unfortunately, inadequate access to medical care. Women with SMI in particular, are an especially vulnerable population as there has been evidence they have higher rates of unsafe sexual behavior, lack regular sexually transmitted infections (STI) and/or contraceptive health education, and have lower rates of pap smear screening. This is particularly concerning for safety net populations who have additional risk factors including low socioeconomic status.

Objectives:
-To create a "women's mini clinic" on one urban, safety net hospital's inpatient psychiatric unit to provide women's preventive health screenings, exams, and procedures.
-To create a safe sex educational group for all of these inpatients.
- To study feasibility of implementation and preliminary measures of efficacy of this hospital-based project.
Methods:
After literature review, women's health baseline data was collected at the hospital, San Francisco General Hospital (SFGH). Then, a workgroup was formed consisting of residents, attendings, nurses, and administrators from both Psychiatry and Ob/Gyn. Through a collaborative process assessing both need and feasibility, the workgroup decided to focus on women's preventive health screenings in the form of pap smears, STI testing, and contraceptive health and counseling. Through the workgroup process, a pilot weekly "women's mini clinic" staffed by an Ob/Gyn healthcare provider on the inpatient psychiatric unit was developed. This 3-month-long pilot clinic would provide pap smears, STI testing, and contraceptive health and counseling, and would be supplemented by a weekly safe sex education group open to all admitted psychiatric patients. The pilot study would be assessed for feasibility of implementation, specifically the proportion of admitted women, ages 21-65, who were seen in the mini clinic. The primary preliminary outcome measure will be pap smears. The number of women receiving a pap smear over the past three years will be compared between the pilot period and one year earlier.
Results:
Although the final report is pending, we will summarize the feasibility of implementation, utilization of the pilot mini clinic and education groups by the patients, preliminary efficacy outcome measures, limitations, and reflections on improvements to continue this resource.
Conclusions:
Providing women's preventive health screening, and safe sex education is vital for the overall general health of all women psychiatric patients. As there is often inadequate access to general healthcare amongst populations with SMI, this pilot program is one mechanism to improve women's health in an integrative care model.

A TECHNOLOGICAL SOLUTION TO BARRIERS IN OUTCOME MEASURES IN RURAL PSYCHIATRY

Lead Author: Suni N. Jani, M.D., M.P.H.
Co-Author(s): Suni Jani, M.D., M.P.H., Sonia Dogra, Jeremy Todd, B.S., Raja Jani, M.H.A., Sushma Jani, M.D., Niranjan Jani, M.D.

SUMMARY:

Background: Healthy People 2010's analysis of mental health care limitations in rural regions found major depression rates in some rural areas significantly exceed those in urban areas, and teens and older adults in rural areas have significantly higher suicide rates than their counterparts in urban areas. There is a shorter period of time allotted for rural psychiatrists to see patients as only one quarter of the rural population in America has access to a psychiatrist. Given the success of e-screening, we hypothesized rural clinics would be able to more effectively measure practice outcomes and improve treatment planning by having

patients of a rural mental health clinic complete screening questionnaires prior to their evaluation by allowing the psychiatrist to have a validated assessment tool to support their clinical reasoning despite the short amount of time allocated for patient care.
Methods:
-Population: CBH consists of six clinics serving 1500 adults and children in a geographical area spanning 200 miles staffed by 8 psychiatrists.
-Inclusion: Rural clinic patients of all ages with an ability to use a computer for a survey
-Exclusion: Intellectual disability or difficulty with technology due to visual or cognitive limitations
-Patients answer DSM-5 cross cutting screening tool questions and World Health Organization Disability Assessment Schedule 2.0 (WHO DAS 2.0) online while in the clinic waiting area. This data is encrypted and automatically added to the EMR and generates trends in patient's chart that are part of their medical record.
Results:
-Clinician reports of usefulness for diagnosis, trending relapse and remission, and quality of care compared to previously seeing patients without the tool
-Changes in treatment planning by relying on objective data
-Patient perception of improved wellness with the WHO DAS 2.0
Discussion:
-Incorporating psychiatric self-assessment tools as a part of e-screening in the waiting room allowed patients to be more involved in their care and guide the clinical direction of the brief follow up visit for practitioners
-The results of the self-assessment tools also proved to have future research value as the patient's medication, age, adverse effects, and adherence could also be tracked alongside their symptoms
-Advantages: clinical suspicion with limited time to get a history helped by screening tool responses, research opportunity for rural clinics that otherwise have difficulty advocating for their patient needs or assessing necessary changes in practice, patients become more aware of aspects of their history relevant to mental healthcare, graphs in medical record allow patients to see objective evidence of their treatment as it relates to other factors, teaching utility for residents in rural clinics who are adjusting to patient volume with limited time
-Limitations: adherence, access to technology, technology malfunction, risk of relying too much on a tool

PRELIMINARY EVALUATION OF A 'FLEXIBLE, GUIDED COGNITIVE BEHAVIOUR THERAPY SELF HELP INTERVENTION' FOR CRISIS RESOLUTION & TCM TEAM CLIENTS

Lead Author: Rupinder Johal, M.B.B.S.
Co-Author(s): Farooq Naeem, MBBS, MRCP, MSc., Tariq Munshi, M.D., David Kingdon, M.D., Khalid Saeed, M.D., Christopher Bowie, M.A., Ph.D., Muhammad Ayub, MBBS, MRCPsych, MSc., M.D., Dianne Groll, Ph.D.

SUMMARY:

Background
The Crisis Resolution and Transitional Case Management (CRTCM) teams are now a well established part of the mental health systems in many countries. The CRTCM Teams generally deal with clients in crises, as well as support clients whose needs are not complex enough to require admission. There is some research evidence to suggest that the presence of these teams can reduce admission rates in the general adult psychiatry population. Cognitive Behaviour Therapy (CBT) has research evidence for a variety of emotional and mental health problems. However, currently availability of CBT is restricted due to limited resources. Even when CBT can be provided, clients might have to wait for a long time. The provision of CBT is even more limited in Canada.
Aim of the study
This is a preliminary study to test the effectiveness of a "flexible guided CBT (fgCBT)" self help intervention" for CRTCM clients.
Objectives
The primary objective of this study is to see whether fgCBT intervention can reduce symptoms of common mental disorders (depression, anxiety, OCD, PTSD etc.) among clients attending the CRTCM Services. The secondary objectives include measurement of change in disability and to gather information to help us in conducting a larger RCT in future.
Study design
This is a preliminary study using a Randomized Control Trial (RCT) design and is being carried out in local CRTCM service. Study participants are randomly assigned to two groups. The intervention group (IG) receives intervention

while the control group receives treatment as usual (TAU). We aim to have 20 clients in each arm of the study. WHODAS 2.0 (World health organization disability assessment schedule 2.0), HAD (Hospital anxiety and depression scale) and CORE (Clinical outcomes in routine evaluation) rating scales are filled by the participants during initial and final assessments. Statistical analyses would be carried out using an intention to treat. Analyses will be carried out using SPSS v16. A t test will be used to compare groups, both paired and un-paired. SPSS frequency and descriptive commands will be used to measure descriptive statistics. SPSS explore command will be used to measure normality of the data, using histograms and Kolmorogov Smirnov test. A linear regression will be used to compare the two groups at two time points.

Inclusion and exclusion criteria

All the CRTCM clients are eligible for inclusion, except, those with excessive use of alcohol or drugs and significant cognitive impairment.

The intervention

The intervention consists of "flexible guided self help CBT" manual, provided by trained mental health professionals for clients under care of the CRTCM. Intervention will consist of 6-9 sessions per client.

Desired Outcome

Improvement in mental health of the CRTCM clients

Results

Results of this part of the study will be published in international journals and conferences.

INCIDENCE OF DELIRIUM IN AN ACUTE INPATIENT PSYCHIATRIC SETTING. A RESIDENT RUN QUALITY IMPROVEMENT PROJECT AT A COMMUNITY HOSPITAL

Lead Author: Bashkim Kadriu, M.D.
Co-Author(s): Bashkim Kadriu, M.D., Maria Reynoso, M.D., Ifeoma Nwugbana, M.D., Vahid Nikzad, M.D., Ronak Patel, M.D., Paulina Reiss, M.D., Amina Ali, M.D., Kucheria, Mallika., M.D., Mohammad Mashayekh, M.D., Vahid Nikzad, M.D., Rahul Patel, M.D., Ramon Pineyro, M.D., Panagiota Korenis, M.D., Mohamed Eldefrawi, Vicente Liz, and Jeffrey M. Levine, MD, FACP

SUMMARY:

OBJECTIVES: To appraise prospectively the incidence of delirium in an acute psychiatric inpatients setting and to identify risk factors for delirium in acutely psychiatric population.

METHOD: The subjects were newly admitted and those in the inpatient floor identified as high risk for developing delirium at the inpatient Psychiatry Floor. We used the Confusion Assessment Method (CAM), the Mini-Mental State Examination (MMSE) and The Montreal Cognitive Assessment (MoCA) to identify incident cases of delirium.

RESULTS: Of 65 admissions to the hospital unit, 39 subjects provided informed consent, out of which 31 were not delirious at the time of admission and 8 of them tested positively on CAM. There were total of 5 newly diagnosed cases of delirium over two months follow-up period, as team carefully evaluated and excluded three patients from the pile as clinical picture was not related to delirium but directly impacted by the acute psychosis or low IQ. Thus, our preliminary results show relatively higher incidence rate of ~7.7% that previously reported, therefore our team is dedicated to continue the project prospectively and have thorough analysis of the causes of delirium in acute psychiatry setting. In addition, our preliminary analysis suggests that the positive CAM score was correlated with low MMSE and MOCA score.

CONCLUSIONS: Delirium is quite uncommon in the psychiatric inpatient population. However, date suggest that not rarely diagnosis of delirium is missed or misdiagnosed for acute psychosis (hyperactive delirium state) or depression (hypoactive delirium state). The incidence rate reported here may be useful as a perspective tool for the identification of excessive rates of delirious state in acute inpatient psychiatric settings and/or other patient population including medical and surgical once.

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UNDERSTANDING THE MULTIPLE VULNERABILITIES OF HOMELESS YOUTH: RESULTS FROM AT HOME/CHEZ SOI

Lead Author: Nicole Kozloff, M.D.
Co-Author(s): Vicky Stergiopoulos, M.D., M.Sc., Amy Cheung, M.D., M.Sc., Vachan Misir, M.Sc., Paula Goering, Ph.D.

SUMMARY:
Objective:
Given the significant limitations of existing literature on homeless youth with mental disorders, we sought to examine demographics, clinical characteristics, and service utilization patterns in a large national sample.
Methods:
Using baseline data from the At Home/Chez Soi field trial, a Mental Health Commission of Canada 4-year study of over 2000 homeless people with mental disorders across 5 cities, we calculated descriptive statistics for 164 youth age 24 and under, specifically: 1) demographics including housing history, 2) rates of mental disorders and physical illness, and 3) service utilization. We then used logistic regression models to examine predictors of 3 service use variables, namely, having a regular medical doctor, feeling they needed help and did not receive it, and number of emergency room (ER) visits.
Results:
The youth enrolled in At Home/Chez Soi had been homeless for a mean of 26.1 months. Less than one-quarter had completed high school. Over half had a current depressive episode, nearly half had psychotic symptoms, and nearly three-quarters had a concurrent substance use disorder. Over 86% had experienced at least 1 adverse childhood experience (a measure of childhood trauma). Almost half reported having been diagnosed with a learning disability. Less than half had a regular medical doctor; of the socio-demographic and clinical characteristics examined, none were significantly predictive in a multivariate model. Almost half had not received health care when they needed it, with this risk increased by being female or other and diagnosed with drug use disorder and decreased by being an ethnoracial minority in a multivariate model. Over 60% had visited an ER in the past 6 months with a mean of 1.72 Â± 2.89 visits for the sample of youth. In a multivariate model, having been diagnosed with a learning disability, having a drug use disorder and having needed help and not received it were associated with a higher number of ER visits.
Conclusions:
This sample of homeless youth demonstrated multiple vulnerabilities, including high rates of mental health symptoms and substance use disorders, childhood trauma, low education, learning disabilities, and inadequate, sporadic medical service use. Programs geared towards homeless youth should take these individual characteristics and service use patterns into consideration to better serve this vulnerable population.

THE PSYCHIATRY OF ENTREPRENEURSHIP: MENTAL WELLNESS AS A CORE ELEMENT OF INNOVATION

Lead Author: Ryan K. Louie, M.D., Ph.D.

SUMMARY:
Entrepreneurship and the venture start-up process provides opportunities for innovation, growth, and new value creation. Intrinsic to the start-up ecosystem, are characteristic cultural norms of behavior and psychosocial stressors which present mental health concerns for participants of entrepreneurial activities. This poster will describe some key features of the psychiatry of entrepreneurship, including: the paradoxical nature of entrepreneurship in relation to mental health, the assessment of current un-met needs and the knowledge landscape of the field, and the foundations for an ethical innovation framework that includes mental health as part of the start-up effort, for both individuals and for their endeavors. Communities can be inspired by each other's talents and empathy, to innovate new mental wellness networks. The multi-disciplinary dialogue between entrepreneurship and psychiatry promotes mutual learning and exchange, and reveals the translational principle that the start-up of ventures may share much in common with the start-up of the self.

INSTAGRAMMABLE: HOW #BINGE SEARCHES REVEAL SELF HARM AND ANOREXIA IMAGERY ON A POPULAR SOCIAL MEDIA APPLICATION

Lead Author: Holly Peek, M.D., M.P.H.
Co-Author(s): Holly Peek, M.D./M.P.H., Arshya Vahabzadeh, M.D.

SUMMARY:

Social media is popular among teens, with the posting of photos and videos as one of the most popular activities. Instagram, a picture-based social media platform with over 100 million users, is the top photo sharing outlet, with 1 in 10 teens visiting the site each month.
However, there is growing concern that some users of social media experience negative mental health effects. Social media sites have been shown to elicit high levels of self-disclosure which include references to unhealthy behaviors such as anorexia, bulimia, self harm and suicide. Eating disorder related posts on Instagram are particularly popular, as social media has become a forum for users to support one-another's destructive behaviors and allow for instantaneous sharing of photos and messages promoting unhealthy and dangerous habits.
The influence of eating disorder related content posted on social media is concerning, particularly for adolescents as they frequently imitate behaviors of their peers. Because of increased rates of disturbing imagery promoting anorexia and bulimia, Instagram has made a policy of removing such images. Given these concerns, we performed an exploratory study that analyzed the content of the eating disorder related hashtag "#binge" and Instagram's policy of removing dangerous and disturbing content.
Methods:
A search on Instagram was created using the search term "#binge" and a content analysis was performed on the first 100 resulting images. Images were categorized and the total number of "likes" per image was calculated.
Results:
The analysis revealed the following:
21% self harm/suicide
21% anorexic appearing pictures of bodies
18% positive or helpful messages
12% sinister images/slogans
12% Food
10% Benign images
6% Substance abuse
1,482 Total "likes," 14 average "likes" per image
The images contained a female person in 45% of cases, while a male was seen in only 3%. The remaining images did not involve a human.
Discussion:
Our results indicate that Instagram's policy of removing images that "urge users to embrace anorexia, bulimia, or other eating disorders; or to cut, harm themselves, or commit suicide" is ineffective. Searching the term "#binge" reveals that a majority of the images promote destructive behaviors such as food restriction, starvation, purging, or self-harm, with few resources for help. This is particularly disturbing because anorexia has a mortality rate 12 times higher than any other cause of death in anorexic women ages 15 to 24. Instagram heightens exposure to eating disorders and has the potential to amplify these behaviors with a constant stream of visual messages that foster obsessions, comparisons, and competition as users are seeking, gaining approval for and modeling behaviors. Given the growing popularity of social media among youth, we must engage with social media networks and the wider public to ensure that these issues do not go unnoticed and attempts are made to remedy them.

CLINICAL CHARACTERISTICS OF ASSERTIVE COMMUNITY ACT PATIENTS WHO ARE REPEATEDLY HOSPITALIZED

Lead Author: Maria Reynoso, M.D.
Co-Author(s): Panagiota Korenis, M.D., Katya Frischer, M.D., Vahid Nikzad, M.D., Joe Baez, M.D., Ali Khadivi, Ph.D.,

SUMMARY:

Assertive Community Treatment (ACT) is a community based approach to mental health service first created during the inception of deinstitutionalization in Wisconsin. ACT is a community based approach to mental health whereby patients are visited in their home by a team of mental health professionals across all disciplines including: psychiatrists, nurses, social workers and vocational specialists. Generally, those that are referred to ACT programs are considered a high risk population that have demonstrated difficulty complying with outpatient psychiatric appointments in a more classic office based setting which has

resulted in significant noncompliance, subsequent psychiatric decompensation and an increase in hospital readmissions. The ACT team, based at Bronx Lebanon Hospital Center serves a predominantly African American and Hispanic, economically disadvantages, patient population. The ACT Team serves approximately 60 patients referred to them by the hospital inpatient services and elsewhere. The objective of the study is to study the clinical characteristics of ACT patients who are repeatedly hospitalized. We will conduct a retrospective case control study of patients who were enrolled in ACT services at Bronx Lebanon Hospital Center from January 1, 2012 through December 31, 2013. We hypothesize that active substance use, not being prescribed long acting injectable medication and social support instability are associated with a higher rate of hospitalizations and an increased length of stay. Patients who have been psychiatrically hospitalized three or more times will be compared to patients who have been hospitalized fewer than two times. Data will be collected by reviewing the patients' AOT charts and the Electronic Medical Record at Bronx Lebanon Hospital Center. The poster will present descriptive data that characterizes these two groups of patients. Clinical implication of the findings will be discussed.

FATHERS MENTAL HEALTH

Lead Author: Benjamin Rosen, M.D.
Co-Author(s): Andrew Howlett, M.D. FRCPC

SUMMARY:
Mental illness in fathers is vastly underidentified and undertreated. Research shows that approximately 1 in 4 men suffer from mental illness at some time in their life and an estimated 10 % of fathers develop postpartum depression. Consequences of unidentified depression can be serious, and in men the suicide rate is up to 4 times higher compared to the rate in women. In terms of service provision, there are 13 Canadian academic institutions that offer specialized women's mental health services in contrast to 0 programs that specialize in fathers' mental health. Part of this discrepancy reflects the challenge of engaging fathers. Men are less likely to seek mental health services than women. There are a myriad of reasons why men don't seek help. Barriers of stigma, inaccessibility of services and lack of expertise around how to engage men are a few examples. This means that many fathers are suffering in silence. Given the extent of the problem, the negative impact untreated mental illness can have on parental involvement and child development and the lack of services that are both accessible and father-centric, there is a clear need for investment in research and innovation to improve mental health services for fathers. This project aims to characterize how depression might gain expression differently in men compared to women.

PERCEPTIONS OF TRADITIONAL HEALING FOR MENTAL ILLNESS IN RURAL GUJARAT

Lead Author: Julie Schoonover, B.A.
Co-Author(s): Samuel Lipkin, B.A., Munazza Javid, B.A., Anna Rosen, M.D., Mehul Solanki, M.S.W., Sandip Shah, M.D., Craig Katz, M.D.

SUMMARY:
Introduction

Despite the significant toll of mental illness on the Indian population, resources for patients are often scarce, especially in rural areas. Traditional healing has a long history in India and is still widely utilized, including for mental illnesses. However, its use has rarely been studied systematically.
Objective
This study aimed to determine the perspective of patients, their families, and healthy community members towards faith healing for mental illness, including the type of interventions received, perceptions of its efficacy, and overall satisfaction with the process. We also sought to explore the range of care received in the community and investigate possibilities for enhancing mental health treatment in rural Gujarat.
Methods
49 subjects were interviewed in July 2013 at Dhiraj General Hospital and in 8 villages surrounding Vadodara. A structured qualitative interview elicited attitudes towards faith healing for mental illnesses and other diseases. Qualitative analysis was performed on the completed data set using grounded theory methodology.
Findings
Subjects treated by both a doctor and a healer overwhelmingly would recommend a doctor over a healer. Almost all who were treated with medication recognized an improvement in their

condition. Many subjects felt that traditional healing can be beneficial and believed that patients should initially go to a healer for their problems. Many also felt that healers are not effective for mental illness or are dishonest and should not be used.
Conclusions
Subjects were largely dissatisfied with their experience with traditional healers, but healing is still an incredibly common first-line practice in Gujarat. Because healers are such integral parts of their communities and so commonly sought out, collaboration between faith healers and medical practitioners would hold significant promise as a means to benefit patients. This partnership could improve access to care and decrease the burden of mental illness experienced by patients and their communities.

IMPACT OF THE AFFORDABLE CARE ACT ON PSYCHIATRIC PATIENTSâ€™ ACCESS TO CARE AT A CALIFORNIA UNIVERSITY HOSPITAL EMERGENCY ROOM.

Lead Author: Alexis A. Seegan, M.D.
Co-Author(s): Deena Shin McRae, M.D., Bharath Chakravarthy, M.D.

SUMMARY:

Prior to implementation of the affordable care act, an estimated 20% of adults with psychiatric illness in California lacked health insurance. When the Affordable Care Act (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 ACA, the number of providers and hospital beds in the state has not grown along with the numbers of persons seeking care. Over 84% of emergency room physicians in the US 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 uninsured, to highlight the continued barriers faced by low-income persons seeking psychiatric care.

THE ROLE OF PREVENTATIVE PSYCHOEDUCATION IN LGBT ADOLESCENTS

Lead Author: Neeral Sheth, D.O.
Co-Author(s): Elizabeth Kaiser, M.A., Niranjan S. Karnik, M.D., Ph.D.

SUMMARY:

BACKGROUND: Despite recent advances for LGBT (lesbian, gay, bisexual, and transgender) Americans, an indisputable disparity in mental health remains in this population. Unfortunately, the most vulnerable of this stigmatized group are adolescents who have just begun to develop their identities. Suicide is the leading cause of death among LGBT youths and recent studies suggest that suicidality may be twice as prevalent in this population when compared with their heterosexual peers (1). The aims of this study were to 1) determine whether adolescents considered a LGBT-specific psychoeducational intervention to be valuable for LGBT youth, and 2) evaluate changes in professional help-seeking attitudes as a result of this intervention.
METHOD: One-hundred high school students in the Chicagoland area between 14-19 years of age were surveyed for this study. Students received a 45 minute psychoeducational presentation on mental health issues pertaining to the LGBT population. Afterwards, students were asked to fill out anonymous questionnaires regarding the presentation.
RESULTS: All students, regardless of sexual identity, felt the intervention to be beneficial for LGBT adolescents. All students also felt they were more likely to seek mental health support for themselves, friends, or family as a result of the intervention. Additionally, it was found that participants who did not identify as straight were more likely to have had some experience regarding mental illness involving themselves, friends, or family. Participants who did not identify as straight were also more likely to have been previously educated about LGBT- specific mental health concerns.
CONCLUSIONS: Recent studies show that improving mental health literacy can be an important tool for encouraging professional help-seeking attitudes in young adult populations (2). Nevertheless, there has not

been much research on the outcomes of psychoeducational interventions with LGBT adolescents. As this study shows, LGBT-specific psychoeducation can be helpful in encouraging positive help-seeking attitudes. This could ultimately be a tool used to decrease suicide attempts in this highly-marginalized population, though more research is needed to determine this.

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BRIDGES TO MENTAL HEALTH: PARTNERING WITH AN AFRICAN AMERICAN CHURCH IN THE FORMATION OF A FIRST-RESPONSE HEALING TEAM

Lead Author: Elisa Simon

SUMMARY:

Integration of care is a major element of the recently passed Affordable Care Act. Although implementation details have yet to be defined, it may include mobilizing community-based organizations to increase access to care for underserved people. Foundational in Community Psychiatry is recognizing strategic partners in the community and engaging them to build programs that address the mental health needs of the population. One such ally is the church.

Historically, the African American church has been a de facto social service provider for its own members and the wider community. In times of crisis, congregants turn to their pastor or other church-mates for guidance and support, when they would be reluctant to seek professional help. Faith-based health programs have been identified all over the United States and have been shown to lead to better health outcomes.

This paper will describe the partnership developed over a period of two and a half years between a psychiatry resident in a busy city hospital and a large African American Protestant congregation in the Bronx. A key success factor in this collaboration is the development of a strong, trust relationship between the psychiatry resident as a consultant and the minister as well as lay leaders of the church. The process involved a series of meetings to crystallize the vision of the Pastor to have a trained group of laity that will become the "Church First-Response Healing Team" (CFRHT). This was followed by focus group discussions with select members to identify common mental health issues and training needs for the team. Upon approval by the Church Board, a 12-hour training course covering a broad array of clinical topics was conducted by the psychiatry resident over a six-week period. The aim of training is to equip volunteers to be able to address needs of individuals suffering acute psychological distress, identify emergencies and be able to make appropriate referrals if needed. Another round of meetings was held to further clarify the framework of the CFRHT Ministry, its mission statement, purposes, initial members and its relationship with existing church structures. After obtaining final approval from the Church Board, the CFRHT was presented to the general congregation.

To date, the ministry, under the supervision of the pastoral team, has fifteen members divided into five groups. Monthly meetings to discuss cases are facilitated by the psychiatry resident. The complex challenges, barriers overcome, resources utilized, the outcome and implications for future endeavors will be discussed in this paper. This collaborative work may be considered to satisfy the ACGME requirements for residents to have community psychiatry experience. Far beyond a mere training requirement, being in the presence of individuals who have a deep level of compassion and commitment to help others without any recompense has been an enriching, gratifying and humbling experience.

PARENTS EXPERIENCE OF A CRISIS ASSESSMENT LINKAGE MANAGEMENT UNIT FOR CHILDREN IN NEED OF URGENT PSYCHIATRIC EVALUATION

Lead Author: Igor Tatarintsev, D.O.

SUMMARY:

During the past decade, there has been an increased demand for psychiatric services particularly in emergency departments (EDs) and psychiatric hospitals. The Ohio State University (OSU) Wexner Medical Center experienced this regional and national trend with a steady growth in number of psychiatric patients. In 2013, there were 4825 psychiatric evaluations in the ED, and this near double-digit growth led to long wait times in a busy ED setting and delay in much needed care. To meet this increased demand a psychiatric observation unit called the Crisis Assessment Linkage Management Unit (CALM) was opened as part of the university psychiatric hospital in October 2013. Services provided include psychiatric assessment, crisis stabilization, daily direct psychiatric care by adult and child/adolescent psychiatrists, as well as medical evaluations by hospital consult teams. Treatment begins while in CALM and until discharge to an inpatient unit or to home with linkage to community mental health services.

About 19% of psychiatric patients seen in the ED are less than 18 year old. Due to low bed capacity for children psychiatric admissions, a large number of them (70%) are transferred to CALM. To determine how access to this new type of service for mental health care was received by the families, we devised a survey for parents/guardians during their child's stay in the CALM unit. The survey assessed rating of the quality of environment, experience with staff, and overall satisfaction, with comparison between ED and CALM experiences.

The ED environment can be stressful for patients, and having a child in need of urgent psychiatric evaluation represents a potentially traumatic experience for the parents. The three main identified factors that influence patient satisfaction in EDs are staff interpersonal skills, provision of information, and perceived waiting times (Taylor & Benger, 2004). The top expectations by parents from ED child visits for mental health are help/guidance for child, assessment/evaluation/diagnosis, and health care professional resources (Cloutier et al, 2010). The high levels of satisfaction found in our survey for CALM may be related to the fact that it provides all these elements. Crisis care is often the entry point to access psychiatric services for families, and their positive experience is important for treatment follow-up. We expect that CALM provides not only improved care for the patients during their stay but that the high level of satisfaction with the system will contribute to the continuation of care.

RISK COMMUNICATION AND MENTAL HEALTH: AN EVALUATION OF CDC'S STRATEGY FOR COMMUNICATION OF RISKS ASSOCIATED WITH THE EBOLA OUTBREAK IN 2014

Lead Author: Daniel Witter, M.D., Ph.D.
Co-Author(s): Joseph Thornton, M.D.

SUMMARY:

The media today is constantly reporting distressing news with associated potential risk to local communities or the population at large. Psychiatrists are on the frontline dealing with the potential fallout of this distress and operate under the assertion that the way information is communicated directly influences peoples' feelings and behavior. With the recent Ebola crisis, significant mental health distress has been found in individuals who have the disease, are in quarantine, work with the diseased, or fear acquiring the disease. Communication by the media of the risks associated with Ebola and other public health crises provides a unique opportunity for mental health professionals to become engaged.
Following the 2003 SARS outbreak, the World Health Organization (WHO) offered risk communication guidelines, developed by a psychologist and psychiatrist, for relaying information to the public. These were divided into "Consensus Recommendations," e.g., don't over-reassure, put reassuring information in subordinate clauses, offer people things to do; and "Debatable Recommendations," e.g., err on the alarming side, acknowledge opinion diversity, be willing to speculate. In the same article, WHO proposes a research agenda with specific suggestions for ways to become actively involved in the development and evaluation of risk communication strategies, and suggests conducting case studies on risk communication efforts associated with public health crises. Using the proposed WHO guidelines, we analyzed transcripts from two separate televised news conferences held one month apart during the summer of 2014, in which the Center for Disease Control (CDC) director, Dr. Tom Frieden, discussed the risk

associated with the Ebola outbreak in Central Africa. Based on our evaluation of the communication of risk conveyed during these interviews, we found several examples where these guidelines were not implemented, especially in the earlier interview. Of note, we also find a shift from Debatable Recommendations in the first interview to Consensus Recommendations in the second interview. We find the biggest strength of CDC's strategy of risk communication to be "Offering people things to do" and the biggest weakness overall to be repeated incidences of over-reassurance about the risk of Ebola spread.

We conclude that CDC's risk communication strategy had significant room for improvement and would have benefited from following the specific guidelines proposed by WHO. We recommend that psychiatrists take a more active role in educating public health and elected officials on effective risk communication as a major tool for demand management of health services. Additionally, psychiatrists should work with the media to convey information that allows the public to evaluate their own potential risk exposure, along with instructions on what they can do to manage perceived risk. Thus, empowerment, rather than assurance, should be the goal of risk communication.

MEDICAL STUDENT-RESIDENT COMPETITION 2

DRINKING FROM THE FIRE HOSE: A PROACTIVE APPROACH TO AVOIDING MEDICAL STUDENT FAILURE

Lead Author: Ebele Achebe
Co-Author(s): Ebele Achebe, BA, Louise O'Donnell, Ph.D, David Henzi, Ed.D, Thomas King, Ph.D

SUMMARY:
Studies show that while remediation focuses helping students pass the exam, they offer no strategies to prevent future failures. The purpose of this study was to help medical students improve their learning efficiency. Participants at risk of academic failure were invited to a series of study skill intervention sessions. The goals of the 3 sessions were to help students: identify their preferred learning style and preview materials effectively; take notes and review; and develop a time management strategy. The participants' academic performances were compared to the control groups'. The control groups were students at risk who had volunteered to participate but did not attend the learning sessions. Preliminary results show a trend of improvement in course grades in participants versus their control counterparts. In addition, three students from the control group have dropped out of medical school compared to no dropouts in the participant group.

CROSS CULTURAL VARIATIONS IN PSYCHIATRISTS' PERCEPTION OF MENTAL ILLNESS: A TOOL FOR TEACHING IN GLOBAL MENTAL HEALTH

Lead Author: Jhilam Biswas, M.D.
Co-Author(s): Jhilam Biswas, MD, B.N. Gangadhar, MD, Matcheri Keshavan, MD

SUMMARY:
Objective: A frequent debate in psychiatry is to what extent major psychiatric diagnoses are universal versus unique across cultures. Learning answers to this question is important in how academic hospitals train psychiatrists to work in the field of global mental health. It is also relevant when considering the perceptions international residents bring to mental illness while treating patients in the United States. We sought to identify cultural variations between psychiatrists' perceptions of most common presentations of mental illness in Boston Massachusetts and Bangalore, India. Methods: We surveyed psychiatrists in Boston and Bangalore to identify differences in how frequently symptoms appear in major mental illness in two culturally and geographically different cities. Results: Indian psychiatrists found somatic symptoms like pain to be significantly more important in depression and violent aggressive behavior to be significantly more common in mania than did American psychiatrists. American psychiatrists found pessimism about the future to be more significant in depression and pressured speech and marked distractibility more significant in mania than among Indian psychiatrists. Both

groups felt the top four symptoms of psychosis were paranoia, lack of insight, delusions and auditory hallucinations and both groups agreed that visual hallucinations and motor peculiarities to be least significant. Both groups found barriers to mental health care access were similar. One significant difference was American psychiatrists found substance abuse to be a significant barrier to care whereas Indian psychiatrists found embarrassing the family was a significant barrier to accessing care. Conclusions: Common psychiatric illnesses are diagnosed universally, but the symptomatic presentations may vary across cultures. Because psychiatrists see a large volume of individuals across different cultures, their perception of most common symptoms in psychiatric illness is critical part of accurately determining varying illness manifestations between cultures. Understanding this variance in perception between cultures is vital in global mental health teaching and training.

SIMULATION AS LEARNING STIMULATION: IS SIMULATION AN EFFECTIVE TOOL IN DEVELOPING PSYCHIATRIC TRAINEES' CONFIDENCE IN CORE COMPETENCIES?

Lead Author: Andrew Camden, M.A.
Co-Author(s): Daniel Meek, M.B.B.S., Patrick Davey, M.B.B.S., Zainab Jabur, M.D., M.P.H.

SUMMARY:

BACKGROUND: Simulation is increasingly recognized as a valuable tool in promoting patient safety and improving doctors' competence and clinical skills.(1) The London-based Maudsley Training Scheme has implemented simulation training to improve Psychiatry Residents' skills and knowledge base.
AIM: To determine whether simulation training improves Psychiatry Residents' confidence and competence in core training areas such as history taking, risk assessment, formulation and management of complex cases. The learning objectives for the course were based on the core curriculum set out by the UK's Royal College of Psychiatrists.(2)
METHODOLOGY: Residents completed a pre-course self-rated 5-point Likert scale questionnaire (1 = not at all confident and 5 = very confident). This included 11 questions covering the Royal College of Psychiatrists core curriculum for Residents. After completing 10 simulated scenarios during the one-day course, each followed by participant led feedback and discussion, the same questionnaire was again completed by participants.
White space questions were also used to collect qualitative data.
The questionnaires assessed the following domains: history and examination, differential diagnosis, management, risk, mental health law, capacity, establishing rapport, communication, teamwork, leadership and time management.
Simulation scenarios were devised by the heads of the Maudsley Training Scheme and professional actors with training in mental health teaching were used throughout. All scenarios were viewed on a live stream by other Residents attending. Senior Psychiatrists and allied mental health professionals facilitated the course.
RESULTS: 22 Residents participated in the simulation training and completed the pre- and post-course questionnaires. Residents self-rated competencies improved across all 11 domains. The greatest improvements were in domains covering capacity (pre-course 3.05, post-course 4.00), Mental Health Law (pre-course 3.36, post-course 4.17) and leadership (pre-course 2.91, post-course 3.63).
White space questions highlighted the value of the participant-led debrief and the opportunity for Residents to direct their own learning.
DISCUSSION: Residents' confidence improved in all domains, in particular areas relating to capacity, detainment and leadership. This demonstrates that simulation is an effective training tool for Residents in improving core skill and promoting patient safety. This is likely due to exposure to difficult simulation scenarios with the opportunity for feedback, reflection and open discussion.
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LONGITUDINAL STUDY ASSESSING STUDENT AWARENESS OF

HEALTHCARE DISPARITIES AND MENTAL HEALTH STRESS IN LGBT POPULATION FOR CURRICULUM DEVELOPMENT

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

SUMMARY:

Summary: This project, approaching its third year, focuses on a pre- and post-survey assessment of curriculum intervention designed to increase awareness of second year pre-clinical students' existing assumptions about LGBT people, to highlight disparities of health care to which LGBT patients are vulnerable, and to underscore the important role that physicians can play in dispelling these disparities to optimize LGBT healthcare, especially related to mental health. This study, utilizes new syllabus and reading material and a 1-hour lecture panel of Houston-area LGBT experts. This curricular change was added to Behavioral Science course to meet our goals and to assess the need for additional educational developments for medical students at our school. We currently have collected data for two MSII classes over the first two years of this study.
Results and Discussion: Our results from the survey, in addition to class discussion, follow-up questions, and comments after the lecture indicated a real need to increase LGBT-specific education in our medical school curriculum. Although there was somewhat of an understanding of healthcare disparities and barriers, education was deficient in regards to specific healthcare needs of the population. Students also had less knowledge related to the effects of minority stress on the population. Many students discussed the focus in medical school education and LGBT healthcare revolved around gay men and the correlation to HIV/STDs, especially in their preclinical years. There was a global lack of focus in lesbian healthcare, transgendered healthcare, adolescent care/coming out, mental health and substance abuse issues, in addition to an overlying theme of apathy from many students in regards to significance and clinical relevance to future practice. Although similar in areas, the classes offered differences in data related to knowledge, comments, and overall acceptance and support of LGBT patients, their specific mental health needs, and their role as physicians.
In comments about adding/editing curriculum or thoughts on the project, negative and positive results were offered; responses ranged from morality issues and total lack of support to answers that the project had opened their eyes and a feeling that more education was needed. Out of the project, a Gay-Straight Alliance (GSA) has been founded with a lunch lecture series now in its second year dedicated to trans-health, ethics and legal issues, HIV issues, child and adolescent mental health, LGBT-diversity panel and a workshop to help "out" students navigate medical school, residency applications and interviewing, and a professional career. Pre-clinical and clinical classes have begun to be audited to incorporate more LGBT-specific healthcare. The GSA has also been influential in starting a statewide LGBT organization for LGBT students and faculty that focuses on community and school education and outreach through local efforts and an annual conference.

TWO HEMISPHERES OF PSYCHIATRIC TRAINING: RESIDENCY AND TREATMENT IN THE EAST AND THE WEST

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

SUMMARY:

Objectives: We sought to investigate the differences and similarities of psychiatric training and treatment among the sites visited in Asia and in the United States of America (USA).
Methods: Trainees and faculty at sites in Taiwan, Malaysia, the Philippines, and the USA were interviewed in person or via e-mail by the authors regarding a wide array of issues directly relating to psychiatric care. Doctor/patient interactions and resident training were also observed in some sites.
Results: Worldwide, psychiatry continues to be an underutilized and underfunded resource. The need for robust psychiatric care is unmet the world over. Many factors contribute to this, including lack of funding, lack of interest by medical professionals, and lack of adequate training programs. In this article, we compare psychiatric training and practice among various institutions in Taiwan, Malaysia, the Philippines, and the United States of America. We explore the differences and similarities among core patient populations, patient loads, and training

approaches, as well as inpatient and outpatient treatment, with particular focus on training. This includes duty hours, resident workloads, and resident expectations, which varied greatly from nation to nation, and even from institution to institution within nations. While we found that the contrasts were quite striking, the similarities were even more so. These institutions had much more in common than was expected. Of note, the practitioners were strong advocates for their patients, often struggling against institutional, and even national, marginalization of mental healthcare. All shared a respectful, compassionate, and scientific approach to mental health patients, unfunded or funded, psychotic, manic, or depressed, young or old, that exemplified the growth of, and struggles for, the recognition, acceptance, and treatment worldwide of mental illness.
Conclusion: Psychiatry is a burgeoning field with a great deal that can be learned and shared across international boundaries to further its advancement.

THE STRESS MANAGEMENT AND RESILIENCY TRAINING CURRICULUM FOR INTERNS (SMART-I): USING HEALTH TRACKING TECHNOLOGY TO PROMOTE RESIDENT HEALTH

Lead Author: Deanna C. Chaukos, B.Sc., M.D.
Co-Author(s): Laura Byerly, M.D., Grace Peloquin, M.D., Darshan H. Mehta M.D., M.P.H., John W. Denninger M.D., Ph.D.

SUMMARY:

Background: The consequences of physician burnout extend beyond training-affecting physician health, patient care and safety, and health systems efficiency. These deleterious processes begin early in careers, often during graduate medical education. While initiatives like work-hours regulation support resident health, they have had limited impact on physician well-being. Preliminary studies amongst practicing physicians demonstrate that mind-body interventions (MBI) effectively lower stress, increase physician empathy and decrease burnout.[1] However, there have been no reports of the use of MBIs in residency training.
Methods: In collaboration with the Benson-Henry Institute for Mind Body Medicine at Massachusetts General Hospital (BHI), a resident-initiated Resiliency Curriculum has been adapted from the BHI's Stress Management and Resiliency Training (SMART) Program and implemented for the 2014-2015 PGY1 residents within the departments of Medicine and Psychiatry as part of a mandatory didactic curriculum. Through a prospective cohort study design, we will investigate the impact of the SMART-I curriculum on residents' emotional and physical wellbeing, stress, and overall resiliency through validated survey instruments. In addition, we will have continuous remote physiologic and health-behavior tracking using a commercial device, Basis. Basis is a wearable health-tracker that measures heart rate, skin conductance, skin temperature, and 3-axis accelerometry, allowing the monitoring of sleep quality and physical activity.
Results: As a pilot, the goal of this initiative is to establish a resiliency curriculum, determine its feasibility, and measure its efficacy as a means to nurture resiliency and counteract burnout. Of 85 PGY1s who qualified for the study, 75 consented to participate in the study; of these, 72 consented to wear the Basis health tracker. Preliminary feedback and Basis data illustrate robust participation and enthusiasm. Aspects key to the program's implementation success include resident leadership, dedicated faculty, residency training program support, resident protected time for sessions, as well as a combined experiential and didactic program.
Conclusions: The SMART-I curriculum is a novel approach to improving physician well-being through skillful practice in residency training. Next steps include standardization of the curriculum protocol for easy adoption.
[1] Krasner MS, Epstein RM, Beckman H et al. Association of an Educational Program in Mindful Communication with burnout, empathy and attitudes among primary care physicians. JAMA. 2009;302(12):1284-1293.

PSYCHIATRY RESIDENTS' ATTITUDES AND PREFERENCES REGARDING CLINICAL RESOURCES

Lead Author: Robyn S. Fallen, M.D.
Co-Author(s): Katherine McKay, M.D., Parkash Singh, M.D.

SUMMARY:

Objective: To assess McMaster University psychiatry residents' confidence in, attitudes, and preferences regarding psychiatry clinical

resources as collected for the purpose of a quality improvement project.
Design: Cross-sectional, self-administered electronic survey.
Participants: Sample of 45 psychiatry residents across two distributed campuses; 33 (73%) responded.
Setting: Canadian postgraduate psychiatry program
Outcomes: Residents' use of clinical practice guidelines in psychiatry; attitudes toward clinical resources and subsequent impact on patient safety and quality of patient care; attitudes toward a clinical handbook designed for psychiatry learners.
Main results: In all, 88% of respondents reported using clinical guidelines monthly or less, substantially less frequently than traditional information sources (e.g. textbooks). None of the respondents rated themselves as highly confident in their ability to easily access clinical guidelines in clinical settings for the administration of chemical restraint. Only 33% of residents who responded rated themselves as at least somewhat confident in their ability to easily access clinical guidelines for monitoring of metabolic parameters during antipsychotic use. Only 15% of those who responded indicated that they were either somewhat confident or very confident in their ability to access clinical guidelines for writing seclusion/restraint orders at the point of patient care.
Of respondents, 91% believe that easy access to clinical practice guidelines could increase quality of patient care. Similarly, 94% of resident respondents believe that easy access to hospital safety protocols are likely to increase patient safety. Most respondents felt that a pocket psychiatry clinical handbook was likely to increase the consistency of care received by patients (87%), could serve as a convenient source of advice (97%), and could serve as a useful educational tool (91%). Most respondents did not feel that a clinical psychiatry resource book would be too rigid to apply to patients (66%), nor challenge their autonomy as a resident (85%). A strong majority of respondents, 90%, replied that a pocket clinical handbook for psychiatry would be a resource they would use if available.
Conclusions: Psychiatry residents sampled at one Canadian university postgraduate program, although generally positive about clinical guidelines and their ability to improve patient care, have not yet integrated the use of such guidelines into their practices to a significant extent. Our results suggest an interest among residents in a convenient clinical resource containing clinical practice guidelines and safety protocols and that residents would use a pocket clinical handbook if available. Overall, it is posited that access and utilization of such a handbook has the potential to improve patient care. The next stages of the quality improvement project seek to reassess impact of the resource six months post-implementation.

IMPROVING PATIENT OUTCOMES AND PROVIDER SATISFACTION BY ENHANCING DOCUMENTATION OF FUNCTIONAL IMPAIRMENT

Lead Author: Liberty Fritzler, M.B.A., M.D.
Co-Author(s): Greta Naylor, M.D., Philip Lanzisera, Ph.D., Deepak Prabhakar, M.D., M.P.H.

SUMMARY:

Psychiatric illnesses pose serious challenges to patients, often leading to functional impairment. Given the current standards of medical coverage, patients often require accurate documentation of their symptoms and impairment in order to receive "disability" benefits. At our Resident Clinic site, prior to this project, there were no standardized tools present in the electronic medical record (EMR) for disability assessments in behavioral health. We hypothesized that creation of a standardized documentation tool will allow providers to place patients on disability with the appropriate documentation to support that decision. By utilizing EMR, all providers who are caring for patients will be able to access and understand the treatment decisions that were made. Additionally, we hope that the standardized process will help educate residents on the importance of accurate and timely completion of a disability assessment leading to increased comfort level.
We have created the first standardized disability assessment template that is readily accessible through our Epic EMR, allowing efficient completion of the assessment. The template lists 15 questions that fully assess an individual's work impairment, to assist in decision making for disability evaluations. This template is now being piloted at our Resident Clinic location.

We developed and administered a physician comfort scale to assess the comfort level of resident trainees with performing a disability assessment before implementation of the disability template, and plan to administer the questionnaire periodically following the implementation.
If found effective, this standardized tool will be utilized by our Outpatient Department, thereby improving patient care and provider satisfaction across this treatment setting. Since our health system utilizes the same EMR, in addition to behavioral health, this template can also potentially be shared with primary care and any other specialty within the Henry Ford Health System.

IMPROVING SUICIDE ASSESSMENT SKILLS IN MEDICAL TRAINEES

Lead Author: Tiffany Gearhart, M.D.
Co-Author(s): Elizabeth Norian, M.D., Anna Engel, M.D., Yelena Kamenker-Orlov, M.D., Ph.D., John Bradley, M.D.

SUMMARY:

Background
Primary Care provides 50% of the mental health care in the US. Though healthcare reform may make mental health care more accessible, the primary care relationship will likely remain the initial contact patients seek for mental health treatment, and their last contact with the health care system prior to attempting suicide. Very few primary care practices are co-located with mental health or emergency services. It is therefore essential that primary care physicians have confidence and experience in evaluating suicidal ideation. The genesis of this project was a case of an otherwise astute second-year medical resident who incorrectly assessed a depressed patient to be not acutely suicidal. The precepting attending was still concerned and requested an on-site psychiatric consultation, which determined that the patient was an imminent danger to self. The medical resident afterwards identified a weakness in her medical training and interest in learning how better to assess suicide risk. With that in mind, we have undertaken a project to improve confidence and ability of medical trainees in the West Roxbury VA Primary Care Service (i.e. Patient Aligned Care Team) to determine suicide risk in their patients.
Method
The Columbia Suicide Assessment Rating Scale is a validated tool which assists the provider in deciding the likelihood of an actual suicide attempt. It has been used effectively in at least one VA setting. The developers of the scale offer a free online training on suicide risk assessment and how to use this tool. The section on suicide risk assessment can be used to train medical residents. Prior to viewing the training, medical residents will be given a pre-test consisting of clinical scenarios in which the patient may be acutely suicidal. These are the same scenarios presented in the on-line training. The residents will be asked to determine if the patient is suicidal in each case. They will also be asked to rate their level of confidence in making such a determination. After viewing the on-line training, the residents will again assess the scenarios and rate their confidence level. Pre- and post-online training determinations of skill and confidence will be used as outcome measures.
Results
We will determine if there was a significant change in both skill and confidence level of medical residents in determining suicide risk after using the online training.
Discussion
Over 90% of residents will rotate through a VA facility at some time during their residency. The 40% rise in the veteran suicide rate makes assessing risk even more vital, as suicidal patients often present to primary care. This teaching could be an important addition to medical graduate training.

DOES SPACED EDUCATION IMPROVE LEARNING AND RETENTION IN THIRD YEAR MEDICAL STUDENTS IN THEIR PSYCHIATRY CLERKSHIP? A RANDOMIZED CONTROLLED TRIAL

Lead Author: Kate Grossman, M.D.
Co-Author(s): Kate Grossman, M.D., Amritha Bhat, M.B.B.S., M.D., Jesse Markman, M.D., M.B.A. B. Price Kerfoot, M.D., Ed.M.

SUMMARY:

Background: Spaced education has previously been shown to improve retention of clinical knowledge in medical students. At the University of Washington, medical students in their third year complete a 6 week rotation in psychiatry at one of 15 training sites, at the end of which they are tested on their knowledge of

core topics in psychiatry. Objective: To assess if spaced online education is associated with significant improvement in retention of knowledge. Methods: 212 medical students rotating through their Psychiatry clerkship in the academic year 2014-15 will participate in this trial. They are required to participate in the trial as part of their clerkship. Based on the existing psychiatry clerkship curriculum, we constructed multiple choice questions for four core topics anxiety disorders, mood disorders, psychotic disorders and personality disorders. These questions are administered to all of the students prior to their rotation as a pre-test. They are then randomly assigned to one of two groups Group A mood disorders / psychotic disorders, and Group B anxiety disorders / personality disorders. For the duration of their psychiatry clerkship, students receive emails via an established online tool with questions based on the group they were assigned to. The questions/clinical vignettes are followed by explanations of the correct and incorrect answers. Students receive each question twice during the rotation. At the end of the clerkship, they complete a post-test with questions on all four core topics. 6 months after their clerkship, students will receive a test to evaluate retention. We use unpaired t test to compare the mean change in score on the two modules between the two groups. Results: This study is ongoing. By May 8, 2015, 7 of 8 cohorts will have completed their clerkship. To date, 62 medical students have participated in the spaced education initiative. There is some incomplete data due to delayed participation by some students. Data from this pilot group of students is presented below. There were no significant differences between the mean pretest scores. For questions related to mood / psychotic disorders, students who had been receiving emails based on mood / psychotic disorders improved their score significantly more (Mean change 11.30, SD 5.83, n=30) when compared to students who had been receiving emails based on anxiety / personality disorders (Mean 6.65, SD 4.89, n=23). P=0.003. For questions related to anxiety / personality disorders, students who had been receiving emails on anxiety / personality disorders (Mean 7.74, SD 6.09, n=27) improved their score significantly more than students who had been receiving emails on mood / psychotic disorders (Mean 2.87, SD 5.77, n=30). P= 0.003. We will present data on all 212 students and data on knowledge retention at 6 months. Conclusion: Email based spaced education is associated with a significant improvement in retention of knowledge.

TWEETING AT THE MOVIES: TEACHING PSYCHOPATHOLOGY IN THE ERA OF NETFLIX AND SOCIAL MEDIA

Lead Author: Jessie J. Hanna, M.D.
Co-Author(s): Leticia Velivis, M.D., Nitya Hajela, M.S., Anthony Tobia, M.D.

SUMMARY:

Purpose:
Recently there have been an increasing number of investigations regarding the provision of medical education in novel formats, such as utilizing films to educate students regarding various types of psychopathology. However, this modality is limited by the necessary delay between students' observation of the film and the educator's ability to provide commentary and answer questions.

Twitter, an online social networking service that enables users to instantly communicate via short messages, is capable of addressing concerns such as feedback lag, student apprehension, and single-speaker paradigm, thus adding a more dynamic factor to the movie viewing experience and enabling the films to be analyzed in real-time.
This study aimed to assess the efficacy of multi-faceted Twitter/film teaching modality in the instruction of psychopathology.
Methods:
Our study was conducted via a yearlong elective course, meeting monthly, and open to all third and fourth-year medical students.
Each class started with an introduction of the film and the elements of psychiatry present therein. Students and select faculty from the Department of Psychiatry and the Program in Comparative Literature were then able to interact via a live Twitter feed while the film was projected adjacently, allowing free and thoughtful conversation to take place in real time. Likert scale data regarding student's opinions of the course was subsequently collected via an anonymous online survey.
Results:
One-hundred and four students completed the course. There was no significant effect of student year or previous interest in psychiatry upon survey response. Overall, the response to

the class was overwhelmingly positive. For example, 86.5% of students "agreed" or "strongly agreed" that the "cinema education seminar was a helpful method to gain access to the subject of psychiatry". 73.1% "agreed" or "strongly agreed" that the cinema education seminar "enabled me to recognize the typical symptoms of XXX disease." 71.1% "agreed" or "strongly agreed" that "This format helped me to put myself into the position a person suffering from XXX disease." 83.7% "agreed" or "strongly agreed" that "the structure of the seminar brought me closer to psychiatric diseases in general." Finally, 95.5% of students "agreed" or "strongly agreed" that "I valued this combination of Twitter and movie seminar."
Conclusions:
Our course represents a novel and enjoyable method of teaching the clinical presentation of psychiatric disorders to medical students. It was well-received amongst students regardless of gender, class year, or interest in psychiatry and allowed students to empathize with patients suffering from mental illness. It is possible that this format may serve as a useful paradigm for other media/technology based classes in medical education.

RESIDENTS BEHIND BARS: PSYCHIATRIC TRAINING IN CORRECTIONAL SETTINGS

Lead Author: Brian J. Holoyda, M.D., M.P.H.
Co-Author(s): Charles Scott, M.D.

SUMMARY:

Increasing numbers of individuals with mental illness receive their care in jails and prisons. Correctional settings provide many benefits for psychiatric trainees, including opportunities to learn basic knowledge and skills in psychopathology, psychopharmacology, and psychotherapy. Furthermore, correctional staff members receive benefits from academic affiliation, such as creating an educational environment for maintenance of current standards of care, providing additional manpower to unburden a heavy work load, and providing staff university appointments. Despite this, a recent online survey indicated that less than one-third of psychiatry residency training programs have a mandatory correctional psychiatry rotation. Residents surveyed at one training program identified the need for more psychiatrists to work in jails, but expressed little interest in pursuing a career in correctional psychiatry. To ensure a future correctional psychiatric workforce, academic medical centers should consider establishing academic affiliations with local correctional sites and pursue policies to maximize trainees' enjoyment of training experiences in correctional settings.

INTERDISCIPLINARY PEER ASSISTED LEARNING FOR THE SCREENING, BRIEF INTERVENTION AND REFERRAL TO TREATMENT (SBIRT) MODEL FOR ALCOHOL USE DISORDER

Lead Author: Monique James
Co-Author(s): Erick Hung, M.D., Demian Rose, M.D., Ph.D., Maria Wamsley, M.D., Jason Satterfield, Ph.D., Patrick Yuan, Patricia O'Sullivan, Ed.D.

SUMMARY:

Introduction
Internal Medicine (IM) faculty have traditionally taught IM residents substance abuse screening and management through the Screening, Brief Intervention and Referral to Treatment (SBIRT) model. An alternative approach is with Peer Assisted Learning (PAL), a widely used teaching method. However, most educators and learners in PAL programs are within the same discipline of study. In this pilot curriculum, psychiatry residents taught SBIRT plus alcohol use disorder pharmacology to IM residents. Our team sought to evaluate this interdisciplinary PAL approach.
Research Questions
-How did Psychiatry and IM residents perceive interdisciplinary PAL?
-Were resident educators and learners satisfied with the SBIRT PAL sessions?
Methods
Psychiatry residents (PGY 2-4) taught the 3-hour required curriculum to categorical IM residents (PGY 2-3), which was offered twice to accommodate learner schedules. The curriculum included an introduction to SBIRT concepts, objectives, skills practice, and pharmacologic management of alcohol use disorders. Teaching methods included didactics, large group demonstration, small group discussion, and role-play using patient cases. We developed a 5-item Likert questionnaire based on literature review and expert consultation to assess resident perceptions of PAL and satisfaction with the SBIRT curriculum. Residents completed the

items immediately after each session, rating items from 1 â€“ "strongly disagree" to 5 â€“ "strongly agree". We calculated means and standard deviations for all items.
Results
In education session one, 3 psychiatry residents taught 8 IM residents; 7 psychiatry residents taught 19 different IM residents in session two.
IM resident learner surveys revealed this model helped their learning (mean 4.13, std dev 0.33; and 4.21,0.33, respectively for the two sessions), peer educators better understood challenges faced in clinic (3.88,0.93; 3.95,0.93), peer educators were more effective at teaching at their learning level (3.88,0.60; 3.79,0.60), and they better appreciated peers' roles (4.00,0.50; 4.11,0.50). Most rated at the "agree" level to future sessions facilitated by interdisciplinary peers (4.13,0.60; 4.16,0.60). Some wrote, "they provided practical knowledge with resident perspectives", and "great to interact with different specialties."
Psychiatry resident educators indicated this model improved appreciation of peers' roles and challenges in clinics (4.67,0.47; 4.57,0.47). All psychiatry residents, in both groups, "strongly agreed" this model reinforced their knowledge (5.00,0.00). All wanted more opportunities to teach in interdisciplinary settings (5.00,0.00). Some wrote it was "excellent experience, should continue", and it was "reinforcement and inspiration."
Discussion
Based on the groups of residents surveyed, this interdisciplinary PAL between psychiatry and IM residents is a helpful and satisfactory method of teaching the SBIRT curriculum.

“AM I GOING TO BE OKAY?”: ANSWERING MEDICINE’S MOST IMPORTANT QUESTION

Lead Author: Nathan S. Johnston, D.O., M.S.
Co-Author(s): Jason E. Schillerstrom, M.D.

SUMMARY:

Introduction:
"Am I going to be okay?" is arguably the single most important question in medicine. Pursuing an answer to this anxiety-ridden question is a powerful motivator for patients to seek physician assistance and is therefore a significant driving force behind every clinical encounter. As providers, it is imperative that we approach and answer this question with the empathy, honesty, and humility that it deserves. It is also important that future clinicians learn how to comfortably and confidently respond to this question when it inevitably arises. The purpose of this study was to examine and compare what medical students, attending physicians, and standardized patients felt was the most appropriate response when asked by a standardized patient with ovarian cancer, "Am I going to be okay?"
Methods:
Psychiatry and Obstetrics/Gynecology clerkship directors collaborated to develop a Women's Health Objective Structured Clinical Exam (OSCE). One of the vignettes challenges students to interview a standardized patient recently diagnosed with ovarian cancer who presents with a chief complaint of anxiety. During the course of the vignette, the standardized patient asks, "Am I going to be okay?" Forty-five consecutive video recorded patient encounters were reviewed. The medical student's first response to being asked, "Am I going to be okay?" was recorded. These responses were then grouped into the following categories: negative, affirmative, avoidant, deferred, non-committal, and intellectualizing. A survey was sent to psychiatry faculty, ob-gyn faculty, and standardized patients asking them to choose the single best response to, "Am I going to be okay?" Answer choices included one selected student response characteristic of each response category. As there were no affirmative responses, one was written and included by the investigators.
Results:
Medical students most frequently offered a deferred response (n=21, 47%), followed by a non-committal response (n=13, 29%). No medical students offered an affirmative response. The answer most favored by attending physicians of both ob-gyn and psychiatry was the affirmative response with 41% (n=7), while the standardized patients equally favored the non-committal and intellectualization responses with 35% each (n=12).
Discussion:
Opinions regarding the most appropriate response by a clinician when asked, "Am I going to okay?" vary widely between students, faculty, and standardized patients. Though the idea of offering hope and encouragement to a patient during a time of crisis seems ideal, the observed medical students appeared hesitant to do so despite their teaching faculty and

mentors more frequently favoring an affirmative response. Also of interest, the standardized patients were also reluctant to favor an affirmative response. Further research is needed to explore the apparent disconnect between the responses of the medical students and those favored by their mentors.

ASSESSMENT OF PSYCHIATRIC EDUCATION IN PRIMARY CARE RESIDENCY PROGRAMS

Lead Author: Maureen L. Joyce, M.P.H.
Co-Author(s): Kelly Melvin, MD; Robin Tolbert, MD; Corey Keeton, MD; Chris LeGrow, PhD; Kelsey Cook, MA

SUMMARY:

Purpose: Psychiatric illness affects roughly 26.2 million adults as well as 1 in 5 children in the United States annually with a high associated disease burden and financial cost. Only half of individuals with illness receive treatment and, for those that do, roughly 50-70% are treated solely by their primary care physician. Accreditation Council for Graduate Medical Education (ACGME) requirements for individual primary care programs to include family medicine, internal medicine, pediatrics, and obstetrics/gynecology vary significantly regarding training in psychiatric medicine. With the exception of family medicine, no ACGME specialty program requirements make extensive mention of psychiatric or behavioral health education. None require a formal rotation in psychiatry. Very few reports have examined in detail the educational content, pedagogies, and perceived efficacy of behavioral health training and no multi-discipline comparison study has been completed in the last decade. The purpose of this study is to examine current trends in psychiatric teaching within primary care residency programs and to assess program director satisfaction regarding amount and effectiveness of training.
Method: An 18-item anonymous questionnaire was sent to a total of 1,386 program directors of accredited residency programs for family medicine (FM), internal medicine (IM), obstetrics/gynecology (OB), pediatrics (PED), and combined internal medicine/pediatrics (MP). Respondents were asked to provide information about size, geographic location, and type of program. They were asked about teaching methods and settings, learning topics, quantity and perceived quality of teaching, and asked to rate their satisfaction with behavioral health training.
Results: A total of 300 of 1386 programs completed the survey representing a 21.6% total response rate. Consistent with previous findings, Family Medicine programs reported a larger variety of behavioral health learning experiences as well as higher overall satisfaction with psychiatric teaching than other disciplines. 58% of FM programs agreed or strongly agreed that they were satisfied with the amount of teaching in mental health and 52.5% reported satisfaction with overall effectiveness of their training. In contrast, 22.7% of IM, 21% of OB, and 28.6% of PED programs were satisfied with the amount of teaching of behavioral health training. Regarding efficacy of teaching, 33.3% of IM, 21% of OB, and 32.1% of PED programs were satisfied. A number of specialty specific trends were noted. Globally, very few programs report satisfaction with education concerning mental health systems of care and involuntary commitment.
Conclusions: Our data suggest that little progress has been made over the past decade in improving the amount and quality of behavioral health education within primary care residency programs.

MENTAL HEALTH FIRST AID FOR SENIORS- NEEDS ASSESSMENT AND EVALUATION OF THE NEUROCOGNITIVE DISORDERS (DEMENTIA) MODULE

Lead Author: Saurabh Kalra
Co-Author(s): Richard Shulman, MDCM, FRCPC

SUMMARY:

Introduction: Neurocognitive Disorders (NCD) are common in individuals above the age of 65. People with NCD exhibit several behavioural symptoms and responsive behaviours that can make it challenging for their informal caregivers to provide them care. The Mental Health First Aid (MHFA) for Seniors is currently being developed to teach adults, who work with or care for seniors, the necessary skills to identify mental-health related crisis situations and equip them to provide initial care before professional help arrives.
Purpose: The primary objective of this study was to evaluate the effectiveness of Seniors MHFA Neurocognitive disorders (NCD) module designed for informal caregivers in improving

their knowledge about the condition and reducing stigmatizing attitudes. The secondary objective was to assess the knowledge gaps and needs of the participants after taking the course.
Methods: Twenty nine English speaking informal caregivers were recruited through mailing them the study information sheets. All subjects completed a pre-test questionnaire to assess their baseline knowledge and stigmatizing attitudes. This was followed by one 2 hour Seniors MHFA NCD session and a post-test questionnaire with the same questions as the pre-test questionnaire.

Results: Most of the participants were female (75%), about 50% of the participants were between the ages of 38-57 and most subjects had a university degree (69%). There was a statistically significant improvement in participants' knowledge of the condition as seen in their true/false scores (from 5.4 Â± 1.3 pre-session to 6.7 Â± 1.4 post-session; $p<0.05$) and the MHFA action plan (from 3.8 Â± 1.4 pre-session to 4.4 Â± 1.7 post-session; $p<0.05$). Their confidence in being able to help an individual with dementia increased if it was at a low level at baseline. There was no change observed in their ability to identify dementia and their responses on the stigma scale.
Conclusions: The NCD module of MHFA for Seniors results in a statistical improvement in informal caregivers' knowledge about the condition and the action plan, but the absolute difference is small. Future larger scale studies in a lay audience are needed to confirm the utility of the module.

ARE ANTI-DEMENTIA MEDICATIONS EFFECTIVE IN AUTISM SPECTRUM DISORDERS?: A REVIEW OF THE CURRENT EVIDENCE

Lead Author: Amanjot Kaur, M.B.B.S.
Co-Author(s): Natasha Singh, B.S., Vishal Madaan, M.D.

SUMMARY:

Autism Spectrum Disorders (ASDs) are characterized by persistent deficits in social communication and social interaction across multiple contexts along with restricted, repetitive patterns of behavior, that are not better explained by intellectual disability or global developmental delay. While the prevalence rates of autism spectrum disorders have been steadily increasing, clinicians and families continue to struggle with lack of effective pharmacological treatments for managing the core symptoms of ASDs. Over the years, risperidone and aripiprazole have received FDA approval to treat irritability and aggression in this population, yet, research with several other classes of medications to treat the core ASDs symptoms have been inconclusive or negative. Given the slowing in disease progression associated with use anti-dementia medications, these psychopharmacological agents have received a lot of interest for treating patients with ASDs. In this poster we review the currently available literature on the off-label use of cholinesterase inhibitors and NMDA antagonists in the ASDs population.
Recent research has hypothesized an association between ASDs and Alzheimer's disease, as evidenced by high levels of sAPPÎ± (secreted alpha form of the amyloid-Î² precursor protein) in some children with autism. Similarly, other studies have reported abnormalities in cholinergic system in ASDs with variations in nicotinic and muscarinic receptors along with abnormalities in brain glutamate metabolism in individuals with ASDs when compared to normal controls. In turn, this further led to the study of cholinergic and glutamate modulators in the treatment of ASDs. Medications like donepezil, galantamine, rivastigmine and tacrine that modulate the cholinergic system might be helpful in ASDs and are being studied. In addition, memantine, a NMDA receptor antagonist, that regulates the activity of glutamate, has also been found to be helpful for the treatment of core and associated symptoms of ASDs. Galantamine and memantine have some evidence to show improvement in social interactions, language skills, irritability, eye contact and ADHD symptoms with further evidence showing improvement in repetitive or self-stimulatory behaviors, motor planning, disruptive and obsessive-compulsive behavior with use of memantine. However, more recent trials with use of memantine have not been very promising. Donepezil has also been studied in several studies but the results are inconclusive. Rivastigmine and tacrine lack sufficient evidence to support their use in ASDs. Larger controlled studies are required to review their effectiveness and tolerability in treatment of core symptoms of ASDs.

SOCIAL NETWORKING: A TRAINEE SURVEY

Lead Author: Venkata B. Kolli, M.B.B.S.
Co-Author(s): Umer Farooq, M.B.B.S., Jayakrishna Madabushi, M.D., Ashish Sharma, M.B.B.S.

SUMMARY:

Social networking has impacted interpersonal interaction profoundly, more than ever anticipated. These tools with their easy accessibility have improved communication but blurred boundaries between friends, professional colleagues and sometimes patients more than ever before. The importance of patient-physician boundary is perhaps higher in psychiatry than in other professional disciplines. Previous surveys have shown medical students posting unprofessional content online breaching patient confidentiality. The American Medical Association has published guidelines on this topic and American Association of Directors of Psychiatry Training (AADPRT) has created a curriculum on teaching professionalism in psychiatry.

We surveyed the attitudes of psychiatry trainees at Creighton Nebraska Psychiatry Residency Program about professionalism on social networking sites. 22 out of 38 trainees responded to our electronic survey request. Facebook is the most popular platform with more than 90% trainees using it. 45.5% had professional contacts on their friends list and 22.7% had people whom they know only vaguely. 73% used enhanced privacy settings whilst using social networking. However, opinions differed on the acceptable things that can be posted, 47% felt any personal information could be posted. 43% viewed political comments are acceptable and 52% opinioned that generic things about job and on-call are fine to be posted. 48% felt privacy arrangements on social networking are inadequate. 40% of trainees experienced their photographs or net comments shared by their social networking peers that made them uncomfortable.

Interestingly, 73% of trainees used social media to network with peers and 31% found educational resources in this new medium. 55% felt residency programs should form social media groups to promote communication. Majority, i.e. 73% opinioned that standard of professionalism at work needs to be applied to social media as well. 77.3% of the trainees felt professionalism on social media best be taught as part of ethics course. Along with ethics teaching, discussions at psychiatry resident's organization and orientation packets were considered useful means of imparting education on social media.

IMPACT OF PATIENT SUICIDE ON ADULT PSYCHIATRY RESIDENTS: IMPLICATIONS FOR EDUCATION AND POLICY

Lead Author: Vijeta Kushwaha, M.B.B.S., M.D.
Co-Author(s): Mark Rapp, M.D., Susan Mayes, Ph.D., Ahmad Hameed, M.D.

SUMMARY:

Background: Suicide has been deemed an occupational hazard for people working in mental health profession. In a study, up to 50% of psychiatrists had experienced patient suicide and in another study about 1/3rd of psychiatry residents had experienced patient suicide during their residency. Recognizing the importance of this issue, APA in 2006 recommended Residency Review Committee in Psychiatry to include training on the impact of patient suicide in the psychiatry residency curriculum. This survey was designed with an aim to address educational and policy aspect related to patient suicide in adult psychiatry residency program at Penn State Hershey Medical center.

Aims:

- Discovering the proportion of residents who had experienced a patient suicide
-Identifying the emotional sequel of a patient suicide on resident
-Identifying availability of resources and policies to address this issue.

Objective:

-Needs assessment: To identify resources that residents will find helpful if they need them
-Policy development: To identify existence of a policy or if there is none, then to initiate policy development

Methodology:

- An anonymous and voluntary questionnaire based web survey was send to all the residents in the general adult psychiatry program at Penn State, Hershey Medical Center through survey monkey.
- The Questionnaire consisted of mixture of 18 quantitative and qualitative questions.

Results:

-The results were gathered and discussed with the leadership of the department.
-About 30% of residents acknowledged losing their patient to suicide. The percentage of residents who had experienced patient suicide was consistent with previous such studies.
-A formal educational curriculum was developed with an idea of
-Increasing residents' knowledge of various emotional and medico-legal issues.
-A formal policy was also developed to address this issue including provision of support measures for residents.
Conclusion: Patient suicide is a challenge that residents may face during their residency. Having a formal educational curriculum on helping residents navigate through this challenge has the potential to significantly enhance psychiatric residency training.

SPREADING INTEREST IN PSYCHIATRY BY THE NEWLY-FORMED MENTAL HEALTH & PSYCHIATRY INTEREST GROUP (MHP) AT OUWB SCHOOL OF MEDICINE

Lead Author: Xiang Li

SUMMARY:

Since its inception in July 2013, the Mental Health and Psychiatry Interest Group (MHP) at the Oakland University William Beaumont School of Medicine has quickly evolved to a 84 member group hosting a wide variety of events. Its large member base can be attributed to MHP's use of multiple online platforms, including our own website and Facebook page, to showcase its events. Also, MHP has encouraged ample student participation by providing an intimate interaction with visiting psychiatrists, such as its movie nights and roundtable discussions. Using effective pre-event advertising as well as relying on post-event word-of-mouth dissemination, student enrollment in MHP has increased with each event that it has held. Using both pre and post event promotional tools, there was an average rise in membership of 19.5% per event. and a 118.5% increase in overall membership in the 2013-2014 school year. To further hone student interest in mental health issues, MHP will be observing and assisting with mental health intakes for homeless adults at a local shelter. Having already recruited 26% of OUWB's student population, MHP has had a successful inaugural year and looks to broaden its impact in the coming future.

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CONTRASTING A CASE OF PARANOIA WITH FREUD'S SCHREBER CASE

Lead Author: Priya Mahajan, M.D.
Co-Author(s): Anusuiya Nagar, M.D.,Peter Longstreet, M.D.

SUMMARY:

Introduction
Freud postulated that "Dementia Paranoides" originated by repressing homosexual urges. We describe a case of a patient who developed a depressive disorder with paranoia and the expression of homosexual behaviors following the deaths of his sister and mother. We have formulated the case through a historical perspective using Freud's Schreber case along with a review of the literature.
Case Description
The patient is a 59-year-old married Caucasian male who presented as distressed due to prominent homosexual fantasies in the context of a depressive disorder. Patient had sodomized himself with a phallic object and believed that photographs of these sexual proclivities were taken by a neighbor who distributed them among coworkers and church members. He became convinced that these people were treating him differently. Over time, he felt shunned by the community and admitted to neurovegetative symptoms of depression with more prominent thoughts of suicide which prompted his admission.
As a youth, he described a sexually permissive environment at home which included viewing pornographic movies with his bisexual father who encouraged him to "sexually experiment". The patient engaged in homosexual experiences while in his twenties, yet felt guilt that resulted in parasuicidal acts. He described a decade of substance abuse during his first marriage to a spouse who he described as sexually demanding. His second marriage was never consummated. He reported "flare-ups" of homosexual urges upon which he never acted during this marriage. Over the years, he portrayed himself as a heterosexual male who was well-regarded by his colleagues and church patrons.
Conclusion
We have presented a case which emphasizes a Freudian interpretation using his Schreber case

which improved our understanding of the patient's intra-psychic motivations. This allowed us to develop a closer therapeutic alliance with him which enhanced his level of comfort in discussing difficult material and guided our treatment plan. Currently, in many psychiatric programs, there is a dearth of formal instruction for residents to formulate their patients psychodynamically. Rather, there is a predominance of bio-reductionist psychiatry with a near-total focus on phenomenologically-based diagnostics and psychopharmacology. A purist biological vision necessarily limits the depth and richness of our work as psychiatrists.

TREATMENT OF BIPOLAR DISORDER TYPE I IN PATIENT WITH HISTORY OF TBI

Lead Author: Amber Mansoor, M.B.B.S., M.D.

SUMMARY:

Posttraumatic mood disorder is a known complication of TBI. 25-60% of adults develop major depressive disorder within 8 years and 9% of adults develop bipolar type 1.
Bipolar disorder following a head injury may be clinically indistinguishable from the more common form which is presumed to have a hereditary component. This poster presents a case of bipolar disorder which developed after a traumatic brain injury and discusses the efficacy of Valporate as a pharmacological treatment option.

CURRENT UNDERSTANDING AND FUTURE PROSPECTS OF NEUROGENESIS IN THE TREATMENT OF PSYCHIATRIC ILLNESSES

Lead Author: Farha Motiwala
Co-Author(s): Fatima B Motiwala, M.B.B.S.

SUMMARY:

The frequent co- existence of depression and Alzheimer's dementia in the elderly population suggests a common etiology 1. Common etiological factors are: a) Disturbances in serotonergic function - Serotonin regulates the cholinergic system, which in turn affects learning and memory 1,2. b) Pathophysiology of both disorders has been linked to the adult neurogenesis in hippocampus, a part of the limbic structure that plays an important role in learning, and spatial memory 3,4. Neurogenesis also plays a vital role in controlling emotions and pathophysiology of mood disorders such as depression5. It is interesting to note that the hippocampus is highly populated with serotonin receptors6.
Neurogenesis has been proven to be enhanced by antidepressants, CRF1 receptor antagonists, melatonin receptor antagonists (agomelatine), glucorticoid receptor antagonists (mifepristone), glutamate NMDA receptor antagonists, physical exercise, enriched environment, lithium, valproate deep brain stimulation and electroconvulsive therapy 5,7. The process of learning itself especially the hippocampal dependent spatial learning can also increase neurogenesis7. As neurogenesis has shown to be an important factor in the pathogenesis of dementia and depression, it is important to discover the medications that enhance neurogenesis not only in the context of treating these two ailments but also to target other neuropsychiatric diseases.
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RESIDENT SELF-PERCEIVED COMPETENCE IN SUB-COMPETENCIES OF RESIDENT TRAINING AND RESIDENT PERCEPTION OF THE MILESTONE

PROJECT IN ONE ACADEMIC PROGRAM

Lead Author: Komal Nayak, M.D.
Co-Author(s): Manisha Shenava, M.D., Jessica Kovach, M.D.

SUMMARY:

Introduction: The Milestone Project is a new standardized evaluation that is being implemented for U.S. psychiatry residency training programs. There has yet to be any data looking at how the Milestone Project will affect the residents' self-perceived competence and little data about the perception residents have about how this method of assessment will impact their training and progression.
Objective: The purpose of this study was to examine the effects of the Milestone Project on residents' self-perceived competence in core areas of training and to examine resident attitudes toward Milestone implementation.
Method: A 10-minute, anonymous, voluntary survey was administered by email to psychiatry residents in one university program.
Hypotheses:
1. Residents who have overall high self-perceived competence will change their perception after implementation of Milestone Project.
2. Residents will perceive the Milestone Project as an arduous evaluation process and will perceive difficulty in excelling with the new evaluation criteria.
3. Residents' perception of the Milestone Project will improve over the course of their residency, as it is likely to lead to increased feedback.
4. Residents' self-perceived competence will be higher for those residents who are at higher post-graduate levels.
Results: Residents' self-perceived competence in core areas of training will be presented and compared based on post-graduate level. Residents' perception of the Milestone Project and how it may affect their training will be presented.
Discussion/Conclusion: Implications of results for perception of the milestone project and how it may affect a resident's self-perceived competence will be discussed.

USE OF ELECTRONIC RESOURCES IN LEARNING AND TEACHING BY PSYCHIATRY RESIDENTS

Lead Author: Ryan P. O'Connor, M.D.
Co-Author(s): Jamie Franzen, M.D., John Torous, M.D., Robert Boland, M.D.

SUMMARY:

Background: Medical students, residents, and attending physicians are increasingly looking online to learn and access evidence based practice guidelines. With the promulgation of new guidelines now occurring faster than the print cycle for textbooks and handbooks, electronic media have emerged as important clinical and educational resources. However there is little research understanding attitudes and patterns of use among psychiatry residents.
Methods: We surveyed all psychiatry residents and immediate graduates at one psychiatry residency program in Boston. The study was reviewed and approved by the Beth Israel Deaconess Institutional Review Board. Participation was voluntary and no compensation in any form was provided.
Results: Residents reported they utilize print resources 32% of the time; electronic resources 68% of the time. Residents ranked UpToDate as the best source of clinical decision making and PubMed as the best source for scholarly reading. In identifying barriers to use of online resources, 43% (n=25) reported insufficient time, 35% (n=20) insufficient faculty guidance, and 43% (n=25) that resources were not target to psychiatry.
Discussion: Residents are increasingly relying on electronic media for education and clinical decision making. Ease of use, trustworthiness, educational needs and clinical decision making are all important factors for residents when choosing which resource to use. Our results suggest there is a need for optimizing educational resources within academic psychiatry training.

RESIDENTS AS TEACHERS

Lead Author: Michael Olla, M.D.
Co-Author(s): Shazia Iqbal, M.D, Mehnaz Waseem, M.D, Edward G. Hall, M.D.

SUMMARY:

INTRODUCTION:
An integral part of a Resident's tenure is spent in supervising, teaching, and evaluating others, usually medical students, in didactic, out-patient/ambulatory clinic, and bedside settings. Thereof, it is perceived that considerable contribution is made by Residents in the

education of medical students and junior house staff. Despite the importance of knowledge transfer between residents and medical students or junior medical staff, several studies have identified a considerable lack of teaching ability among residents. The lack of effective teaching skills have hurdled effective knowledge transfer, leaving gaps in the hands-on education of medical student Having recognized this mark down in the ability of residents, it is debated by many medical accreditation agencies, that inducing effective teaching skills shall become an integral part of any residency programs. It is urged that, residency programs shall pay explicit attention to providing training to residents, which nourished their teaching skills. The American Council for Graduate Medical Education (ACGME) agrees that teaching is a key part of resident training and has included the teaching of students and other health care professionals as part of the core competency practice based learning and improvement (PBL). However, only half of residency programs offer any guidance in how to teach or have formal teaching instruction.
OBJECTIVE:
The objective of this literature review is to look at some of the available resident teaching programs and to see their effectiveness in improving the teaching skills of the residents.
METHODS:
Extensive literature review at pub med, Google scholar, open access articles and medscape looking for the key words resident teaching skills, workshops and didactic laid the foundation of this study.

THE UNTOLD STORY: VIOLENCE DURING RESIDENCY TRAINING

Lead Author: Heather Oxentine, M.D.
Co-Author(s): Melissa Musec, MD
Toni Johnson, MD

SUMMARY:

Introduction: Are you trained for a violent event in your residency program? Have you been physically or verbally abused in while in residency? Up to 50 % of health care providers are victims of violence at some point during their careers. Approximately 4-8 % of patients who present to psychiatric EDs are armed. A 1997 survey of US psychiatry residents showed that 73 % reported being threatened and 36 % had been physically assaulted. Surprisingly 2/3 had received either no training or inadequate training in managing combative patients. Throughout health care, psychiatry and emergency medicine have the highest interface with violent patients. In order to facilitate greater levels of insight and quality improvement measures into violence awareness, we conducted a survey of the ECU psychiatry and emergency medicine residency training programs to assess the violence experienced, known resources available, and training provided during residency.
Methods: A ten question survey was administered to two training residency specialties, psychiatry and emergency medicine, in the same institution, ECU. This included 32 psychiatry residents (including 6 interns, 4 child/ adolescent fellows and 5 internal medicine/ psychiatry residents), as well as 46 emergency medicine residents (including 12 interns and 10 emergency medicine/ internal medicine residents). Residents were instructed to complete the anonymous paper survey that was then recorded into electronic format via Qualtrics.
Results: We are currently comparing the survey results of both specialties, psychiatry vs emergency medicine residencies, to assess residents violence experienced, level of education, and known resources available to facilitate quality improvement within programs.
Conclusions: In order to start improving violence awareness during residency and facilitate program improvement, we propose a training curriculum based on recommendations of an American Psychiatric Association task force report on clinician safety. We are also in the process of developing a more thorough curriculum to better train both psychiatry and emergency medicine residents, as they are at the greatest at risk of violence during their training.

A MANUAL BY ANY OTHER NAME: IDENTIFYING PSYCHOTHERAPY MANUALS FOR RESIDENT TRAINING

Lead Author: Joshua Pagano, D.O.
Co-Author(s): Ana Gomez, M.D., Richard Bloch, Ph.D., Toni L. Johnson, M.D.

SUMMARY:

Every General Psychiatry Residency Training Program teaches psychotherapy based upon the resources it has at its disposal. Availability of psychotherapy manuals is scarce, and consequently residents receive limited exposure

to treatment manuals during their training. This poster addresses the relative lack of evidence-based psychotherapeutic treatment resources in general psychiatry residency training. We began with the assumption that an evidence-based treatment manual is the psychotherapeutic resource of choice. We accumulated manuals for the treatment of Major Depressive Disorder (MDD) and identified which have the most evidence supporting them and which are available free of cost.

A quality improvement project was initiated at East Carolina University General Psychiatry Residency Training Program to create a database of psychotherapy manuals to provide residents with evidence-based tools for treatment of Major Depressive Disorder (MDD). The goals of this project were to discover which manuals have the most evidence behind them, and among those manuals which are available free of cost. The search was limited to English language manualized psychotherapies for the treatment of Major Depressive Disorder (MDD) in adults that have been empirically supported by Randomized Controlled Trials (RCTs). Our methodology used a bottom-up design whereupon we searched for RCTs which presented evidence for the use of a particular psychotherapy manual in the treatment of MDD. Once identified, the East Carolina University Laupus Library computer system, with access to several major online journals, was used to search for these treatment manuals. An electronic database available to all East Carolina University psychiatry residents and faculty was created with the accumulated treatment manuals as well as the RCTs which support their use.

While reviewing these RCTs, we discovered a lack of consistency in how terms such as "treatment manual" and "manualized treatment" were applied by researchers. For example, the term "manual" is infrequently used to define a literal treatment manual. More often, "manual" is used to refer to books, chapters in textbooks, articles, essays or a combination thereof. Regardless of the term used to describe it, this treatment literature represents the resources the researchers actually used to conduct the psychotherapies which produced statistically significant improvements in patients with MDD.

The data was analyzed to discover which treatment manual has the most evidence for use in the treatment of MDD. Financial restraints are a barrier for many general psychiatry residency training programs. With this in mind, the data was further analyzed to create a list of psychotherapy treatment literature for MDD available free of cost. This information has assisted our program in identifying a subset of manuals that stands out as being particularly useful for resident training.

THE PREVALENCE OF BURNOUT AMONG PREMEDICAL STUDENTS

Lead Author: Diana M. Robinson, M.D.
Co-Author(s): Daniel Williams, M.D.

SUMMARY:

Objective: Burnout can affect medical professionals of all fields and tiers, but at what point does physician burnout begin to manifest itself? This study examines the first estimate of burnout rates in premedical students.

Participants: The survey respondents were premedical students, defined as actively pursuing acceptance into medical school to become physicians.

Methods: The authors administered the Maslach Burnout Inventory to students during summer break and fall semester final exams in 2013.

Results: Of the 224 initial survey responses, 92 (41%) were available with follow up data for comparison between the two time points. All (100%) of the premedical students had high levels of burnout in the depersonalization domain, while the personal accomplishment domain scores actually improved during final exams ($p < 0.0001$).

Conclusions: This study demonstrated that burnout is higher among premedical students than in medical students or residents.

COMPASSION-BASED BURNOUT REDUCTION

Lead Author: David C. Saunders, M.D.
Co-Author(s): Janna Gordon Elliott, M.D., Susan Evans, Ph.D., Elena Mayville, Ph.D.

SUMMARY:

Background: It may comes as no surprise that many medical students suffer from burnout. In recent years, this dark side of medical education has been documented widely â€“ with reports in publications ranging from respected medical journals to the New York Times. What is less understood is what exactly can be done to prevent the development of

medical student burnout in the first place, as there is a paucity of rigorous trials analyzing interventions to prevent burnout. Here, we present Compassion-Based Burnout Reduction (CBBR), a Weill Cornell Medical College pilot study taking place this academic year.
Goals and Objectives: Given the prevalence of medical student burnout, and the harm it wreaks on the development of compassionate, kind and ultimately successful physicians, the long-term goal of this study is to develop an intervention that medical schools across the country can employ to prevent the development of burnout in their students. The short-term goal is to test whether CBBR is effective in decreasing burnout symptomatology.
Hypothesis: CBBR, an eight week course in compassion-based meditation, will reduce symptoms of burnout, compassion fatigue, anxiety and depression.
Intervention: Eight participants from the first year class, and eight from the second year class will meet with the CBRR teacher once per week for one hour, over the course of eight weeks. Additionally, they will be expected to reflect upon class lessons and meditate on their own between each meeting. The protocol is based on the following eight-week intervention:
1. Developing Attention and Stability of Mind
2. Developing Insight into the Nature of Mind
3. Cultivating Self-Compassion
4. Developing Equanimity
5. Developing Appreciation and Gratitude for Others
6. Developing Affection and Empathy
7. Developing Compassion in Aspiration
8. Developing Compassion in Action
Methods: Primary outcomes are burnout and compassion-fatigue. Secondary outcomes are symptoms of anxiety and depression. Eight validated indices will be used to evaluate outcomes.
Results: The piloy study will take place during the 2014-2015 academic year. Results will be available by the time of the APA in May 2015.

COMMUNICATION BETWEEN PSYCHIATRY AND THE EMERGENCY DEPARTMENT: A MULTI-DISCIPLINARY RESIDENT-LED WORKSHOP

Lead Author: Pernilla Schweitzer, M.D.
Co-Author(s): Pernilla Schweitzer, M.D., Alexa Bisinger, M.D., Erick Hung, M.D.

SUMMARY:
The ACGME lists "Interpersonal and Communication Skills" as one of 6 core competencies, however, few programs have a strategy for teaching these. The growing multi-disciplinary approach to patient care highlights the need for communication between psychiatrists and other health care professionals. This is particularly important in acute settings. Surveys of residents at the University of California San Francisco (UCSF) indicated that communication with the emergency department was particularly problematic, leading to frustration, inefficiency, and suboptimal patient care. In order to address this knowledge gap, residents from the department of psychiatry collaborated with their resident peers in emergency medicine to develop a workshop on communication skills with the aim of promoting better workflow, collaborative care, appreciation of provider roles, and more positive interactions with providers in the emergency department. Psychiatry residents will be surveyed before and after the workshop in order to assess both reactions and learning. Based on these results, the workshop could be developed into a model for other residency training programs.

RESIDENT AND FACULTY EXPECTED MILESTONE ACHIEVEMENT BY POST-GRADUATE LEVEL IN ONE ACADEMIC PROGRAM

Lead Author: Manisha Shenava, M.D.
Co-Author(s): Manisha Shenava, M.D., Komal Nayak, M.D., Jessica G. Kovach, M.D.

SUMMARY:
Introduction: The Milestone Project provides a standard method of formative evaluation for U.S. psychiatric residents, but we are unaware of any guide for expected milestone achievement by post-graduate-year level. Faculty and resident perception of expected milestone level of achievement may differ. Given that self-assessment is generally poor among medical trainees (needs reference), resident and attending milestone self-assessment may differ from expected level of achievement.

Objective: The purpose of this study was to examine perceptions of expected achievement

by post-graduate year level as well as perceived personal level of milestone achievement by residents and faculty in one university program.
Method: A 20-minute, anonymous, voluntary survey was administered by email to residents and faculty in one university program.
Hypotheses:
1. Attendings will perceive themselves at higher levels (4-5) on the Milestone Project in all sub-competencies.
2. Both residents and attendings will expect that residents will progress from levels 1-4 as they advance from post-graduate year 1-4, respectively.
3. Resident post-graduate year will coincide with their perceived level on the Milestone Project in all sub-competencies.
4. Residents and attendings will perceive that a Milestone Project level 5 is attainable on select sub-competencies during four years of psychiatry training.
Results: Faculty and resident expected level of milestone attainment by year will be compared. Faculty and resident self-assessment of milestone attainment will be presented and compared.
Discussion/Conclusion: Implications of results for implementation of the milestone project in psychiatry residencies will be discussed.

ALCOHOL WITHDRAWAL: IS IT TIME TO END OUR BENZODIAZEPINE DEPENDENCE?

Lead Author: Humaira Shoaib, M.D.
Co-Author(s): Datrell Ward, MS1V, Li Zhang, MS111, Michele Petit, MS111, Rashi Aggarwal, MD.

SUMMARY:

Background: Alcohol use disorder and complications related to alcohol withdrawal are two of the most common conditions encountered by physicians across different medical settings. Alcohol withdrawal symptoms can range from sweating, anxiety and tremors to autonomic instability, hallucinations and life-threatening conditions such as seizures, and delirium tremens. Benzodiazepines have been a mainstay treatment for alcohol withdrawal. Though it is the most effective treatment, the side effects including dependence, sedation, ataxia, and confusion have created a question of alternate approaches. There is now a growing number of literature focusing on non-benzodiazepine therapy for alcohol withdrawal. The objective of this review is to explore the efficacy, safety, and side effects of non-benzodiazepine therapy in alcohol withdrawal.
Methods: Literature review
Results: We have reviewed several studies detailing interventions using non-benzodiazepine treatment that show its efficacy for alcohol withdrawal. The focus of this review will be limited to carbamazepine, oxcarbazepine, divalproex sodium, gabapentin, and topiramate as primary adjuvant therapies for alcohol withdrawal. Literature review shows that non-benzodiazepine treatment targeting the GABAergic pathways can be considered as one of the options in treating alcohol withdrawal. However, more studies are needed to further explore its efficacy against seizures and DTs.
Conclusions: Exploring new treatment options will allow the physician to better individualize patient care. In addition, benefit of using non-benzodiazepine treatment in withdrawal is to continue the same regimen for maintenance treatment in outpatient settings.

BRIGHT LIGHT THERAPY AS AUGMENTATION OF PHARMACOTHERAPY FOR TREATMENT OF DEPRESSION

Lead Author: Cornel N. Stanciu, B.Sc., M.D.
Co-Author(s): Thomas Penders, M.S., M.D., Sy Saeed, M.D.

SUMMARY:

Background: Bright Light Therapy (BLT) has shown efficacy and is accepted treatment for seasonal depression. It has been suggested that BLT may also have efficacy in non-seasonal depressions. Also, there is evidence that BLT may improve responsiveness to antidepressant pharmacotherapy.
Method: We searched the English language literature using keywords: Bright Light Therapy AND Major Depression, Bright Light Therapy AND depress*, Bright Light Therapy AND bipolar depression, Bright Light Therapy AND affective disorders, Circadian Rhythm AND Major Depression, Circadian Rhythm AND depress*, Circadian Rhythm AND Affective Disorder.
Studies meeting the following criteria were included in the final analysis:
Randomized control trials of treatment of Major Depression or Bipolar Depression using Bright Light Therapy at 5000 Lux together with

antidepressants. Studies of seasonal depression were excluded.
Following review of the initial 111 returns two of the authors independently judged each trial applying the inclusionary and exclusionary criteria. 10 studies were selected as meeting these criteria. Subjects in these studies were pooled using standard techniques of meta-analysis
Results: Nine RCTs involving 264 patients showed improvement using BLT augmentations versus antidepressant pharmacotherapy. The effect size was similar to that of other accepted augmentation strategies.
Conclusion: Analysis of randomized controlled trials of Bright Light Therapy suggests that BLT may augment the antidepressant effect of standard pharmacotherapy in the treatment of Major Depression and Bipolar Depression without seasonal effects. A randomized controlled trial using larger numbers of subjects with non-seasonal depression should be carried out to confirm the findings suggested by this analysis.

IS MENTORING THE NEW MANTRA IN RESIDENCY TRAINING?

Lead Author: Atika Zubera, M.D.
Co-Author(s): Rashi Aggarwal, M.D.

SUMMARY:

Aims:
1. To assess the utility of mentoring programs to address the challenges faced by the international medical graduates (IMG's) during psychiatry residency training.
2. To discuss the various variables influencing the success of the mentoring programs and the possible strategies that could be utilized to overcome the perceived barriers identified in the mentoring process.
Background:
IMGs are significant segment of the US physician workforce. About a third (33.68%) of all psychiatric residents are non-U.S.-born IMG's. The leading source countries for IMG's include India, Pakistan, China, and the Philippines. Several perceived challenges, needs, and gaps in training are faced by IMG's in US psychiatry residency programs especially during their initial few months. International medical graduates should be trained to better handle this transition into the residency training. Mentoring has been defined as ''the process whereby an experienced, highly regarded, empathic person (the mentor) guides another individual (the mentee) in the development and re-examination of their own ideas, learning and personal and professional development.''
Methods and Approach:
Literature review on the Pub Med search engine with the terms, "residency training, mentoring program and international medical graduates", was done to understand the different challenges and the different approaches taken to meet the needs of the International medical graduates. We reviewed eight review articles in the past ten years with the above search terms and found that mentoring programs have been proven to improvise the residency training but not all psychiatry residency programs have a formal mentoring program as part of their routine curriculum. Sambunjak et al in the systematic review, "mentoring in Academic Medicine" emphasized the role of mentorship in the personal development, career guidance, career choice, and research productivity. Some of the barriers that were identified in the success of the mentoring programs in the past were found to be mentors' and mentees' lack of time for the meetings, possible explanation for this was conflicting schedules, with resident rotations at multiple clinical sites. Other barriers include personal factors, relational difficulties and structural/institutional barriers. There has been little effort made to overcome such barriers which has led to failure in the mentorship process. Strategies that could address the above barriers should be utilized to help with the mentorship process.
Conclusions:
1. In spite of the fact that mentoring programs have been proven to improvise the residency training not all psychiatry residency programs have a formal mentoring program as part of their routine curriculum.
2. Barriers identified in the success of mentoring program like personality conflicts, lack of communication and commitment etc should be addressed early on to develop a successful mentoring program.

ASSOCIATION BETWEEN PCMH MEMBERSHIP AND HEALTHCARE UTILIZATION FOR BEHAVIORAL HEALTH PATIENTS SEEN IN THE EMERGENCY DEPARTMENT

Lead Author: Akuh Adaji, M.B.B.S., Ph.D.

Co-Author(s): Gabrielle J. Melin M.D., Ronna L. Campbell M.D., Ph.D., Christine M. Lohse, Jessica J. Westphal, David J. Katzelnick M.D.

SUMMARY:

Background

Evidence suggests that Patient Centered Medical Home (PCMH) implementation may be associated with decreasing unnecessary emergency department (ED) visits and preventing inpatient admissions for patients with chronic illness. Little is known about the impact of the PCMH on the behavioral health population seen in the ED. The aim of this study is to examine the impact of a multi-payer PCMH on health care utilization for behavioral health patients seen at a tertiary care center ED.

Methods

This was a retrospective health records review of consecutive patients who presented to the ED of the Mayo Clinic Hospital, St. Mary's Campus, in Rochester, Minnesota, a tertiary care academic ED with 73,000 annual patient visits. The electronic medical record and claims data of PCMH and non PCMH patients who presented and received a psychiatric consultation over a two year period was performed. Univariate and multivariable associations with the outcomes of admission and return visits within 72 hours were evaluated using logistic regression models and summarized with odds ratios (OR) and 95% confidence intervals (CI). Since some patients had multiple visits during the study, the multivariable models were also evaluated using generalized estimating equations to verify that the associations observed were similar after accounting for any correlation that might occur among visits from the same patient.

Result

Behavioral health patients presenting to the ED between January 1, 2012 and December 31, 2013 who provided research authorization were included, resulting in 5398 visits among 3815 patients. There were 2440 (45%) PCMH patients. Of the 5398 visits under study, 2983 (55%) resulted in an admission. Univariately, PCMH patients were less likely to be admitted compared with non-PCMH patients (OR 0.84; 95 % CI (0.76-0.94) p=0.002) and this remained statistically significant (OR 0.83; 95 % CI (0.74-0.93) p=0.001) in multivariate models. There were 457 (8%) patients who returned within 72 hours. Univariate associations showed that PCMH patients were more likely to return within 72 hours compared with non-PCMH patients (OR 1.25; 95 % CI (1.03-1.52) p=0.022) and this result remained statistically significant (OR 1.39; 95 % CI (1.13-1.69) p=0.001) in multivariate models.

Conclusion

PCMH membership was associated with lower inpatient hospitalization from the ED but higher 72 hour return visits to the ED. This suggests that further studies are needed to better understand the impact of PCMH interventions on health care utilization. Transitional care programs may be required to support behavioral health patients who do not get hospitalized to prevent repeated ED visits. Future research can investigate the impact of PCMH on quality and cost outcomes for behavioral health patients seen in the ED.

PREVALENCE OF REPORTED AND UDS CONFIRMED SUBSTANCE ABUSE AMONG PATIENTS ADMITTED TO A PSYCHIATRIC HOSPITAL IN HOUSTON, TX

Lead Author: Crispa Aeschbach Jachmann, M.D.

Co-Author(s): Jane E. Hamilton, Ph.D., M.P.H., M.S.W., Micah Knobles, M.D., Anastasia Pemberton, MS IV, Melissa Allen, D.O., Mill Aller, and Teresa Pigott, M.D.

SUMMARY:

BACKGROUND:

Substance use disorders are frequently co-morbid with other psychiatric disorders and lifetime rates of substance abuse are higher for psychiatric patient than for the general population. Substance abuse may contribute to the severity of psychiatric symptoms and the success of treatment but the prevalence among hospitalized patients is rarely studied. In past studies, self-report substance abuse data has been shown to provide a reliable basis for prevalence estimation.

METHODS:

The records of 381 adult patients admitted to one unit of a free standing psychiatric hospital in Houston, TX between 01/2013 and 07/2014 were evaluated. Substance use was evaluated using the NIDA Quick Screen (assessment of alcohol, tobacco, prescription drug, and illegal drug abuse in the past year) and patients with positive screens were evaluated with the NIDA

Modified ASSIST v2.0 (risk level based on substance abuse patterns in the past 3 months in 10 substance categories). UDS results were obtained from 329 of the sample patients.
RESULTS:
Of 381 patients, 45% were female with mean age of 34.5 years. Positive NIDA Quick Screens were found in 42% of patients. Compared to patients with a negative Quick Screen, positive patients were more likely to be male (68% vs. 45%), younger (mean ages 31.8 vs. 36.4 years), abuse nicotine (81% vs. 42%) and abuse alcohol (72% vs. 34%). The most commonly abuse substance was cannabis at 80% followed by cocaine at 48%, sedatives at 31%, hallucinogens at 23.6%, prescription stimulants and prescription opioids both at 22%, methamphetamines at 15%, street opioids at 11%, inhalants at 9%, and other substances at 6%. Moderate risk use was reported at about 50% across most substances with the exception of cannabis with 78% of users. Reported use of substances in multiple categories was common with cannabis being most commonly abused concurrently among all categories. Cannabis abusers were less likely to abuse other substances with a maximum 47% reported concurrent cocaine abuse. Abuse of substances in all 10 categories was reported by 4% of patients. UDS results obtained were positive in 38% of patients. Positive UDS results were found in 26% of patients who denied recent substance abuse on the self-report quick screen. These patients were 56% male with mean age of 36.3 years.
CONCLUSION:
Substance abuse is common among patients admitted to psychiatric hospitals. Abuse of substances in multiple categories was found to be a significant problem and abuse of hallucinogens was found to be surprisingly high. The abuse of prescription drugs is also concerning due to the role of physicians in diversion. The high rate of positive UDS results in patients who denied substance abuse calls into question the validity of the NIDA Quick Screen and ASSIST as substance abuse self-report tool. Optimal treatment of dual diagnosis patients would include concurrent focus on psychiatric and substance abuse.

A REVIEW OF THE ROLE OF ESTROGEN IN PSYCHIATRIC DISORDERS

Lead Author: Steven Aguilar, M.D.
Co-Author(s): Natalie Robinson, M.D., Roberto Castaos, M.D.

SUMMARY:
Psychiatric disorders, particularly the mood disorders such as depression and bipolar disorder, as well as thought disorders such as schizophrenia and schizoaffective disorder, continue to place a profound burden on society. Significant medical, social, economical and personal strain is experienced by patients with these diagnoses, as well as their families. Major advances have been made in the treatment of these disorders over the past two decades - the development of antidepressants with greater receptor selectivity, the introduction of the second generation antipsychotics, and use of exhaustively-researched psychotherapy techniques have lead to reduced disease burden. Despite such advances, there remains much to elucidate in the underlying etiology and pathophysiology of many psychiatric disorders. One area of particular interest in better understanding these disorders and their origins is in the gender differences found in the prevalence of such disorders. Women have a prevalence of depression up to twice that of men, and they are at two-thirds higher risk for being depressed. While the prevalence of schizophrenia in men and women is roughly equal, the disease course and its burden are characteristically different. Women tend to have greater pre-morbid functioning, later age of onset, and more favorable disease course. Such marked differences in disease characteristics and prevalence between men and women suggest an influential role of estrogen in the underlying neuroanatomical processes of these illnesses. Despite long-observed associations between estrogen and mental illness, limited data exist presently to inform clear, empirically-derived causal associations or treatment guidelines. In this review, the authors review proposed mechanisms for the role of estrogen in the development of these disorders. We review the utility of monitoring serum estrogen levels in certain patient populations. Additionally, emphasis is placed on the potential therapeutic role of supplemental estrogen in the management of certain psychiatric disorders.

MAINTENANCE ELECTROCONVULSIVE THERAPY FOR DEPRESSION WITH AND WITHOUT POSTTRAUMATIC STRESS

DISORDER; THE EFFICACY AND LONG TERM CLINICAL OUTCOME

Lead Author: Naser Ahmadi, M.D., Ph.D.
Co-Author(s): Lori Moss MD,
Chowdary Jampala MBBS, Nutan Vaidya MD

SUMMARY:

Background: Posttraumatic stress disorder (PTSD) and major depressive disorder (MDD) are frequently co-exist. Maintenance Electroconvulsive-therapy (mECT) is efficacious for the prevention of relapse/recurrence of MDD. This study investigated the efficacy and long-term clinical-outcome of mECT on MDD with and without PTSD.
Methods: This study is inclusive of 26 mECT with MDD and 10 mECT with MDD & PTSD with mean age 52Â±14 and 25%female who were followed for 6 years. The change in PTSD and MDD symptoms was assessed using Clinical Global Impression Scale (CGI). The 6 month hospitalization, suicide rate and all-cause mortality was assessed.
Results: At baseline, CGI was 5.8Â±0.2 in MDD and 6.0Â±0.3 in MDD & PTSD (P=0.8). After 12 month of mECT treatment, 177% improvement in MDD symptoms and 122% improvement in PTSD symptoms as compared to the baseline was noted (p=0.001). More robust reduction in depressive symptoms as compared to PTSD symptoms in response to mECT was noted (CGI: 2.1Â±0.2 vs. 2.9Â±0.2, p=0.01). No incident of 6-month hospitalization in MDD with and without PTSD observed. After 6 years follow up, there were no incident of suicide in MDD with and without PTSD. There was no statistically different in mortality rate in MDD with and without PTSD (0 vs. 1, p=0.3)
Conclusion: Maintenance ECT is independently associated with reduced symptoms of major depression and PTSD. Maintenance ECT is associated with long term favorable clinical outcome and our study revealed no suicide and mortality incidence over 6 years of follow up.

RETIREMENT AGES OF PSYCHIATRISTS

Lead Author: Brittany B. Albright, M.D., M.P.H.
Co-Author(s): Stephen Petterson, Ph.D., William F. Rayburn, M.D., M.B.A.

SUMMARY:

INTRODUCTION: Given current psychiatric workforce shortages and over half (56.7%) of practicing adult psychiatrists being age 55 years or older, it is important to determine average retirement ages for psychiatrists to predict future workforce needs. The objective of this study is to define the median retirement age for psychiatrists and examine how this compares with physicians in other specialties.
METHODS: This descriptive study was based on American Medical Association (AMA) Masterfile survey data from the most recent six years (2008-2013). Data from the National Provider Identifier (NPI) was used to correct for the known upward bias in retirement ages when using the AMA Masterfile survey. Physicians were included only if they described themselves as being in active practice as a psychiatrist. The primary outcome was construction of discrete retention curves, akin to Kaplan Meier curves. Secondary outcomes involved comparisons in median ages of male and female psychiatrists with physicians in other medical disciplines.
RESULTS: Responses to the AMA Masterfile survey included 28,610 psychiatrists and 443,410 physicians between ages 55 and 80 years. According to the Masterfile and NPI data, a decline in the number of psychiatrists first began at 55 years old and most retired before age 70. Although most nearing retirement were male, with the study having a 3:1 male to female ratio, the gradual decline in practicing psychiatrists did not differ between genders. Median ages of retirement were similar between psychiatrists (66 years) and general surgeons (67 years) and were higher than other specialties, with family physicians reporting the youngest age at retirement (63 years). In every specialty, female physicians retired at younger ages than male physicians, with an average difference of two years in psychiatry.
CONCLUSIONS: Psychiatrists begin to retire at age 55, with most retiring by age 70. The median age of retirement for psychiatrists is 66 years. Ages of retirement in psychiatry are older compared to practitioners in other specialties.
KEY WORDS: age, psychiatrist, retirement
REFERENCES:
Association of American Medical Colleges: 2012 Physician Specialty Data Book; available at https://members.aamc.org/eweb/upload/2012%20Physician%20Specialty%20Data%20Book.pdf

ASSOCIATION BETWEEN INFLAMMATION AND PSYCHIATRIC ILLNESSES

Lead Author: Sadaf Ashfaq, M.D.
Co-Author(s): Sabeen Khaliq, MD

SUMMARY:

Abstract:
The relationship between inflammation and psychiatric illness is becoming an increasingly important area of study given that there is now a clear association between the two. Inflammation, a protective immune response to injury or destruction of tissues, serves to destroy, dilute, or wall off both the injurious agent and the injured tissues. In the context of inflammation, both the innate immune system and the adaptive immune system impact the pathogenesis of several psychiatric disorders. More specifically, "The macrophage theory of depression," proposes that cytokine secretion is linked to depression, also explaining the association of depression with coronary artery disease, rheumatoid arthritis, stroke and other diseases in which there is an inflammatory process occurring. The concept of "Sickness Behavior", depressive symptoms resulting from inflammation, endorses a similar line of thinking. Additionally inflammation is linked to the pathogenesis of Autism, Schizophrenia, and Bipolar disorder. It is reasonable to hope that future research will find ways to use the association of inflammation and mental disease for novel methods of diagnosis and management.

DIAGNOSIS AND TREATMENT OF DEPRESSION IN THE PRIMARY CARE SETTING

Lead Author: Sadaf Ashfaq, M.D.
Co-Author(s): Sabeen Khaliq, MD

SUMMARY:

Abstract:
Depression in the elderly is a major public health problem resulting in unnecessary suffering for the affected individual. It is associated with excess mortality rates among depressed older adults. Since the majority of these patients present to a primary care physician during the early manifestation of their depressive symptoms, recognition of early symptoms by physicians can help avoid progression and subsequent consequences of depression. In addition, to providing adequate care, it is important to have a good collaboration between the primary care physician and the mental health professionals. This article reviews the current literature on this common and multifaceted condition and examines various concepts of late-life depression, its diagnosis and treatment options.

DISPARITIES IN THE POPULATION OF PSYCHIATRY CONSULTS: AN ANALYSIS OF RACE, GENDER, AND INSURANCE STATUS

Lead Author: Katherine A. Backes, M.D.
Co-Author(s): Kara Brown, M.D., Robert Lloyd, M.D., Ph.D., Lisa Rosenthal, M.D.

SUMMARY:

Context:
Considerable disparities exist in the delivery of some mental health care services. Whether disparities exist among psychiatry consults based on race, gender, or insurance status remains to be fully elucidated.
Objective:
To examine if psychiatric consultation in the inpatient setting is correlated with race, gender, or insurance status.
Methods:
De-identified data was collected from Northwestern Medicine Enterprise Data Warehouse. All patients (n=617,253) that were hospitalized between 2007 and 2010 were included in the study. Patients that received a psychiatry consult were compared to those that did not receive a psychiatry consult during this period. Linear regression was performed with race as the independent variable and psychiatric consultation as the dependent variable. Gender and financial class were used as covariates.

Results:
In comparison to white patients, psychiatric consultation was more likely for black patients (OR 1.51, $p<0.001$), while less likely for Asian (OR 0.65, $p<0.001$) or Hispanic (OR 0.65, $p<0.001$) patients. There was no difference between Native American/Alaskan and white patients (OR 0.82, $p=0.63$). After accounting for race, women had significantly greater odds of having a consult placed as compared to men (OR 1.51, $p<0.001$). A notable disparity was found between Medicaid and Medicare patients

versus privately insured patients (OR 4.71, p<0.001; OR 4.76, p<0.001 respectively). "Self pay" patients had lower odds compared with privately insured patients (OR 0.49, p<0.001).
Discussion/Conclusion:
There was a significant difference in the odds of psychiatry consults received based on race, gender, and insurance status at this large tertiary academic center. These results may reflect trends within the larger medical community.

THE ROLE OF HORMONES IN CAUSING MOOD SYMPTOMS AT VARIOUS STAGES OF WOMEN'S LIFE CYCLES

Lead Author: Jessica Bayner, M.D.
Co-Author(s): Mehr Iqbal, M.D., Mubeena Naeem, M.D., Asghar Hossain, M.D.

SUMMARY:

In the United States alone, approximately 12 million women experience clinical depression each year. With specific regard to postpartum major depression, the rates have been found to range from 4.4% to 9% of the global population. According to the National Comorbidity Survey (NCS), the prevalence of Major Depressive Disorder (MDD) between ages 15 and 54 years is 12.7% for men, with a nearly twofold greater lifetime risk for women at a prevalence of 21.3% (odds ratio [OR] 1.7, 95% confidence interval [CI] 1.5â€“2.0). Depression in women may develop during different phases of life: premenstrual, pregnancy, postpartum, perimenopausal and postmenopausal. Infertility, miscarriage, oral contraceptives, and hormone replacement treatment are the events that have been reported to cause affective symptoms in women. Progesterone withdrawal has been proposed as an underlying factor in premenstrual syndrome and postpartum depression and well as during menopause. Theories as to the pathophysiology involved with mood disorders and progesterone implicate varying levels of allopregnanolone. For example, during pregnancy allopregnanolone is synthesized by fetoplacental tissues, and its levels are raised 10 times more than the maximum amount seen during menstrual cycles. After delivery, the allopregnanolone level rapidly drops within several days, and has been attributed to postpartum depression. Decreased levels of allopregnanolone may also contribute to mood symptoms observed in menopausal women.

The purpose of our study is to raise awareness about the correlation between the affective symptoms that women experience and the changes in their hormone levels. This relationship is explored in our case study, with the inclusion of patients suffering from postpartum depression. It is very important for clinicians to take into account the phases of a patient's menstrual cycle while evaluating her for mood disorders, specifically depression. Moreover, patients' blood levels and their metabolites should be reviewed in order for them to be ruled out as causative factors of their condition before an antidepressant is prescribed. Thus, in addition to having diagnostic implications, such information can affect the recommended treatment for a patient's mood symptoms.

EXAMINATION OF THE CO-OCCURRENCE OF VITAMIN D DEFICIENCY AND DEPRESSION IN AN INPATIENT ALCOHOL DEPENDENT POPULATION

Lead Author: Kranti Kiran Bhagi, M.D.
Co-Author(s): Jennifer Michaels, M.D., Sharon Mozian, M.D., Chris Biernacki, P.A., Casey Joseph, Louis Gainer.

SUMMARY:

Summary:
Introduction/hypothesis: Vitamin D defficiency and its association with development of cardio-metabolic disorders, autoimmune diseases, mineral deficiencies and possibly Major Depressive Disorder has long been studied. There is limited evidence available in literature that correlates alcohol use disorder with low vitamin D levels leading to depressive symptoms. The aim of this study is to investigate whether there is any association between vitamin D deficiency and depressive symptoms in an inpatient alcohol dependent population admitted to a detox unit.
Method: An IRB approved cross- sectional study was conducted in an inpatient detox unit at Berkshire Medical Center. 102 patients, 32 women and 70 men, with a diagnosis of Alcohol Use Disorder (AUD) were enrolled for the study. Structured questionnaire were administered to establish diagnoses of AUD. HAM-D scale was used to screen patients for depressive symptoms. Vitamin D deficiency was defined

as a serum 25-hydroxyvitamin D concentration of < 20ng/ml.
Statistics: Analysis consisted of analysis of variance and correlation coefficient r, Minitab version 16 was used.
Results: Comparison of HAM-D score of two groups, male and female, showed significant P and F values. The P value and F value obtained from ANOVA single factor were 0.013866 and 6.2774226 respectively. F critical value being 3.936143. No significant correlation was found when vitamin D level was compared to Hamilton Score. Also, no significant correlation was found when specific age groups were compared after splitting the age groups in 5 year segments. Gender correlation between Vitamin D and Hamilton Score was also not significant.
Conclusion: Our finding suggest that there is no significant correlation between vitamin D deficiency and depressive symptoms in alcohol dependent population, however, females who have diagnosis of alcohol use disorder are more likely to suffer from depressive symptoms as compared to males.

VITAMIN D AND INPATIENT MENTAL HEALTH

Lead Author: Hetal Bhingradia, M.D.

SUMMARY:

Objective: Research has shown that Vitamin D deficiency is common in the general public. A recent study from 2012 has also shown that Vitamin D deficiency is more severe among psychiatric inpatients. Vitamin D deficiency has gained widespread interest as it relates to the etiology and adjunctive treatment of psychiatric disorders. It has been suggested that effective detection and treatment of inadequate Vitamin D levels in persons with mental disorders may be an easy and cost-effective therapy that could improve patients' long-term health outcomes as well as their quality of life. However, little information is known as to the correlation of Vitamin D deficiency with specific psychiatric disorders or the severity of psychiatric symptoms. The primary objective of our study was to further explore the degree of Vitamin D deficiency as it correlates with severity of psychiatric symptoms in the inpatient population. We wished to study whether the degree of psychopathology is inversely correlated with Vitamin D levels and if the correlation between Vitamin D levels and psychopathology is dependent on specific diagnoses.
Method: Inpatient records were reviewed looking for Vitamin D results at Beth Israel Medical Center for patients who are admitted and discharged over a four-month period. Along with diagnosis, the following rating scales were reviewed to measure the degree of pathology: the Hamilton Depression Rating Scale (HAM-D), the Brief Psychiatric Rating Scale (BPRS), and the Young Mania Rating Scale (YMRS). Scores on individual items and subscale scores were compared between groups, and linear discriminant analysis was applied to determine the combination of items that best discriminated between groups.
Results: Results were evaluated for a total of 55 patients, comprised of 16 females and 39 males. Demographics of the patients consisted of 55.5% of patients with psychotic disorders and 44.5% of patients with varying mood disorders. There were two significant correlations that were found: between BPRS and HAM-D and BPRS and YMRS. If one had a high BPRS, they also had high scores on the HAM-D and YMRS. The vice versa was not found to be true. There was found to be a statistical difference between the Vitamin D levels of schizoaffective patients and Mood disorder NOS and Schizophrenia patients. This demonstrated that schizoaffective patients on the whole had lower Vitamin D levels than the other diagnosis.
Conclusion: There was no correlation between Vitamin D levels and the severity of symptoms amongst various psychopathology. There does however, appear to be a correlation between Vitamin D levels and Diagnosis type. The major difference in diagnosis type and Vitamin D levels was between Schizoaffective Disorder and both Mood Disorder NOS and Schizophrenia. Further study is needed on whether augmentation strategy using Vitamin D may be beneficial for mental illness, and in particular, certain Diagnosis types.

PREVALENCE AND IMPACT OF SUBSTANCE AND ALCOHOL MISUSE ON COLLEGE STUDENTS PRESENTING TO THE EMERGENCY DEPARTMENT AND EVALUATION OF PRACTICAL REFERRALS

Lead Author: Derek M. Blevins, M.D.

Co-Author(s): Diana Robinson, MD, Surbhi Khanna MD, Priyanka Vakkalanka, MA, ScM, Chrisopher P Holstege, MD, Nassima Ait-Daoud, MD;

SUMMARY:
The passage from high school to college is one accompanied by significant role transitions that occur during late adolescence, as relationships with parents, siblings, peers and romantic partners change and develop. SAMHSA data from 2010 showed a difference of +24.3% past-month alcohol users between 16-17 year olds and 18-20 year olds, and a +21.1% increase from 18-20 year olds to 21-25 year olds. More specifically, 18-22 year olds enrolled full time in college had a higher prevalence than those not enrolled in full time college of past-month alcohol use (63.3% versus 52.4%), binge drinking (42.2% versus 35.6%), and heavy drinking (15.6% versus 11.9%). The SAMHSA data also showed that illicit drug use was highest among 18-25 year olds (21.5% versus 10.1% in the 12-17 age group and 6.6% in the 26 and older age group). However, unlike alcohol use, the prevalence of illicit drug use was slightly lower in 18-22 year old full time college students compared to their peers (22% versus 23.5%, respectively). Regardless, the data reveal that a substantial number of emerging adults, particularly full time college students, are engaging in substance use behavior that has the potential to cause temporary and lasting effects from the biological to the societal level.
We plan to present data from a cohort of college student attending the University of Virginia who presented to the Emergency Department (ED) and whose medical records indicates misuse of alcohol, pharmaceutical drugs, or illicit substances through specific clinical diagnostic codes based on the ICD-9-CM. The proportion of unique substance-related ED visits will determine the prevalence of substance and alcohol misuse for each academic year.
Clinical presentation characteristics, such as intoxication (clinically or by positive blood alcohol level or urine toxicology screening), clinical withdrawal, delirium (altered mental status), "substance induced" diagnoses (depression, anxiety, mania, psychosis, suicidal or homicidal ideation) and related physical complications will be determined by review of ED documentation. The prevalence of each of these outcomes will be evaluated and stratified by type of substance. This informs us of the impact of substance or alcohol misuse on the clinical presentation and treatment during their ED admission.
This is a significant topic as substance misuse can prevent emerging adults from successfully transitioning into adult roles and responsibilities, with potential long-term consequences. At the biological level, various regions of the brain continue to develop and mature at different intervals throughout this time period, and these active processes appear to make the brain more susceptible to neurotoxic processes that can result from substance use. These neural structural changes have implications for changes in cognition as well as further development of substance use disorders.

PREVALENCE OF THE COMMUNICATION OF SUICIDAL INTENT IN SUICIDE DECEDENTS IN THE LAST YEAR OF LIFE

Lead Author: Tanner J. Bommersbach, B.A.
Co-Author(s): Megan M. Chock, M.P.H., J. Michael Bostwick, M.D.

SUMMARY:
Objective: The fact that suicidal ideation is considered one of the strongest predictors of suicide completion suggests that medical providers recognizing and responding to suicidal ideation could serve as an effective prevention strategy. While recent studies indicate that many suicide decedents have used healthcare in the 12 months before death, very little data exists to show how many of these patients express suicidal ideation during these healthcare visits. This study explored what percentage of suicide decedents expressed suicidal ideation a month, six months, and a year before death in outpatient, inpatient, and emergency settings. It also evaluated the types of providers to which suicidal ideation is most commonly expressed.
Methods: Using death certificate data in the Rochester Epidemiology Project, 86 adult suicide decedents from the years 2000-2009 in Olmsted County, MN, were identified and randomly matched with 258 age and sex-matched controls. A blind retrospective chart review was conducted to determine how often subjects expressed suicidal ideation to a healthcare provider in the year before death.

Positive indicators included chart records of suicidal statements made to a provider and/or a value > 0 on question #9 of the PHQ-9. The type of provider to which intent was communicated was also recorded along with the presence of a mental health diagnosis. Conditional logistic regression models were used to compare characteristics of healthcare use between suicide decedents and matched controls.
Results: From the sample of 86 suicide decedents, 73 individuals (84.9%) had contact with a health care provider in the 12 months before death, and 17 (23.3%) expressed suicidal ideation/intent one or more times. Of 51 decedents who had visits in the 6 months before death, 16 (31.4%) expressed suicidal ideation/intent. Finally, of 29 decedents who had visits in the month before death, 5 (17.2%) expressed ideation/intent. None of the 258 controls ever expressed suicidal ideation. Suicidal ideation or intent was expressed a total of 38 times by 17 different decedents in the year before death. Of these 38 incidents, ideation or intent was communicated to a physician 34 times (89.5%), to a social worker 3 times (7.9%), and to a physical therapist 1 time (2.6%). Suicide decedents were significantly more likely to have a mental health diagnosis (44/86 (51.2%)) compared to controls (30/258 (11.6%); $p < 0.0001$).
Conclusion: In a sample of 86 suicide decedents, 73 used healthcare in the year before death but less than a fourth expressed suicidal ideation or intent. For those voicing suicidality, the vast majority did so to physicians, and mental health diagnoses were a significant predictor of suicide. Strikingly, not one control expressed suicidal ideation, suggesting that even though the majority of individuals who eventually kill themselves do not speak of intent to their doctors, those who do should be considered at extremely high risk.

ANXIETY AND JOINT LAXITY IN SCHIZOPHRENIA ARE ASSOICATION WITH POSITIVE SYMPTOMS

Lead Author: Andrea Bulbena
Co-Author(s): Antonio Bulbena, M.D., PhD(Cantab), M.Sc, Alfons Rodriguez, M.D. Oscar Vilarroya, M.D.

SUMMARY:

Introduction: The aim of the present study is to report whether there is a different clinical profile of schizophrenic patients suffering from comorbid anxiety, in comparison to those without comorbid anxiety
Methods: One hundred and fourty patients from an outpatinet mental health clinic with DSM-IV diagnosis of schizophrenia were assessed with the following scales : Hospital del Mar criteria for joint Hypermobility (JHdMar), Positive and Negative Syndrome Scale (PANSS), Fear Survey Schedule (FSS) and Social Adjustment Scale (SAS). Socio-economic variables were also obtained.
Results: The prevalence of anxiety disorders was 29.8% in this sample. Overall, 26.6% of the patients with schizophrenia met criteria for Joint Hypermobility Syndrome (JHS) using Hospital del Mar criteria. A logistic stepwise regression model was built for the presence of comorbid anxiety as dichotomic dependent variable. The model reached significance ($F = 4.94$; $p = 0.02$) and included the PANNS positive whereas PANSS Negative, sex and social adjustment were discharged; age approached but not reached significance. Therefore according to these results, controlling for age and sex, schizophrenia comorbid with anxiety is associated with higher incidence in positive signs.
Conclusion: Among the 30% of schizophrenic patients suffering from comorbid anxiety disorders (Panic, Agoraphobia, Social phobia and Specific phobia) the clinical phenotype found includes, together with the well established presence of the Joint Hypermobility syndrome, a significant trend towards more positive symptoms.

CASE REPORT OF COMPLEX PTSD RESISTANT TO COGNITIVE PROCESSING THERAPY AND IMPROVED BY ACCELERATED RESOLUTION THERAPY.

Lead Author: Svetlana Caragheaur, M.D.

SUMMARY:

Case report of Complex PTSD resistant to Cognitive Processing Therapy and improved by Accelerated Resolution Therapy.
Svetlana Caragheaur MD, Wendi Waits MD
Introduction: PTSD is a relatively common mental health morbidity in the United States military population, with prevalence rates ranging from 6-25% among combat veterans (Kilpatrick DG, Oct 2013). CPT and Prolonged

Exposure have the strongest scientific support for the treatment of PTSD in combat veterans, but both modalities can be psychologically taxing and are often accompanied by a high drop-out rate. ART is an emerging type of psychotherapy that bears some similarity to Eye-Movement Desensitization Reprocessing (EMDR), but is more proscriptive and has demonstrated impressive efficacy in a shorter period of time.

Case: A 28 year old white male active duty U.S. Navy corpsman (medic) presented with symptoms of PTSD, including intrusive memories, nightmares, avoidance, hypervigilence, insomnia with multiple interruptions and night perspiration. He reported growing up in a foster home, where he experienced recurrent abuse and witnessing of violence during childhood. In adulthood, the patient had four deployments with combat trauma exposure and multiple life-threatening situations. He was diagnosed with PTSD and consented for CPT treatment. Prazosin was initiated for his insomnia and nightmares.

After one month of treatment, the patient reported side effects from Prazosin and elected to discontinue this medication. Concurrently, he consented to and initiated a trial of CPT, which required that the patient write an impact statement describing the most traumatic event in his life. Despite several attempts, he was unable to write the impact statement, citing extreme psychological distress while trying to complete the task. His baseline PTSD checklist (PCL-C) score remained in the range 61-67, reflecting ongoing active PTSD symptoms. He was offered ART and noted significant improvement after just one session. His PCL-C decreased from 67 to 42 and he reported improved quality of life and longer sleep duration, as well as decreased night perspiration, nightmares, hyper-vigilance and cues.

Discussion: In this particular patient with complex PTSD, it was difficult to complete the recommended course of CPT due to the extreme psychological distress caused by the memories of the trauma event.With ART treatment, the patient is not required to describe the trauma event in great detail. Instead, he is only required to visualize the event and can elect to share with the therapist as many or as few of the details as he desires.

Conclusion: ART may have particular utility in addressing Complex PTSD in that it permits the patient to avoid prolonged exploration of painful memories, especially those associated with sustained trauma. Further research is needed to explore its effectiveness as compared to established therapy modalities for PTSD.

MEDICATION MANAGEMENT GROUPS FOR CHRONIC MENTAL ILLNESS

Lead Author: Stephanie Chen, B.A.
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SUMMARY:

Objective: To examine the feasibility and acceptability of medication management groups (MED groups) for patients with chronic psychiatric illness.

Methods: Outpatients in a county psychiatry clinic were switched from individual to group treatment if they had been in care > one year. 127 patients with complex conditions or medications were assigned to MED groups co-led by an attending psychiatrist and resident; 136 others were assigned to rehabilitation groups co-led by an attending psychologist and resident. Approximately 6-8 patients were assigned per group, based on demographics and/or diagnosis. Groups were held every 2-4 weeks; sessions lasted 1-1.5 hours. Leaders determined session content; MED group leaders wrote refill prescriptions within sessions. Demographics, clinical characteristics, and service use of group patients were examined using administrative data. Patient and provider experiences were explored using semi-structured interviews with 20 patients and 11 providers.

Results: Of 127 patients assigned to MED groups, 49 were reassigned back to individual visits after providers disbanded groups mostly due to lack of interest. Among the 78 remaining in MED groups, mean age was 52 years; 53% were men; 65% LatiP2- 45% had primary depressive disorders, 22% bipolar disorder, 21% psychotic disorders, and 12% anxiety disorders. On average, they had received care in the clinic for 7 years. Compared to patients in rehabilitation and disbanded groups, those in MED groups were older, more likely minorities, and more likely to have depressive and bipolar disorders. Over 30 months, patients in MED and rehabilitation groups had similar outpatient use

(mean=20 clinic visits), attrition rates, and emergency room use. At 30 months, 28% of medication management patients continued in groups, compared to 21% of rehabilitation group patients. In semi-structured patient interviews, a majority preferred individual to group visits. They did report group benefits such as sharing experiences with others, social support, and education. Participation barriers included lack of transportation, scheduling conflicts, low group attendance, and stress from listening to others' problems. Suggestions for improvement included having larger groups, more frequent sessions, greater patient homogeneity, less provider turnover, and more education. In provider interviews, most appreciated that groups allowed their patients to interact and help each other, and valued seeing patients interacting. However, they felt they knew their patients less well than those in individual treatment and had privacy concerns. They recommended larger groups, greater patient selectivity, and voluntary participation.
Conclusion: Medication management groups may be feasible and acceptable to patients and providers in community mental health practices. Such groups may benefit from careful patient selection and defined structure and content.

THE BEAUTY QUEUE: IS THERE A CORRELATION BETWEEN COLORISM AND THE PREVALENCE OF MOOD DISORDERS IN WOMEN OF AFRICAN DESCENT?

Lead Author: Aminata Cisse, M.D.

SUMMARY:

The different shades of color found in people of African ancestry have created much dissension within the race. Colorism, a construct based on the darkness or lightness of the skin, has been at the forefront of intra-racial discrimination. The sociological and psychological canon has addressed the macro effects of colorism; however, there's limited research on colorism and its effect on the mental health of black women. What are the peculiarities of colorism and its effects on black women? What are colorism's intra-psychic challenges and how are they manifested? This study will comprise data collected from 200 women of African ancestry. It aims to explore the correlation between the prevalence of mood disorders in black women and colorism. Methods: administer a demographics questionnaire, a skin color questionnaire; Beck's Depression Inventory and a Rosenberg Self Esteem Scale, via an online survey tool.

A REPORT OF HYPOTHYROIDISM, THE GREAT MIMICKER OF MENTAL ILLNESS; WITH REVIEW OF THE LITERATURE

Lead Author: Omar Colon, M.D.
Co-Author(s): Omar Colon, M.D., Atifa Nadeem, M.D., Jay Littelfield Ms-3, Maria Saiz, M.D., Heather Greenspan, M.D. , Asghar Hossain, M.D.

SUMMARY:

Thyroid imbalance has a high incidence in the general population. It is an endocrine disorder in which the thyroid gland fails to produce sufficient thyroid hormone to reach the body's demand. This is typically due to a failure to stimulate the gland from the pituitary, or due to a dysfunction of the thyroid gland itself. Classical symptoms of hypothyroidism include intolerance to cold temperature, lethargy and fatigue, constipation, and dry skin. Psychiatric symptoms can range from depression to mania to anxiety, and it can progress to severe psychosis. Myxedema madness is an uncommon sequela of untreated hypothyroidism. Confusion, altered mental status, can result from the lack of metabolic stimulation from these thyroid hormones, which can then proceed into psychosis.
A 33 year old, single male was brought into our facility for evaluation of his odd behavior. He has been hearing voices and has been exhibiting worsening paranoia for the past 7 years. The family reported a history of paranoid and persecutory delusions as well as worsening aggressive and assaultive behavior towards other family members during that time. There was no past history of psychiatric illnesses. The patient reported that he has anxiety, shortness of breath, and palpitations. He reported that he is paranoid of people "messing with" his belongings and that he has heard commentary, non-command type voices, for the past three years, and that he has been seeing demons inside of his body. There is no history of substance abuse. Physical exam was benign and urine toxicology screen was negative. CBC/CMP were normal, and TSH was extremely elevated at 101.84 ÂµU/mL. The

patient was transferred to the acute inpatient unit and treatment of his hypothyroidism was started. 2 weeks later, the patient was discharged in stable condition with full resolution of his symptoms.
Hypothyroidism develops slowly, and the early complaints can be easily overlooked. Psychiatric symptoms are common with progression of untreated hypothyroidism, however they do not typically present after some time of a decrease in thyroid gland functioning. In this case, the psychotic symptoms, delusions, and aggressive behavior is what brought the patient in for medical treatment in the first place. The patient was never diagnosed in his 7-year presence of symptoms. Only after presentation was the patient's blood analyzed for TSH was he diagnosed with hypothyroidism. Psychosis may, in some patients, mask the underlying hypothyroidism and hence, can either be over looked or misdiagnosed as functional psychosis, rather than due to a medical condition. This confusion can then lead to delay in treatment or worsening of the condition. This report shows the importance of a thorough emotional and psychological evaluation of the patient.

A CASE OF ACOUSTIC NEUROMA-INDUCED PSYCHOSIS

Lead Author: Humera N. Danwar, M.D.
Co-Author(s): Vineeth P. John, M.D.

SUMMARY:

Background: Acoustic Neuroma is a tumor composed of Schwann cells that most commonly involves the vestibular division of the 8th cranial nerve. Hearing loss is the most common finding, followed by tinnitus, headaches, vertigo and trigeminal disturbances. While psychiatric manifestations are generally considered rare, there have been various case reports of Acoustic Neuroma in the Cerebellopontine angle (CPA) to be associated with a wide range of psychiatric symptoms including psychosis (auditory and visual hallucinations, paranoia and delusions) mood changes and pathological laughter. Though the mechanism remains poorly understood, the neuromas may compress surrounding structures, resulting in or producing psychiatric symptoms through disconnecting or affecting limbic pathway.
Case Report:Mrs. F is a 73 year old Caucasian female who follows up regularly at the outpatient clinic for unilateral AH and paranoia. The patient had no psychiatric history prior to her inpatient hospitalization after an acute onset of psychotic symptoms including paranoia, bizarre beliefs, and clear unilateral auditory hallucinations (AH). Initial Head CT showed no significant abnormalities that could explain her symptoms. She was initially treated with quetiapine, later switched with Risperidone along with addition of Citalopram to address depressed mood. After discharge her symptoms subsided, but returned, prompting another admission within a month. At this point, the patient's auditory hallucinations were still unilateral in nature, coming only from her left ear. Repeat CT showed no changes. The patient then received an MRI, which showed the presence of an acoustic neuroma in left CPA. Having been given a concrete explanation to the AH, her symptoms subsided temporarily. Gamma knife surgery was considered at one point, but was not performed due to the clinical improvement. Today she is still taking Risperidone, and continues to report unilateral AH and paranoia.
Discussion:Mrs. F psychosis is considered most likely Acoustic Neuroma-Induced. She had no past psychiatric history and the symptoms developed very suddenly without any precipitating factor. In addition, the persistent unilateral nature of her auditory hallucinations correlates with the presence of neuroma on the same side. Previously published reports suggest that disturbances in the CPA region can cause psychiatric symptoms, including psychosis and resolution of the symptoms occur with excision of the lesion.
Conclusion: In conclusion, our case with clinical and MRI findings demonstrates that suddenly developed psychotic symptoms at a later age may be due to a right CPA lesion-Acoustic Neuroma. Hence, psychiatrists should be aware that imaging studies may be utilized as essential screening tools for determining an organic basis for psychosis especially with atypical features such as unilateral auditory hallucinations. Also it is important to consider the neurosurgical referral for recent treatment options.

A MULTIPLE INDICATORS MULTIPLE CAUSES (MIMIC) MODEL OF INTERNAL BARRIERS TO DRUG TREATMENT IN CHINA

Lead Author: Huiqiong Deng, M.D., Ph.D.
Co-Author(s): Chang Qi, M.D., Yanhui Liao, M.D., Brian C. Kelly, Ph.D., Jichuan Wang, Ph.D., Wei Hao, M.D., Ph.D., Tieqiao Liu, M.D., Ph.D.

SUMMARY:
Aims: To investigate the effect of individuals' characteristics on internal barriers to drug abuse treatment in China. Design, setting and participants: We recruited a sample of 262 Chinese drug users from three drug rehabilitation centers in Hunan Province, China. All completed a survey containing the 18-item internal Barriers to Treatment Inventory (BTI). Methods: We applied a Multiple Indicators Multiple Causes (MIMIC) approach to investigate the effect of gender, age, married status, education, primary substance used, duration of most often used drug and drug treat experience on the structure of a four-factor model consisting of "Absence of Problem (AP)", "Negative Social Support (NSS)", "Fear of Treatment (FT)" and "Privacy Concerns (PC)". Findings: Drug users of various individual characteristics reported different internal barriers to drug abuse treatment. For age group, younger participants were more likely to report having NSS and PC. For primary drug used, ice users were more likely to report AP and NSS, while less likely to report item 14 in FT. For the factor, ever being in drug treatment, people who ever had drug treatment experiences were more likely to report AP. People with longer duration of drug use and being married were more likely to give a lower response on item 5 in AP and item 17 in PC, respectively. Conclusions: Different tactics aimed at negative attitude reduction and recognizing addiction mechanism must be utilized to successfully reach this wide ranging group of individuals.

EVALUATION OF CLINICAL AND INFLAMMATORY PROFILE IN PATIENTS WITH OPIOID ADDICTION AND COMORBID PAIN: RESULTS FROM A MULTI-CENTRE INVESTIGATION

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Co-Author(s): M. Constantine Samaan, M.D., MSc., Monica Bawor, BSc., James Paul, M.D., Carolyn Plater BScN., Guillaume Pare, M.D., MSc., Andrew Worster, M.D., Michael Varenbut, M.D., Jeff Daiter, M.D., David C. Marsh, M.D., Dipika Desai, MSc., Lehana Thabane, PhD., and Zainab Samaan MBChB., MSc., PhD.

SUMMARY:
Background: Chronic pain is the most commonly reported comorbidity among patients with opioid addiction receiving methadone maintenance treatment (MMT), with an estimated prevalence ranging between 30 to 55%. Evidence suggests patients with comorbid pain are at high risk for poor treatment response including continued illicit substance use. Due to the important relationship between the presence of pain and illicit substance abuse within the MMT setting, it is imperative we target our efforts toward understanding the characteristics of this patient population.
Methods: The primary objective of this study was to explore the clinical and inflammatory profile of MMT patients reporting comorbid pain. This multi-centre study enrolled patients (n=235) on MMT for the treatment of opioid dependence. Clinical history, blood and urine data were collected. Blood samples were obtained for inflammatory markers serum levels (TNF-Î±, IL-1ra, IL-6, IL-8, IL-10, IFN-Î³ and CCL2). The study objectives were addressed using a descriptive statistical summary and a multivariable logistic regression model constructed in STATA Version 12.
Results: Among participants eligible for inclusion (n=235), serum IFN-Î³ and substance abuse behavior proved to be important delineating characteristics for the detection of comorbid pain. Analysis of inflammatory profile showed IFN-Î³ to be significantly elevated among patients reporting comorbid pain (Odds Ratio: 2.02 95%CI: 1.17, 3.50; p=0.01). Patients reporting comorbid pain were also found to have an increase in positive opioid urine screens (OR: 1.02 95% CI 1.00, 1.03; p=0.01), indicating an increase in illicit opioid consumption. When modeling the outcome response to treatment (the percentage of positive opioid urine screens) linearly, we found comorbid pain to be associated with an 8% increase in opioid positive urine screens (Estimated coefficient: 8.02; 95%CI: 14.67, 1.36, p=0.02).
Conclusion: MMT patients with comorbid pain were shown to have elevated IFN-Î³ and higher rates of continued opioid abuse. The ability to objectively distinguish between patients with comorbid pain may help to improve the

prediction of poor responders to MMT as well as identify treatment approaches such as anti-inflammatory medications as a safe alternative for MMT patients with comorbid pain.

MODERATORS OF COMORBIDITY BETWEEN CHILDHOOD ASTHMA AND ATTENTION DEFICIT HYPERACTIVITY DISORDER

Lead Author: Toral N. Desai, M.B.B.S.

SUMMARY:

Objective: Comorbidity of pediatric Asthma and Attention Deficit Hyperactivity Disorder may be moderated by factors such as age, sex, race, birth weight, insurance type, socio-economic status, onset of diagnosis, association with sleep disorder, and type of ADHD. In addition, effect of medications, individually or in combination, may lead to worsening or improvement in Asthma or ADHD symptoms.

Background: ADHD and Asthma, individually or in combination, can adversely impact the daily lives and functioning of children and their families. Several recent studies indicate the deleterious effects of association between Asthma and ADHD. There are instances where attention deficit symptoms may have been discarded as being a consequence of asthma; however studies have often shown that many children with asthma may independently have ADHD symptoms. In this retrospective data analysis, we try and understand the impact of moderators such as age, sex, race, birth weight, insurance type, socio-economic status, onset of diagnosis, association with sleep disorder, type of ADHD, and effect of medications, on the comorbidity between asthma and ADHD. Earlier interventions to identify children at risk may reduce burden of the disease in later years.
Methods: This retrospective study involves a review of charts from children and adolescents (ages 3-18) attending outpatient clinic at University of Virginia's Child and Family Clinic. It uses inclusion criteria of Age 18 or less prior to January 31, 2014, Any sex, any race, any birth-weight, Any socio-economic status, Presence of sleep disorder, Any type of Attention deficit hyperactivity disorder, concomitant use of other medications. The exclusion criteria consists of any patient with age over 18. Statistical analysis includes both qualitative and quantitative aspects.
Results: A quantitative analysis of data obtained from the chart review and based on the aforementioned parameters was conducted.
Conclusions: This particular study on 365 patients reveals that prevalence of asthma is 2.8 times higher in children with ADHD than in the general pediatric population, and children with comorbid Asthma were more likely to be diagnosed with ADHD at later age as compared to children without ADHD, and Black youth were more likely to have comordbid diagnosis than other groups. No significant trends were seen in the gender, age of diagnosis, birth weight, ADHD subtypes, insurance type. The limitation includes unavailability of all the required data for all the patient and it could be moderated by higher number of patients.
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PERSISTENT DISSOCIATIVE SYMPTOMS ASSOCIATED WITH SALVIA DIVINORUM USE

Lead Author: Sanket R. Dhat, M.B.B.S., M.D.
Co-Author(s): Ayame Takahashi, M.D.

SUMMARY:

Salvia divinorum (salvia) is a sage plant that is easily obtained in the United States. Its active ingredient, Salvinorin A, is a novel and highly selective pure kappa opiate receptor agonist with rapid onset and powerful hallucinogenic properties. Salvia has become increasingly popular as a drug of abuse when smoked. No long-term negative outcomes have been reported from the use of salvia. We present a case in which salvia precipitated persistent dissociative symptoms and cognitive impairment.
"Mr. C" was a 28-year-old man with no family or personal psychiatric history. He was reported to have normal social interactions, behavior, and cognitive skills. He was seen in the inpatient rehab treatment program, where he was hospitalized for alcohol dependence and polysubstance abuse. He requested psychiatric consult as he was having feelings of

derealisation and depersonalization along with significant deterioration in his cognitive abilities. This led to loss of his job at insurance company. He was not able to perform his duties at the job in accounts department. As per history this started after the Salvia use and he described the feeling of derealisation and depersonalization distinctly as if out of body experience. These weird feeling persisted and he started drinking alcohol heavily to deal with these feeling. He complained of severe anxiety and he was not able to concentrate on the job and could not attend any social gatherings, so we started him on Gabapentin for his anxiety and ordered EEG but it was negative for any seizures. He continues to have these dissociative symptoms along with memory and cognitive impairment. He scored 23/30 on MOCA, which is alarming considering his age and level of education. Meanwhile he was evaluated thoroughly for cognitive decline and these feelings by neurologist and psychiatrist and all tests were negative, which includes MRI, TSH, B12, Folate, ANA, CBC, CMP. Patient was advised to refrain from any psychotropic substance abuse and we will follow up with him in 3 months. We will explore option of starting atypical antipsychotic medications, if his symptoms persist.

To the best of our knowledge, there are very few reported cases of a persistent negative outcome from the use of salvia. We suspect that our patient was predisposed to cognitive impairment because of polysubstance abuse but Salvia distinctly precipitated the clinical manifestations. This may relate to the drug's ability to exert its potent psychotropic actions through the activation of KOP receptors, which is unique and different from other hallucinogens like LSD.

SUBSTANCE USE DISORDERS IN THE PSYCHIATRIC EMERGENCY ROOM: PREVALENCE AND ASSOCIATED PSYCHIATRIC COMORBIDITY

Lead Author: Savannah Diamond
Co-Author(s): Savannah B. Diamond, William S. Diamond, Melanie Melville MD, Suzanne Holroyd MD

SUMMARY:

Background: Substance use disorders are increasing nationwide, but there is little data regarding their presentation in the emergency room (ER) setting. This study examines the prevalence and associated psychiatric co-morbidity of patients diagnosed with substance use disorders presenting to a psychiatric ER.

Methods: 226 consecutive psychiatric ER patients were examined by retrospective chart review. Data collected included demographics, substance use, psychiatric diagnoses, suicidal ideation, and treatment plan. Data was entered into SPSS and analyzed.

Results: Of the 226 patients, 34.8% had a history of substance abuse prior to the visit. 46.5% reported drinking alcohol and of those, 45.6% drank daily, 4.4 % reported binge drinking, 13.2% reported drinking several times a week and 25.3% only occasionally. Of those reporting drinking, 51.2% had last used alcohol the day of the ER visit, while 70.7% had been drinking within 72 hours of the ER visit. Regarding illicit substance use, 31.6% reported such use with 10.8% using cocaine, 22.2 % marijuana, 3.4% stimulants, 4.9% opioids and 1.5% heroin, and 5.4% other illicit substances. There was high comorbidity of other psychiatric diagnoses to all substance use disorders. Time of last use of alcohol was strongly associated with psychiatric admission ($p<0.03$)

Conclusion: Substance use disorders account for a large portion of patients presenting to a psychiatric ER and have high psychiatric comorbidity. Use of alcohol close to the time of presentation was associated with psychiatric admission.

NON-SUICIDE, NON-METHADONE OPIOID OVERDOSE DEATHS IN INTERIOR BRITISH COLUMBIA, 2006-2011: IMPLICATIONS FOR PSYCHIATRISTS

Lead Author: Raymond Julius O. Elefante, M.D.
Co-Author(s): Trevor Corneil, M.D.

SUMMARY:

Background

Opioid use for chronic non-cancer pain (CNCP) quadrupled over the last 15 years, and inadvertent overdose deaths are increasing.1 Both CNCP and psychiatric disorders are common and highly comorbid.1-3 For instance, the prevalence of depression and anxiety disorders in this group are 10-31.5% and 13-28%, respectively.1,2 This retrospective case series explores psychiatric comorbidity among all deaths meeting the case definition "non-

suicide, non-methadone, prescription opioid overdose deaths in Interior British Columbia from 2006 to 2011."
Methods
The investigation was initiated by the local Medical Health Officer under BC's Public Health Act data sharing agreement. All coroner files meeting the case definition were examined. Post hoc exploratory analyses were performed to identify potential associations.
Results
There were 119 opioid-related deaths reviewed (mean age 49 years; 50% female). The death rate in the BC Interior is 2.1 times the provincial rate (p=0.006, CI: 1.2-3.6).
Comorbid psychiatric diagnoses identified were:

PTSD	2%
Personality disorders	5%
Schizophrenia spectrum	5%
Bipolar spectrum	9%
Anxiety disorder	15%
Substance use disorder	17%
Depressive disorder	43%
Any mental disorder	69%

Postmortem toxicology detected the presence of alcohol in 10%, and showed that 93% were on more than one medication which included the following:

Anticonvulsants	9%
GABA analog	11%
Muscle relaxants	11%
Antipsychotics	29%
Benzodiazepines	40%
Antidepressants	66%

The average number of concurrent non-opioid medications is higher in those with psychiatric comorbidity (7 vs. 4, p=0.02) compared with those that do not. High dose opioids (>200mg morphine equivalents/day) were prescribed in 18%, with no significant difference between the two groups.
Discussion
Psychiatric comorbidity and polypharmacy may confer higher risk of death among patients with CNCP. Effective management of psychiatric disorders may improve pain outcomes and lead to less inadvertent overdose.1,3 As adjuvant medication use is common, knowledge of psychopharmacological interactions and potential for adverse events are important. Further study is warranted to identify risk factors that increase inadvertent opioid deaths among patients with CNCP.
Conclusion
Psychiatrists may reduce adverse events through effective management of mental illnesses and awareness of psychopharmacological considerations in the setting of polypharmacy. Active monitoring and ongoing counselling of at-risk patients are recommended. Public health mitigation efforts should include education of primary care physicians, psychiatrists, and pharmacists.

RISK APPRAISAL OF ALZHEIMERâ€™S CAREGIVERS: THE DEPRESSION CONNECTION

Lead Author: Zelde Espinel, M.A., M.D., M.P.H.
Co-Author(s): Elizabeth Crocco, M.D., Janice Rios, M.D., Jehan Helmi, M.D.

SUMMARY:

Introduction:
The role of "caregiver" for patients with Alzheimer's Dementia is life-changing and frequently associated with negative impacts on caregiver physical and psychological health, including elevated symptom levels for major depression. Given the intensity and chronicity of demands placed on the caregiver, some Alzheimer's patients may be neglected, left unsupervised and at risk of harm, or abused by caregivers. This study examines caregiver symptom levels of depression in relation to 1) perceived stress and strain, 2) temptation to abuse, and 3) neglect of patient safety.
Methods:
Surveys were conducted with 100 caregivers of Alzheimer's patients followed at the University of Miami Memory Disorders Center, Miami, Florida. Caregivers completed the CES-D to assess symptoms of depression and a risk appraisal instrument describing "care receiver" characteristics. Three risk appraisal items assessed caregiver "stress and strain" (feel stressed, feel strained, stress while providing practical support), 2 items measured "temptation to abuse" (felt like screaming, had to keep from hitting), and 3 items examined "neglect of patient safety" (patient access to dangerous objects, patient left unsupervised, patient wandering). CES-D depression symptoms were examined in relation to 1) temptation to abuse, 2) neglect of patient safety, and 3) caregiver stress and strain. Caregiver stress and strain were examined in relation to 1) temptation to abuse and 2) neglect of patient safety.
Results:

Rates of caregiver depression, assessed by CES-D, were elevated compared with population baselines and associated with length of time in the caregiver role. Caregiver depression and caregiver stress and strain were strongly correlated. Both caregiver depression and caregiver stress and strain, independently, and in combination, predicted both temptation to abuse and neglect of patient safety.
Discussion:
Caregiving for Alzheimer's patients becomes increasingly burdensome with time. As Alzheimer's symptoms progress, caregiving tasks become more frequent, time consuming, and physically demanding. Cognitive deterioration, often accompanied by lack of recognition of caregiver identity, compounded by verbal and physical aggression, intensifies caregiver stress. Not surprisingly, caregivers frequently develop symptoms of depression and experience stress and strain. In this study, caregiver depression symptoms and perceived stress and strain operated synergistically to elevate risks for "temptation to abuse" and "neglect of patient safety" as measured by caregiver self-reports.
Conclusions:
The current study suggests that caregivers of Alzheimer's patients are at risk for role-related depression symptoms and perceived stress and strain; in turn, both measures predict higher likelihood that caregivers report "temptation to abuse" the patient and "neglect of patient safety."

EVALUATING THE EFFECTIVENESS OF A COLOCATED PRIMARY CARE CLINIC ON FOUR MEDICAL OUTCOMES IN PATIENTS WITH MENTAL ILLNESS

Lead Author: Brandon Ferrell, Ph.D.
Co-Author(s): Najma Hamdani, M.D., M.H.A., Fariha Afzal, M.D., Clayton Morris, M.D., Merlyn Scoggin, M.D.

SUMMARY:

Objective:
Patients with mental illness are more likely to suffer medical comorbidities than their non-mentally ill peers. Colocating or integrating primary care clinics in facilities providing mental health services has been proposed as one potential solution to help reduce those health disparities. The authors sought to test the effectiveness of one primary care clinic colocated in a state community mental health center in improving the health outcomes of its patients with mental illness.
Methods:
Patients receiving primary care services at a colocated clinic (n = 1107) were compared to controls who did not use the primary care clinic (n = 1431) in a retrospective cohort study covering a four-and-a-half-year period. To evaluate the colocated clinic's effectiveness, this study focused on four medical conditions: hypertension, obesity, hyperlipidemia, and diabetes. Data on systolic and diastolic blood pressures; weights; total cholesterol, HDL cholesterol, LDL cholesterol, and triglyceride levels; and blood glucose and HbA1c levels were taken from patients' medical records. Each of those variables was separately analyzed using a linear growth curve model, permitting an examination of the differences between the two groups at the onset of treatment and in their weekly response to treatment.
Results:
Blood Pressure
Compared with the individuals in the control group, patients from the colocated primary care clinic had lower systolic and higher diastolic blood pressures at baseline. Patients from the primary care clinic saw larger increases over time in both systolic and diastolic blood pressures.
Obesity
Patients from the primary care clinic weighed more than their peers in the control group. They also experienced slower weight gain than controls, but this difference disappeared when age, sex, and race were controlled for.
Hyperlipidemia
There was no statistically significant difference between patients at the primary care clinic and controls in terms of weekly rates of change for total cholesterol, HDL, LDL, and triglyceride levels. Patients from the primary care clinic had higher total cholesterol, LDL, and triglyceride levels than controls. There was no statistically significant difference between the two groups on HDL levels.
Diabetes
There was no statistically significant difference between patients at the primary care clinic and controls in terms of weekly rates of change for glucose levels (natural log transformed) and HbA1c levels. Patients from the primary care clinic had higher glucose levels than controls.

There was no statistically significant difference between the two groups on HbA1c levels.
Conclusion:
These results suggest that colocated primary care clinics, on their own, might not be entirely effective at improving some of the health outcomes of mentally ill patients. Integrating primary care providers into the treatment of mental illness might be required to improve patients' medical outcomes.

CASE REPORT: MANAGEMENT AND TREATMENT OPTIONS FOR DIGEORGE SYNDROME AND ADHD

Lead Author: Ayme V. Frometa, M.D.

SUMMARY:

Background: There is a high incidence of psychiatric symptoms in patients with DiGeorge syndrome. We present a patient with DiGeorge syndrome who had decompensated with aggression and hyperactivity, to educate healthcare providers
about management and treatment options when this correlation is present.
Methods: We reviewed the case of a 7.3 year-old Hispanic Female who presented to the Emergency Department with physical aggression, hyperactivity, suicidal statement without plan, self- mutilation, with a history of DiGeorge syndrome diagnosed in infancy and Oppositional Defiant Disorder and Attention Deficit Hyperactivity Disorder since the age of 5.
Results: In the unit, patient continued to display cantankerous and irascible behavior,
hyperactive, defiant, in need of limit setting, almost constantly, specially at the
beginning of hospitalization. Her behavior continued to be unpredictable and her
medications continued to be titrated. Pt was referred to a nutritionist where Pediasure was recommended 3 times a day to improve nutritional status and she was maintained on methylphenidate 5 mg per os three times daily.
Discussion: The DS22q11.2 syndrome can have very high rates of psychiatric morbidity and abnormal behaviors. Psychiatric manifestations of the illness tend to start in
childhood. Afflicted children with this gene tend to be shy, withdrawn, stubborn,
emotionally labile, and suffer from social and communication impairments.
Children and adolescents with DS22q11.2 have a high rate of non-psychotic
psychiatric disorders such as Attention Deficit Hyperactivity Disorder,
Oppositional Defiant Disorder, Anxiety disorders, effective disorders, and Autism
Spectrum disorders.
Conclusion: Assessment of DiGeorge syndrome should include psychiatric assessment, to identify the need of medical management, as it has a high correlation with psychiatric illness. Cognitive assessment can be followed with IQ testing and psychological awareness with family members, school teams, and healthcare providers.
References
Kaplan and Sadock's Comprehensive textbook of psychiatry
Dsm-5 diagnostic criteria

ETIOLOGIES TO CONSIDER IN THE PRESENTATION OF NEW ONSET PSYCHOSIS IN CHILDREN: THE CALIFORNIA ENCEPHALITIS PROJECT EXPERIENCE

Lead Author: Mary Gable, M.D.
Co-Author(s): Carol Glaser, D.V.M., M.D.

SUMMARY:

Introduction: The California Encephalitis Project (CEP), established to better understand the epidemiology of encephalitis, identified over 300 cases of encephalitis among children, aged 18 or under, during a five year period. A substantial number of cases presented with or demonstrated psychosis as a prominent initial symptom. It is important that mental health practitioners recognize key organic etiologies of psychosis in this age group in which new onset psychosis is common because non-psychiatric etiologies can be readily confused with a psychiatric presentation in this setting. A delay in identification of the cause of a number of encephalitides can delay initiation of adequate treatment and can significantly alter prognosis.
Methods: Specimens from patients with suspected encephalitis are referred to the CEP by their treating physicians for diagnostic testing. A standardized case history form with information about patient demographics, exposures, clinical features, laboratory and neuroimaging results, and medication is submitted by the referring physician. Serum, CSF, and respiratory specimens are also

submitted and tested for 15 potential agents and relevant autoimmune etiologies such as anti-NMDAR. All examined cases presented to the CEP between September 2007 and 2012 and were limited to individuals aged 18 or under.
Results: The median age among the 314 pediatric cases was 11 years with 37% being between the ages of 13 and 18. There was a nearly equivalent predominance of males and females. Forty percent were Hispanic, 26% white, 12 % African American, and 10% Pacific Islander or Asian. Psychosis was a common presenting feature in 35% of cases. Autoimmune etiologies presented significantly more often with prominent psychosis at 70% of the time when compared with infectious causes, which did so 30% of the time ($p < 0.01$). Anti-NMDAR encephalitis was not only significantly more often the cause of psychosis among those with non-infectious etiologies (at 60%; $p<0.01$), but almost half of anti-NMDAR cases presented with this symptom. Over fifteen different infectious etiologies were identified, and among them mycoplasma was the most common infectious cause, presenting with psychosis in 39% of cases. Adenovirus and enterovirus made up a substantive portion of those diagnosed with infectious encephalitis, and while adenovirus never presented with psychosis, enterovirus did about 40% of the time among confirmed cases.
Discussion: Both viral and autoimmune phenomena are possible causes of new- onset psychosis in adolescents and children of both sexes and among all racial groups examined. In particular, autoimmune anti-NMDAR encephalitis is an important etiology and therefore deserves a prominent place on the differential of psychosis. A consideration of these entities on presentation of new onset psychosis can prevent unnecessary treatment and diagnostic costs, while permitting a more timely and complete treatment and recovery.

ATTENTION DEFICIT HYPERACTIVITY DISORDER DIAGNOSIS IN ONTARIO YOUTH: INSIGHTS FROM ELECTRONIC MEDICAL RECORD DATA

Lead Author: Tanya S. Hauck, M.D., Ph.D.
Co-Author(s): Karen Tu, M.D. M.Sc., Laura Wing B.Math., Laura Maclagan M.Sc., Paul Kurdyak M.D. Ph.D.

SUMMARY:
Background
World-wide studies report ADHD prevalence rates of (ADHD) of 0.7-8.0%, but few studies have determined prevalence and treatment of ADHD in the primary care setting. Primary care electronic medical record (EMR) data provides an opportunity to robustly study ADHD prevalence and treatment in a general population where the majority of cases are detected and treated. Ontario, Canada offers a large population from which to derive EMR data and has the benefit of being a single-payer health care system with primary care physicians acting as the 'gate keepers' to the healthcare system and thereby providing a relatively thorough perspective on ADHD diagnosis, treatment and comorbidities.

Objective
To determine the prevalence of ADHD and characteristics of comorbidities and medication use in ADHD in Ontario, Canada using the Electronic Medical Record Administrative data Linked Database (EMRALD), a large EMR dataset of primary care physicians.
Methods
A retrospective chart abstraction study drawing from more than 250 000 patient medical records, resulting in a pool of 29 256 patients in the target age range of 1-24 years old. 10 000 of these patients were randomly selected for abstraction by trained abstractors using pre-determined criteria developed by family physicians and a psychiatrist to detect cases of ADHD. All questionable cases or cases where no relevant medications were prescribed were reviewed by a clinical expert. Prevalence, comorbidities and treatment characteristics of ADHD cases were calculated.
Results
The prevalence of ADHD amongst the children and youth in the sample was 5.4%, with a prevalence of 7.9% in males and 2.7% in females. The majority (70%) of ADHD cases received prescriptions for appropriate stimulant or non-stimulant ADHD medication over the course of the disease. Significant comorbidities included autism (4.9%), major depression (17.7%) and anxiety (24.4%). Antipsychotic prescriptions were 11.9% overall in these ADHD patients and the comorbidity of autism was significantly associated with increased antipsychotic prescriptions with a relative risk of 3.21 (95% CI 1.58, 5.57).

Limitations
A major limitation is the nature of drug prescriptions captured in the EMR and we were unable to determine frequency and duration of use.
Discussion
This EMR dataset provides a large sample with which to understand the prevalence and treatment of ADHD by primary care physicians. The ADHD prevalence in this population is consistent with estimates reported in the literature worldwide. More than two thirds of patients with ADHD received a prescription for an appropriate medication. Antipsychotic prescriptions in this population of youth with ADHD were high and were associated with comorbid autism diagnoses. Given the significant side effects of antipsychotics, future work will focus on understanding the factors that determine antipsychotic use such as contact with specialists and socioeconomic status.

THERAPEUTIC MODALITIES FOR ALCOHOL USE DISORDER: LITERATURE REVIEW

Lead Author: Zahid Islam, M.D.
Co-Author(s): Srinivasa Gorle, M.D., Faisal A. Islam, M.D., Asghar Hossain, M.D.

SUMMARY:

Introduction
Alcohol use disorder is a common disorder in the United States. No therapeutic interventions can effectively solve this problem, but treatment consists of psychological intervention, pharmacological intervention or both. Available pharmacological intervention has shown mixed result.
Objective
Our goal is to evaluate the effectiveness of existing treatment modalities for alcohol use disorders. We examined pharmacological treatments from the perspective of evidence-based medicine. The role of the medications in the treatment process was highlighted.
Methods
A literature search via PubMed and Google scholar has been conducted on the available treatment modalities for addressing alcohol dependence
Discussion
A number of randomized controlled trials (RCTs) have been performed to establish the effectiveness of pharmacological agents for the treatment of alcohol dependence. FDA approved Naltrexone and Acamprosate have shown mixed results in clinical trial, but Naltrexone is effective in alcohol dependence as it decrease the length and frequency of drinking. Another FDA approved medication Disulfiram has showed ineffective for increasing abstinence in a recent multi center RTC. Baclofen, an antispasmodic drug, has proven to be remarkably effective in relapse prevention. However, despite generous benefits as a maintenance medication for alcohol dependence, dosing concerns have led to Baclofen being relegated as a second-line drug. Relapse preventive strategies may also include the use of Gabapentin; RCTs have suggested that Gabapentin administration may lead to a relative reduction in cravings. Moreover, Gabapentin seems to possess a reasonably safe profile. Varenicline is another drug that appears to be effective for underlying cravings; it is generally targeted for individuals that have an inclination for moderate and/or heavy alcohol consumption. However, it has no bearing on abstinence rates. A preliminary study concerning the drug Benfotiamine has demonstrated a significant decrease in alcohol consumption, especially amongst female alcoholics. Furthermore, the authors of the study encouraged the use of Benfotiamine as an adjunctive medication for thiamine deficiency due to its inherent composition. Another randomized controlled trial aimed to establish an efficacy with respect to placebo for the drug, Nalmefene. Despite relatively high dropout rates for Nalmefine subjects, the authors concluded that the drug has potential for individuals with a history of long-term alcohol abuse. In addition to psychiatric drugs, Cognitive Behavioral Therapy (CBT) may be instrumental in exerting an influential effect on the patient's well-being as well as ongoing comorbidities.
Conclusion
Interventions for alcohol dependence via the implementation of psychotherapy and psychopharmacological agents (e.g. Natrexone, Disulfiram, Acamprosate, Nalmefine) are necessary for the maintenance of an optimal clinical outcome.

FITNESS-FOR-DUTY II: A SYSTEMATIC ANALYSIS OF OUTCOME DATA FOR VOLUNTARY VERSUS MANDATED PATIENTS

Lead Author: Robert S. Johnson, J.D., LL.M., M.D.
Co-Author(s): J. Christopher Fowler, PhD, John M. Oldham, MD, Suni Jani, MD, Hillary Eichelberger, BA, Edward Poa, MD, David P. Graham, MD, MS

SUMMARY:
Aims and Objectives:
At present, a considerable number of professionals are routinely referred for evaluation and treatment at the behest of the individual's professional regulating agency, such as the Texas Bar Association, Texas Medical Board or the Airline Pilots Association. Still other professionals enter treatment of their own volition. Despite this disparity in motivations, research is lacking regarding whether patients progress more rapidly in treatment when they enter treatment on their own initiative.
Project Summary:
The Menninger Clinic's research department has collected considerable electronic data on its patients going back to 2008 when outcome measures (SCID, Stressful Life Events Screen, WHO-Assist 8, Columbia Suicide Severity Rating, Big Five Inventory, Patient Health Questionnaire) began being routinely collected on each patient. This data, generally gathered at multiple points throughout a patient's course of treatment, would allow our research team to plot the rate of improvement for patients both mandated and otherwise. Patients will be classified from 0-3 depending on the extent to which they were mandated into treatment. It is believed that a comparison of these data between groups may yield a statistically significant difference in outcome measure improvement.
This project has received IRB approval (H-34911) as well as approval from the VA R&D Committee and the Menninger Clinic Research Council. It is our intent to gather relevant outcome data from 2008 until the present for all adult patients admitted to the Menninger HOPE, COMPASS and PIC units. Patients will be divided into several categories categories, depending on the extent to which they are mandated, based upon an automated search of patient charts using key search terms. A subsequent statistical examination of these groups' respective outcome measure trends using SPSS statistical software may reveal a statistically significant difference between the groups.

We hope that our analysis might inform policymakers with regard to whether mandated treatment produces markedly different results during the course of a typical inpatient stay.

EARLY ONSET SCHIZOPHRENIA WITH NEGATIVE AND COGNITIVE PRESENTATIONS

Lead Author: Mahtab Karkhane Yousefi, M.D.
Co-Author(s): Divya Vemuri, M.D.

SUMMARY:
Introduction:
Schizophrenia is a chronic, severe, and debilitating mental illness which manifests with different symptoms.
Case description:
D is a 15-year-old African American male who was brought to the emergency room by his mother and stepfather for aggressive behavior. D was also non-verbal and non-communicative on admission. Of note, approximately, 8 months prior to this admission, he became non-verbal and non-communicative. Prior to the age of 13, D had a relatively normal development and was fluent and communicative. No abnormalities were noted in his milestone development.
Starting at age 13, he became preoccupied with his physical growth, and even requested growth hormone to increase his rate of growth. He began to do poorly at school and was starting to withdrawal and isolate from his peers. This isolation eventually extended towards limited interactions socially with anyone including family. Since then, D has been hospitalized 5 times and has a diagnosis of schizophrenia. He has been tried numerous different antipsychotics such as risperidone, aesenipine, haloperidol, and paliperidone sustenna. He was taking the medications variable. No abnormalities were noted with serum chemistries, thyroid functions, toxicology screen, and ceruloplasmin.
After being in the hospital and on antipsychotic medications for multiple weeks, the patient began to communicate-first by writing and then verbally. However, he stopped communicating after a short period of time.
Conclusion:
While psychotic symptoms can present in various ways, clinicians should consider that

early onset schizophrenia can present with a variety of prominent cognitive symptoms which require aggressive intervention. Traditionally, focus has been on ameliorating positive and negative symptoms, but cognitive symptoms may become the prominent feature and for that a specific intervention will be warranted.

BE CAUTIOUS OF DELIRIUM IN PSYCHIATRIC PATIENT POPULATION

Lead Author: Reena Kumar, M.D.

SUMMARY:

Case Summary :
Presenting an interesting case of Delirium which started with subtle presentation of restlessness progressing to masturbating in day area and finally to altered mental status . Upon interview patient denied any recent alcohol use . His UDS was positive for BZD , Marjihuana and cocaine .
Conclusion :
We report a subtle but crucial presentation of delirium which we as psychiatrist should always keep in our mind to decrease the morbidity/mortality in inpatient psychiatric population.

A QUANTITATIVE META-ANALYSIS EVALUATING THE EFFICACY OF KETAMINE AS A NOVEL TREATMENT FOR MAJOR DEPRESSIVE DISORDER AND BIPOLAR DEPRESSION

Lead Author: Ellen Lee, A.B., M.D.
Co-Author(s): Megan P. Della Selva, M.D., Anson Liu, M.D., Seth Himelhoch, M.D., M.P.H.

SUMMARY:

Objective
Given the significant disability, morbidity and mortality associated with depression; the promising recent trials of ketamine highlight a novel intervention. A meta-analysis was conducted to assess the efficacy of ketamine in comparison with placebo for the reduction of depressive symptoms in patients who meet criteria for a major depressive episode.
Method
Two electronic databases were searched in September 2013 for English language studies that were randomized, placebo-controlled trials of ketamine treatment for patients with Major Depressive Disorder or Bipolar depression and utilized a standardized rating scale. Studies including participants receiving ECT and adolescent/child participants were excluded. Five studies were included in the quantitative meta-analysis.
Results
The quantitative meta-analysis showed that ketamine significantly reduced depressive symptoms. The overall effect size at day one was large and statistically significant with an overall Standardized Mean Difference of 1.03 (95% CI 0.69, 1.37) ($p<0.001$). The heterogeneity of the studies was low and not statistically significant and the funnel plot showed no publication bias.

Conclusions
The large and statistically significant effect of ketamine on depressive symptoms supports a promising, new, and effective pharmacotherapy with rapid onset, high efficacy, and good tolerability.

WITHDRAWN

THE TREATMENT OF BEHAVIORAL DISTURBANCES AND PSYCHOSIS ASSOCIATED WITH DEMENTIA

Lead Author: Jeannie Lochhead
Co-Author(s): Jeannie D. Lochhead, M.D., Michele A. Nelson, M.D., Gerald A. Maguire, M.D.

SUMMARY:

Behavioral disturbances and psychosis associated with dementia are becoming an increasingly common cause of morbidity in patients with dementia. Approximately 70% of individuals with dementia will experience agitation, and 75% will experience symptoms of psychosis such as delusions or hallucinations [1]. The goal of this article is to review the pharmacologic treatment options for behavioral disturbances and psychosis associated with dementia. A literature review was conducted on PubMed/Medline using key words of "dementia" and "interventions." The results were filtered for meta-analysis, clinical trials, and systematic reviews. The results were then reviewed. At this time, the first line pharmacologic treatment to target symptoms is often a SGA but consideration should be given to their collective boxed warning of morbidity/mortality [32, 35]. The evidence for second line treatments are limited. The studies to date have provided evidence that improvement in behavioral symptoms may come from frequent pain assessments,

exploring anxiety and depressive symptoms, and closely monitoring for side effects. There is limited evidence to support the use of FGA, antidepressants, anticonvulsants, and analgesics. Additional randomized control trials are needed to guide clinical decision making regarding the behavioral disturbances and psychosis associated with dementia

IMPROVING THE DETECTION OF METABOLIC SYNDROME IN PSYCHIATRIC INPATIENTS BY COMPUTER ALGORITHM IN THE ELECTRONIC MEDICAL RECORD

Lead Author: Kingwai Lui, D.O.
Co-Author(s): Joachim Raese, M.D., Gagandeep Rhandawa, M.D.

SUMMARY:

Studies have shown that second generation antipsychotics can induce metabolic syndrome (MS) in psychiatric patients. However, MS is often overlooked, and therefore, under - diagnosed in psychiatric patients. Immediate attention is needed to raise physician awareness of MS as these patients are also at risk for diabetes, hypertension, coronary artery disease, stroke and premature death. Data from our facility show that physicians are not sufficiently mindful about the diagnosis and management of MS. At Kaweah Delta Mental Health Hospital, a review of 9100 consecutive admissions revealed that 97.6% of patients failed to receive a complete laboratory assessment required for the diagnosis of MS. Of the 214 patients receiving all required tests, 34.5% met the criteria for MS. However, less than 20.0% of patients diagnosed with MS received treatment for all components of MS such as hypertension, hyperglycemia, and dyslipidemia. 50.0% of the patients received only partial intervention, and approximately 30.0% of them were left untreated.

To increase detection of MS at Kaweah Delta Mental Health Hospital, we developed an automated order set (CPOE), which defaults to include all tests for MS. The following criteria were used for diagnosis of MS: hypertension: systolic > 130 and diastolic > 85, body mass index >25, fasting glucose >110 mg/dl, fasting HDL cholesterol <40 mg/dl (<50 mg/dl in females), and fasting triglycerides >150 mg/dl. Since the addition of the CPOE automated algorithm in July 2014, we detected MS in 27.0% of 397 consecutive admissions. Of those who met criteria for MS, 57.0% did not receive interventions for all detected components of MS, 29.0% were partially treated, and only 14.0% were treated for all detected components. Of the 107 cases of MS, 77.5% had hypertension, 86.9% had dyslipidemia, and 38 35.5% had hyperglycemia. The percentages of patients who received treatment for each component of MS are: hypertension 33.7%, dyslipidemia 16.1%, and hyperglycemia 50.0%. In no case was the diagnosis of MS entered in the EMR by the treating physician.

Although the automated algorithm significantly raised the detection rate of MS from 2.4% to 27.0%, physician did not identify MS from the data alone and did not address all components of MS in their treatment. We now modify our strategy by using the computer algorithm to "flag" the record to alert the physician to the detection of MS and provide a drop-down menu for treatment of the components of MS. The results of these efforts will be reported.

GETTING IN TUNE: THE PSYCHIATRIC TREATMENT OF MUSICIANS

Lead Author: Shane McKay, M.D.
Co-Author(s): Erica Garcia-Pittman, M.D., Lloyd Berg, Ph.D., Emily Doyle, M.D.

SUMMARY:

Much has been written about the mental health and emotional lives of musicians, yet few scientific examinations into these subjects are currently available. This paper aims to investigate the issues that bring musicians into psychiatric care by using a representative population of patients in Austin, Texas.

The demographics, diagnoses, and comorbidities of these patients will be examined through chart review and statistical analysis. The cultural perception of the prevalence of psychiatric illness and substance use disorders among musicians will be compared to the available data.

Most musicians make due with limited finances, and psychiatric treatment can be expensive. The patients in this study receive funding for their care through a local nonprofit organization. An examination of the burden of psychiatric illness in this representative population will highlight the need for similar initiatives throughout the country.

LIMITED SCREENING FOR INSULIN RESISTANCE IN PATIENTS WITH A DUAL DIAGNOSIS

Co-Author(s): Anita Kablinger, M.D., C.P.I.

SUMMARY:

Rates of obesity and diabetes have been estimated to be twice as high in schizophrenic patients versus the general population. This study aims to determine the rates of screening by providers for insulin resistance in a sub-set of schizophrenics with a co-morbid substance use disorder. Using a retrospective review of electronic medical records, 140 subjects age 18+ accessing the Carilion Clinic healthcare system in Roanoke, VA between August 2010-August 2013 were identified. Each subject had an ICD-9 diagnosis of schizophrenia (295.00-295.99) treated with an atypical antipsychotic and a diagnosis of substance abuse or dependence (304.00-305.99) excluding Tobacco Use Disorder (305.1). Subjects with a known diagnosis of Type II Diabetes Mellitus were excluded. Only 24.3% of subjects (34/140) had ever been screened for diabetes with either a Hemoglobin A1c, fasting plasma glucose, or 2 hour Oral Glucose Tolerance Test value. Of those screened, 41.2% (14/34) met the criteria for pre-diabetes set forth by the American Diabetes Association in 2010. The highest rates of insulin resistance screening were in subjects with a co-morbid depressant addiction (32.6%) and lowest rates of screening were in subjects with a co-morbid stimulant addiction (17.6%). However, neither A1c, Body Mass Index, nor Low Density Lipoprotein values varied significantly based on antipsychotic medication or substance of abuse. This study underscores the need for better metabolic monitoring of patients treated with atypical antipsychotics by healthcare professionals. Further studies are needed to more completely develop the prevalence rates of pre-diabetes in patients with a dual diagnosis. The lack of consistent monitoring for insulin resistance in at-risk patients treated with a medication class associated with weight gain and diabetes represents an important and clinically relevant area of patient care upon which providers can improve.

SYMPTOMS OF DEPRESSION AS A FUNCTION OF SEX AND LEVEL OF TRAINING AMONGST HEALTHCARE PROFESSIONALS

Lead Author: Chaitanya Pabbati, M.D.
Co-Author(s): Neal Doran, PhD., Sidney Zisook, MD

SUMMARY:

Introduction

An expanding number of studies point to high rates of depression, anxiety, substance abuse, and suicidal ideation among healthcare professionals. They have highlighted the progression of depressive symptoms within residency training, and the effects of this on the perceived rate of medical errors. Research has also revealed that men and women may express depression differently, implying that traditional screening tools may overlook some individuals who are struggling. We present findings of a study aimed at understanding the roles of gender and academic position on depression and suicidality among physicians.

Methods

Medical students, residents, fellows, and faculty members completed an anonymous online survey that screened for depression and suicidality, as well as assessing anxiety, stress, licit and illicit substance use, and use of mental health interventions. Participants were referred, as appropriate, to a psychiatrist or therapist. Analyses of variance and logistic regression were used to test whether self-reported symptoms differed by sex or academic position.

Results

1064 individuals responded to our questionnaire (43% male; 39% medical students; 22% house staff, 39% faculty) over the course of 3 years. Women tended to report higher levels of nervousness, annoyance and stress. In contrast, men reported higher levels of substance use. Mean scores on PHQ-9 were significantly higher for women than men, and women were 4.6 times more likely to report a past suicide attempt. There were significant effects of both sex and position on PHQ-9 scores after controlling for age. Simple effects analyses indicated that across rank women reported higher PHQ-9 scores; across sexes, there was a general decline in PHQ-9 scores among respondents of higher academic position.

Conclusion

This study adds to a body of literature revealing a high rate of depressive symptoms among healthcare professionals, with females scoring

higher on many categories including depression severity and past suicide attempts. Overall severity of depression lessened as position increased, though this could be a function of the era of training as much as position.

IMPACT OF OBESITY ON MENTAL HEALTH AND ADULT DEPRESSIVE DISORDERS IN THE U.S.

Lead Author: Roopali Parikh, M.D.
Co-Author(s): Yusuf Canaan, M.D. and Juan D. Oms, M.D.

SUMMARY:

Background: It has been documented that abnormal body mass index is correlative with mental health disorders, however the direction of association remains unclear. In this study, we sought to describe if obesity was associated with depressive disorders in adults and whether it is predictive of poor mental health in adults diagnosed with a depressive disorder.
Methods: The 2008 Centers for Disease Control's Behavioral Risk Factor Surveillance Survey was utilized to identify a cohort of 46,260 patients that reported the presence or absence of a diagnosed depressive disorder. Of these patients, 1,837 patients were excluded due to lack of information regarding body mass index. Demographic data and clinical history were recorded in the remaining 44,243 patients. The primary outcome of interest was prevalence of a diagnosed depressive disorder. Secondary outcomes included diagnosis of anxiety, and frequency of mental health symptoms (i.e. depressed mood, disinterest, lack of energy, lack of concentration, change in appetite, and change in sleep patterns) over a period of 14 days.
Results: Among 44,243 patients studied, a total of 12,180 (27.4%) patients were classified as obese, 15,930 (39.5%) as overweight, and 16,313 (36.7%) as normal. Compared to normal and overweight patients respectively, obese patients tended to be younger (54 vs 55 and 56 years, $p<0.001$), Hispanic (6% vs 4% and 5%, $p<0.001$), and with lower annual household incomes. They reported higher rates of financial barriers to medical care (15% vs 10% and 10%, $p<0.001$) and uninsured status (12% vs 10% and 10%, $p< 0.001$) but more recent medical checkup than their normal weight and overweight counterparts. Obese patients also had higher rates of diabetes mellitus (23% vs 6% and 11%, $p<0.001$), prior heart attack (8% vs 5% and 6%, $p< 0.001$), and prior stroke (5% vs 4% and 4%, $p<0.001$), but lower rates of smoking (33% vs 42% and 34%, $p<0.001$). Prevalence of depressive disorders (23% vs 15% and 16%, $p<0.001$) and anxiety (15% vs 12% and 11%, $p<0.001$) were significantly higher in obese patients compared to normal and overweight patients. Obese patients also reported significantly higher frequency of depressed mood, disinterest, lack of energy, lack of concentration, change in appetite, and change in sleep patterns ($p<0.001$ for all). In multivariate analysis, obesity was independently associated with higher rates of depressive disorders (OR 1.45, 95% CI 1.30-1.62, $p<0.001$) even after controlling for significant covariates. Obesity was not independently predictive of anxiety (OR 0.91, 95% CI 0.81-1.03, $p=0.102$).
Conclusions: Obesity is independently associated with higher prevalence of depressive disorders in adults in the U.S.

TRENDS IN DISPOSITION OF CHILDREN AND ADOLESCENTS WITH HISTORY OF SELF-INJURIOUS BEHAVIOR PRESENTING TO THE ER WITH SUICIDAL EVENTS: A REVIEW

Lead Author: Ankit A. Parmar, M.D., M.H.A.
Co-Author(s): Kanak Masodkar, M.D., M.S., Phyllis Peterson, P.A., Regina Baronia, M.D., Manish Aligeti, M.D., M.H.A. Terry McMahon, M.D., M.H.A.

SUMMARY:

Objectives:
1. Review current trends in disposition of children and adolescents with history of self-injurious behavior with suicidal events
2. Identify factors that are related various disposition options
3. Learn how these factors impact decision making
Background: As per the National Center for Health Statistics' report, in 2010, suicide was the third and fourth leading cause of deaths in ages 15 to 24 and 5 to 14, respectively Most common reason for psychiatric inpatient admission has been the presence of suicidal behaviors. Ironically, the average length of stay at psychiatric hospitals has decreased over the past several years.
Methods: Electronic Medical Records (EMR) of children and adolescents with history of self-injurious behaviors who presented to the

Covenant and University Medical Centers with suicidal events were reviewed for a calendar year from January 1st, 2013 till December 31st, 2013. The patients included in the study were between the ages of 5-18 years. The Columbia Classification Algorithm of Suicide Assessment (C-CASA) rating guidelines were used to categorize presenting complaints into suicidal events, non-suicidal events, and indeterminate or potentially suicidal events. Various variables consisting of demographic and clinical information were also collected during the chart review. Strict measures were taken to protect patient confidentiality throughout the data collection process and no patient identifiers were recorded.
Results: Of the total sample (N=92), 74% were females and 26% were males. Among the most common ethnical groups were Caucasians (42%) and Hispanics (36%), which is consistent with the population under study. As per C-CASA guidelines, 87% of the behaviors were identified as suicidal events, 10% as non-suicidal events and 3% as indeterminate or potentially suicidal events. Only half of the patients who presented with suicidal events went to an inpatient treatment center (Relative risk= 0.6, with a statistically significant p value of 0.029). 40% were referred to outpatient therapists' and/or psychiatrists for follow-ups and 10% were discharged home with no follow-up care.
Conclusion: Patients selected in this study not only presented with active suicidal events but also had history of self-injurious behaviors, which suggests that they were already at a higher risk. Results indicate that a large number of patients did not receive acute inpatient treatment, which put them at high risk of morbidity and mortality. In this review, we will postulate several factors, such as severity of the presentation, availability of intensive treatment centers, training of medical personnel, and socio-economical factors, that could have influenced the decision making while arranging for disposition of these high-risk children and adolescents.
References will be provided at the time of presentation.

MORTALITY RISK ASSOCIATED WITH THE USE OF ANXIOLYTIC OR HYPNOTIC DRUGS- A SYSTEMATIC REVIEW AND META-ANALYSIS

Lead Author: Ajay Parsaik, M.D., M.S.
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SUMMARY:

Importance: Use of hypnotics or anxiolytic (HA) drugs is common in the general and hospitalized population. Recent studies have raised concerns regarding the increased mortality associated with the use of these drugs.
Objective: To evaluate the mortality risk associated with HA use.
Methods: Ovid MEDLINE In-Process & Other Non-Indexed Citations, Ovid MEDLINE, EMBASE, PsycInfo, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, and Scopus were searched through April, 2014 for studies reporting mortality risk (hazard, odds or risk ratio) associated with HA use. A pooled hazard ratio (HR) with 95% confidence interval (CI) was estimated using the random-effects model and heterogeneity was assessed using Cochran's Q test and the I2 statistic.
Results: A total of 2,182 abstracts were screened independently by two reviewers followed by full text review of 44 selected articles. Twenty five cohort studies enrolling 2,350,093 patients (age 18-102 years) were included in the meta-analysis. HA users had 43% higher risk of mortality than non-users (adjusted HR, 1.43; 95% CI, 1.12-1.84). Limited studies had reported risk estimate for each gender category, and pooled results from these studies showed increased risk of mortality among men (HR=1.6, 95% CI=1.29-2.00) and women (HR=1.56, 95% CI=1.27-1.92). On sensitivity analysis, patients using benzodiazepines or Z-drugs only, had increased risk of mortality, HR = 1.49 (95% CI = 0.94, 2.34) and HR = 1.73 (95% CI= 0.95, 3.16) respectively, although the effect could not reach statistical significance probably due to limited available data. There was significant heterogeneity in the analyses. The quality of supporting evidence was fair.
Conclusions and Relevance: This systematic review and meta-analysis suggests that HA drugs use is associated with increased

mortality, both in men and women. However, the results need to be interpreted with caution due to significant heterogeneity. Further studies focusing on underlying mechanism of increased mortality with anxiolytic or hypnotics use are required.

INTRODUCTION OF TELEPSYCHIATRY SERVICES IN THE OHIO STATE UNIVERSITY EAST MEDICAL CENTER EMERGENCY DEPARTMENT

Lead Author: Amanda M. Pedrick, M.D.
Co-Author(s): Natalie Lester, MD, MPH

SUMMARY:

The provision of psychiatric assessment via live interactive videoconferencing, frequently termed telepsychiatry, offers a way to increase access to mental health services for those that are currently underserved. OSU's Psychiatric Emergency Services team began offering telepsychiatry evaluations as a means to provide 24/7 psychiatric care in the OSU East Emergency Department, a clinical setting that serves an underserved population and that historically has not had the demand to support in-house psychiatric coverage. In the first quarter of the year 2013, 89 emergency psychiatric consultations were ordered in the Ohio State University East Emergency Department. Following the introduction of telepsychiatry services in April 2013, the number of emergency psychiatric consultations nearly double, with 170 ordered in the second quarter of 2013. The goals of this project are identify any changes in the nature of psychiatric consults ordered prior to and following the institution of telepsychiatry services, as well as to characterize this population of patients on the basis of reason for consult, demographic information, diagnosis, and insurance status. The focus areas of this project will include lessons learned about the challenges experienced by populations served by emergency psychiatric evaluation via telepsychiatry as well as recommendation for how to improve the emergency psychiatric services provided to patients in the Ohio State University East Emergency Department.

CHARACTERISTICS OF VETERANS WITH FOUR OR MORE INPATIENT ADMISSION FOR MEDICALLY MANAGED DETOXIFICATION FROM SUBSTANCES

Lead Author: Edwin R. Raffi, M.D., M.P.H.
Co-Author(s): Abigail Schein, M.D., Michael Tang, D.O., M.P.H., Gerard Fernando, M.D., Jarred Zucker, M.D., Grace Chang, M.D., M.P.H.

SUMMARY:

Introduction: Hospital readmissions are a leading topic of practice reform and healthcare policy. They may be used as a marker for quality of care measurement, patient and family satisfaction, and cost. Most research suggests that hospitals do not have accurate predictive tools to identify those at risk for readmission. Further, many studies specifically exclude psychiatric and substance use patients. This study undertakes the evaluation of predictors associated with frequent hospital readmission for medically managed detoxification defined as 4 or more admissions in a 12 month period within a Veterans Health Administration inpatient detoxification unit. We hypothesized that those who were frequent users of the inpatient detoxification services were less likely to keep outpatient appointments after discharge in comparison to those with fewer inpatient detoxification admissions. Methods: In FY 2012, 623 unique individuals accounted for 977 admissions; 39 of those individuals had 4 or more admissions (frequent users). A random sample of 41 individuals with fewer than 4 admissions (comparison group) was selected using a computer program. A chart abstraction tool was developed and tested to extract variables. Data were analyzed using SAS version 9.3. The two groups were compared using the t-test, chi-square test, Poisson regression analysis and logistic regression analysis. Results: 39 individuals (6.3%) accounted for 23% of admissions. There were no statistically significant differences with regards to mean age, race, marital status, homelessness, rate of employment, percent service connected disability, rate of diagnosis of PTSD or TBI. However, the frequent user group had higher percentage of diagnosis of primary alcohol use disorder (82% vs. 58% p=0.02), more years of use of their primary drug of choice (28.9 yrs. SD=16.7 vs. 19.6 SD=13.5, p=0.007), more detoxification admissions (p<0.0001), and "other" inpatient admissions (p=0.0008). Both groups kept their 7-day post-discharge appointment at the same rate of

somewhat less than 50% (p=0.92). Discussion: There was no difference in the rate of outpatient appointments kept within 7 days of discharge between the frequent users and the comparison group. The two differed, however, in three general ways: They were more likely to have a primary diagnosis of alcohol use disorder, the chronicity of their substance use disorder was of longer duration, and they had more "other" inpatient admissions. Although inpatient detoxification is a common acute treatment offered to those with substance use disorder, it is rarely sufficient to produce sustained remission for this often-chronic disease. Future efforts should include the development of strategies to provide longer and more intensive acute treatment at time of relapse, ensure the effective transfer of patients from the inpatient setting to long-term treatment, and utilize effective novel care strategies during the maintenance phase of treatment.

INTERVENTIONS TO IMPROVE HOSPITAL CONSUMER ASSESSMENT OF HEALTHCARE PROVIDERS & SYSTEMS BY TRAINING STAFF MEMBERS WITH EFFECTIVE COMMUNICATION SKILLS

Lead Author: Muhammad Rizvi, M.D.
Co-Author(s): Muhammad Rizvi, M.D, Ebone M. Carrington, M.P.A., Charles Nnadi, M.D., Zafar Sharif, M.D.

SUMMARY:

Objective: "Interventions to Improve Hospital Consumer Assessment of Healthcare Providers & Systems (HCAHPS) by Training Staff Members with Effective Communication Skills".
Background:
The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), is a standardized survey developed and mandated by the Centers for Medicare and Medicaid Services (CMS) to measure hospital experience by patients on ten measures of care. The public reporting initiative not only affects hospital reputation and standing in the community, it also serves as the basis for financial payments. Of the 21 patient perspective questions on the survey, 9 of them involve communication. The Joint Commission for Accreditation of Health Care Organizations (TJC) has noted, "Physicians are most often sued, not for bad care, but inept communication" (2005). A 2003 study by JCAHO documented that communication breakdown was the root cause of more than 60% of 2,034 medical errors, of which 75% resulted in the patient's death (COPIC, 2005). In other words, 915 people died as a result of a communication error. AIDET is an effective communication tool developed by Studer Group to improve patient satisfaction and enhance financial outcomes in health care systems.(www.studergroup.com).
Methodology:
First phase: Staff members from each service s were selected on the basis of merit and trained as master trainers for effective communications skills with AIDET/CARES.
Second phase: The hospital's around 2190+ employees are distributed into 10 working groups of 44 AIDET master trainers. The AIDET master trainers from each service are training other staff members with effective communication skills.
Third phase: The working groups will constantly monitor the implementation and consistent utilization of effective communications techniques by the trained staff members in their everyday communication with patients and other staff members.
Results:
The data obtained from Press Ganey, HCAHPS summary report, surveys returned till January 15, 2014, Pre-Intervention 3Q2013 (N=212) and Post Intervention 4Q2013 (N=136), Harlem Hospital Center, including department of Medicine, Psychiatry, Surgery, OB GYN and ICU. All the HCAHPS survey domains showed improvement from 3Q2013 (pre-intervention) to 4Q2013 (Post intervention), rate hospital, improved from 53 % to 59%, communication with doctors improved from 74% to 81%, pain management improved from 57% to 64% and communication about medicine improved from 53% to 61%.
CONCLUSIONS:
The utilization of AIDET/CARES as an effective communications tools has resulted in improvement in all domains of HCAHPS survey in 4Q2013 as compare to 3Q2013. Consistent utilization and implementation monitoring of AIDET/CARES is critical to sustain and enhance patient satisfaction.
In future, the model/strategy use to improve HCAHPS scores in Harlem Hospital Center can be applied at other facilities in Health and Hospital Corporation.

INTERVENTIONS TO IMPROVE THE BASELINE AND REGULAR MONITORING OF METABOLIC PANEL AND BMI OF PATIENTS RECEIVING ANTIPSYCHOTIC MEDICATIONS

Lead Author: Muhammad Rizvi, M.D.
Co-Author(s): Charles Nnadi, M.D., Zafar Sharif, M.D.

SUMMARY:
Introduction:
Individuals with schizophrenia have a 20% shorter life expectancy than the population at large and a greater vulnerability to several illnesses, including diabetes, coronary heart disease, hypertension and emphysema. (Newman et al 1991). Currently, compliance with FDA warnings, American Diabetic Association and American Psychiatric Association guidelines for the monitoring of metabolic side effects of antipsychotic medications have been poor, as shown by a survey of a cohort of 109,451 patients receiving second-generation antipsychotics from California, Missouri and Oregon, in which fasting glucose was measured in 27% and lipid panel in only 10% of the patients. (Morrato EH, et al 2010). In 2003, the Food and Drug Administration (FDA) required a warning on diabetes risk for second generation antipsychotic (SGA) drugs.
AIMS OF STUDY:
1-To analyze the clinicians' attitude through a survey and a retrospective chart review of randomly selected patients prescribed with antipsychotic medications in the outpatient unit to observe consistency of adherence to APA guidelines by clinicians.
2-To raise awareness and to provide education to clinician in order to improve baseline and regular monitoring of metabolic panel as per guidelines.
3-To study the effect of education in changing the attitude and practice of clinicians regarding monitoring of the metabolic panel by performing a chart review of randomly selected patients prescribed with antipsychotic medications in the outpatient unit to observe consistency of adherence to APA guidelines by clinicians.
Methods:
A pre intervention, retrospective chart review of 50 randomly selected patients in the Outpatient Psychiatry unit, will be done to assess the monitoring of metabolic panel, including, fasting plasma glucose, lipid levels, blood pressure, HbA1C, waist circumference and BMI at baseline and at monthly intervals of patients on antipsychotic medications as established by ADA/APA/HHC guidelines in patients on second generation antipsychotics.
One hour education lecture focused on raising awareness among clinician regarding APA/HHC/ADN guidelines of monitoring metabolic panel.
A post intervention chart review of 50 randomly selected patients in the Outpatient Psychiatry unit, will be done to assess the monitoring of metabolic panel, including, fasting plasma glucose, lipid levels, blood pressure, HbA1C, waist circumference and BMI at baseline and at monthly intervals of patients on antipsychotic medications as established ADA/APA/HHC guidelines in patients on second generation antipsychotics.
Anticipated outcomes:
We anticipate increase awareness and change of attitude of the clinicians regarding consistent adherence to the guidelines and improvement in the frequency of monitoring of metabolic panel, including, fasting plasma glucose, lipid levels, blood pressure, HbA1C and BMI, waist circumference of patients as per established ADA/APA/HHC guidelines in patients on SGA.

COMPARING THE BECK DEPRESSION INVENTORY-II (BDI-II) AND PATIENT HEALTH QUESTIONNAIRE (PHQ-9) DEPRESSION MEASURES IN AN OUTPATIENT BARIATRIC CLINIC

Lead Author: Paul Schutt, M.D.
Co-Author(s): Paul Schutt, M.D., Simon Kung, M.D., Karen Grothe, Ph.D., Matthew M. Clark, Ph.D.

SUMMARY:
Background: Patient self-assessment instruments are useful in screening and documenting the course of depressive symptoms with minimal provider time. Two popular instruments are the Beck Depression Inventory (BDI-II) and the Patient Health Questionnaire (PHQ-9). We compared the outcomes of these instruments in an outpatient bariatric clinic.

Methods: A retrospective study of 1034 bariatric surgery candidates who completed a

PHQ-9 and BDI-II as part of routine intake between January 2011 and November 2013. Spearman's correlation coefficients for total PHQ-9 and BDI-II scores and weighted kappa coefficients for PHQ-9 and BDI-II categories were calculated. The five PHQ-9 categories were converted to the corresponding four BDI-II categories. Weighted kappa and total percent agreement was also determined for the items reguarding suicidality.
Results: Spearman's correlation between total scores was 0.74 ([0.715,0.77], p<0.0001). The mean PHQ-9 and BDI-II scores were 6.2 (SD 4.7) and 11.8 (SD 9.7), corresponding to the "mild" and "minimal" categories respectively. Weighted kappa analysis demonstrated a moderate association between categories of depression severity (Î°=0.488, CI 0.45-0.526) and a moderate to substantial association between responses regarding suicidality (Î°=0.585, CI 0.503-0.667). Total agreement of categories on the answered items regarding suicide was 92.3%
Limitations: Retrospective design and no monitoring of which instrument was completed first in case that influenced patient response to the second instrument
Conclusions: PHQ-9 and BDI-II scores in a bariatric outpatient clinic are closely correlated, and categories of depression severity and responses to suicidality show moderate to substantial inter-rater reliability. These findings provided added support the use of PHQ-9 in a bariatric population.

BENZODIAZEPINES AND DRUGS WITH ANTICHOLINERGIC ACTIVITY INCREASE MORTALITY IN PATIENTS WITH DELIRIUM

Lead Author: Michael A. Serna, M.D.
Co-Author(s): Kamaldeep Sandhu, M.D., Joachim Raese, M.D.

SUMMARY:

Delirium is a complex neurobehavioral syndrome characterized by a disturbance in the level of consciousness and a change in cognition. It is estimated that 10-30% of patients admitted to the hospital develop delirium. Risk factors for developing delirium include age, dementia, surgical procedures in the elderly, drugs with anticholinergic properties (DAPs), and infection. The mortality rate increases by 11% for every additional 48 hours of active delirium. Delirium is a risk factor for cognitive impairment and dementia. Benzodiazepines have also been identified as risk factors for dementia. Little data exists on the use of benzodiazepines and DAPs after the diagnosis of delirium on measures of treatment outcomes such as mortality and length of stay (LOS).
Hospitalized patients age 18 years or older at Kaweah Delta Health Care District (KDHCD) who were admitted between January 2012 to February 2014 were screened for ICD-9 diagnostic codes of delirium and use of benzodiazepines and 49 DAPs (including vancomycin) using electronic medical records. The relationship of these drugs with mortality and LOS was examined.
A total of 908 patients met the inclusion criteria at admission or during hospitalization. Of the 908 patients 112 died. Patients who received benzodiazepines had higher mortality (27.7%) compared to those who did not receive benzodiazepines (10.6%), Î§2 (1, N = 908) = 22.77, p < 0.001, odds ratio (OR) = 3.24, 95% CIs [1.96, 5.36]. The use of DAPs was associated with significantly higher mortality (21.4%) compared to those who did not receive DAPs (7.9%), Î§2 (1, N = 908) = 34.59, p <0.001, OR= 3.22, 95% CIs [2.15, 4.83]. Vancomycin was associated with higher mortality (26.9%) compared to patients who did not receive vancomycin (7.9%), Î§2 (1, N = 908) = 54.26, p < 0.001, OR = 4.17, 95% CIs [2.77, 6.28] and with longer mean LOS (p < 0.001). LOS of patients who received benzodiazepines after diagnosis of delirium was not significantly different compared to patient who did not receive benzodiazepines (p = 0.10).
The use of benzodiazepines and DAPs in hospitalized patients diagnosed with delirium is associated with significant increase in LOS and mortality. These results suggest that DAPs are not only a risk factor for developing delirium, but also may be associated with longer LOS and mortality. However, the relationship between vancomycin and poor treatment outcomes may be mediated secondary to infection rather than anticholinergic properties of vancomycin.

LONGER DURATION OF COPD IS ASSOCIATED WITH DOMAIN SPECIFIC AND GLOBAL COGNITIVE DECLINE

Lead Author: Balwinder Singh, M.D., M.S.

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SUMMARY:

Background- Recent studies have suggested COPD is a risk factor for mild cognitive impairment. However, there is little information on the association between COPD, COPD duration, and global- and domain-specific cognitive decline.

Objectives-To examine whether presence of COPD and duration is associated with domain-specific and/or global-cognitive-decline among cognitively normal (CN) individuals.

Methods -Participants included 1,610 randomly selected, CN individuals aged 70-89, enrolled in the prospective population-based Mayo Clinic Study on Aging. Individuals underwent comprehensive cognitive assessment at baseline and every 15 months that included 9 tests covering 4 domains (memory, executive function, visuospatial ability, and language). The tests within each domain were averaged to create z-scores; global z-scores were calculated by averaging all domains. The association between COPD duration and change in the global and domain-specific z-scores from baseline was examined using linear mixed-effects models. Multivariate models adjusted for age, sex, education, APOE genotype, Diabetes, Hypertension, Coronary artery disease, depression, stroke and BMI.

Results - After adjusting for covariates, a longer duration of COPD was also cross-sectionally associated with worse performance in domains of memory, language, visuospatial, and global cognition. Longitudinally, a longer duration of COPD at baseline was associated with a faster rate of decline in memory, language, and global cognitive domains ($p < 0.05$).

Conclusion -Longer duration of COPD is associated with and predictive of greater cognitive decline. Physicians should recognize the potential impact of COPD on cognition in evaluating elderly patients with COPD.

Study location: The study was conducted at the Mayo Clinic, Rochester, MN.

POSTPARTUM DEPRESSION: COLLABORATING WITH WOMEN IN A BRIEF PSYCHO-EDUCATIONAL INTERVENTION WITH MOTIVATIONAL ELEMENTS

Lead Author: Erin Smith, M.D.

Co-Author(s): Priya Gopalan, M.D., Antoine Douaihy, M.D., Frank Ghinassi, Ph.D.

SUMMARY:

Introduction: Postpartum depression (PPD) is the most common complication of pregnancy. 10-15% of women will experience a new episode of depression during pregnancy or in the initial months after delivery, yet diagnosis rates are low and half of all cases go untreated. In those women diagnosed with depression, only 20-40% seek care. A strong body of evidence supports motivational interviewing (MI)-based brief interventions in changing negative health-related behaviors, but little research has been done in postpartum populations. Our objective is to evaluate the effects of an MI-based educational intervention conducted on the postpartum unit of a large obstetric hospital on follow-up with routine obstetric and pediatric appointments. A secondary aim is to assess whether this intervention reduces stigma associated with PPD and a new mother's willingness to discuss her mental health with healthcare providers or family.

Methods: We are in the process of providing an MI-based educational intervention to women without serious chronic illness who deliver healthy babies at Magee Women's Hospital in Pittsburgh. A non-intervention group of women is included for comparison who receive the existing standard of care for PPD education. The MI-based intervention consists of a 20-25 minute individual face-face session which is preceded by a pre-intervention questionnaire assessing existing knowledge of PPD and a woman's views on depression. The Edinburgh Postnatal Depression Scale (EPDS) is also administered prior to starting the session. An immediate post-intervention questionnaire with a Likert-scale format assesses experience with the session as well as perceived stigma of depression and whether the intervention had an impact on this. Women in both groups are contacted by telephone at 8 weeks. During this phone call we administer a repeat EPDS, assess whether they attended follow-up appointments,

and for the non-intervention group, a brief questionnaire is administered regarding their views about PPD education. Additionally, electronic health records are used for tracking.
Results: Six-month data will be presented and outcomes will include rates of follow-up with a health care provider, awareness of PPD, perceived stigma about discussing depressive symptoms with a healthcare provider or loved one and improved experience with the postpartum course. EPDS scores will also be examined and a barrier analysis will be conducted regarding internal and external factors that may influence a woman's decision to attend or seek follow-up care.
Conclusions: We hypothesize that an MI-based intervention group will have better rates of follow-up and report decreased stigma compared to the comparison group.

PSYCHIATRIC SYMPTOMS OF WOMEN WITH CO-MORBID BIPOLAR AND PREMENSTRUAL DYSPHORIC DISORDER

Lead Author: Mara Smith
Co-Author(s): Mara Smith, M.D., Sabrina K. Syan, Olivia Allega, Natasha Snelgrove M.D., Manpreet Sehmbi, Luciano Minuzzi M.D. Ph.D., Benicio N. Frey M.D. M.Sc. Ph.D.

SUMMARY:

Background: Women meeting criteria for Premenstrual Dysphoric Disorder (PMDD) are up to eight times more likely to be diagnosed with bipolar disorder. Previous studies have found that premenstrual exacerbation may be a clinical marker of worse prognosis in bipolar disorder, although the mechanism for this remains unclear. Here, we present the clinical data we have amassed to date from our project entitled "Brain correlates of emotional regulation in bipolar women with premenstrual dysphoric disorder".
Methods: Clinical data, including the Montgomery-Asberg Depression Scale (MADRS); Hamilton Depression Inventory (HAMD); Young Mania Rating Scale (YMRS); Biological Rhythms Assessment in Neuropsychiatry (BRIAN); Pittsburgh Sleep Quality Index (PSQI) and State Trait Anxiety Index (STAI), was collected from 31 women at the follicular (days 10-14 after onset of menses) and luteal phase (5 days preceding onset of menses) of the menstrual cycle. Twenty-two healthy controls without PMDD, eight healthy controls with PMDD, eight euthymic bipolar women without PMDD and eleven euthymic bipolar women with PMDD have completed the study to date. All women were euthymic for at least 2 months at the assessment. Using the Shapiro-Will test we determined that data was not normally distributed. We used the Kruskall-Wallis test to compare scores on the aforementioned scales between groups at both menstrual cycle phases. The significant findings at $p<0.05$ are highlighted here.

Results: Bipolar women with PMDD scored higher on the MADRS during both the luteal and follicular phases when compared to controls. Biploar women without PMDD also scored higher than controls during the luteal cycle only. Bipolar women with PMDD scored higher than controls on the HAMD during both phases. There were no significant differences noted in the YMRS scores between groups. With respect to the BRIAN, Bipolar with PMDD again scored higher than controls at during both phases. Bipolar women without PMDD also scored higher on the BRIAN compared to controls during the luteal phase. On the PSQI, Bipolar women with PMDD scored higher than controls during both phases. For the STAI-State, Bipolar women with PMDD scored higher than controls but only during the follicular phase. On the STAI-Trait, Bipolar women with PMDD scored higher than controls at the follicular phase but not the luteal phase. Bipolar women without PMDD scored higher on the STAI-Trait than controls at the luteal phase only.

Conclusions: The extent and severity of psychiatric symptoms varies across the menstrual cycle. This appears to be significant in euthymic bipolar women and much more pronounced in those with co-morbid PMDD.

BARRIERS TO MENTAL HEALTH CARE AMONG LOW-INCOME WOMEN IN VIETNAM

Lead Author: Kunmi Sobowale, B.A.
Co-Author(s): Victoria Ngo, Ph.D., Bahr Weiss, Ph.D., Thanh Tam Nguyen, M.S., Manh Nguyen, B.A., Lam Tu Trung, M.D.

SUMMARY:

Background
Despite an increased risk of developing depression, impoverished and low-income

women are less likely to receive mental health care. In order to better understand the barriers to care these women face, we assessed structural barriers to care (e.g., it is difficult to schedule an appointment) in a low-income population in Vietnam and predictors of these barriers.
Methods
We interviewed 88 low-income women presenting at four primary care clinics in Vietnam at baseline and after completion of a combined poverty alleviation and depression intervention. We assessed for structural barriers to care, depressive symptoms, health functioning, quality of life, personal depression stigma, mental health literacy, health self-efficacy, goal self-efficacy and socio-demographic characteristics. We used multivariable linear and logistic regressions for analysis.
Results
At baseline, 85% of women endorsed at least one barrier to care. The most frequently endorsed structural barriers were cost-related. Health and goal self-efficacy, depressive symptoms, and depression stigma were consistently associated with endorsement of structural barriers to care in logistic regressions. Higher levels of stigma and self-efficacy were significantly associated with lower number of endorsed barriers to care. Depressive symptoms were weakly associated with number of barriers endorsed. The linear regression model explained 40% of the variance in number of structural barriers endorsed. Although participant's total number of barriers endorsed did not decrease post-intervention, baseline goal self-efficacy scores predicted decreased endorsement of barriers post-intervention.
Conclusion
Low-income women in Vietnam face numerous structural barriers to care. Although seemingly fixed barriers, stigma, depressive symptoms, and goal self-efficacy may modulate the perception of structural barriers. Public health interventions should target these factors to better deliver mental health care to underserved populations.

THROUGH THICK AND THIN: THE INFLUENCE OF PRO-ANA WEBSITES ON ANOREXIA NERVOSA

Lead Author: Arianne St Jacques, M.D.
Co-Author(s): Helen O Halpin, M.D. MRC. Psych.

SUMMARY:
Traditional risk factors involved in the epidemiology for Anorexia Nervosa did not take into account the influence of the Internet. The self-described sub-culture represented on pro-ana websites has sought to re-define the illness as a lifestyle choice and, in so doing, serve as models for the disorder. Analysis of outcomes of more recent blinded control trials has shown that exposure to these sites can serve as a risk factor for developing and worsening Anorexia Nervosa, even in subjects with no history or symptoms. Restricting access and legislation has not had an effect. Practitioners should include screens of pro-ana website access when working with eating disordered patients, as well as being aware of common methods of deception taught on such websites to hide symptoms from caregivers.

THE IMPLICATIONS OF TECHNOLOGY AND SOCIAL MEDIA ON PSYCHIATRIC DIAGNOSIS, ACCESS TO TREATMENT, AND OUTCOME: SIX CASE EXAMPLES

Lead Author: Leah C. Susser, M.D.
Co-Author(s): Lauren Broderick, B.S., Julie B. Penzner, M.D.

SUMMARY:
Introduction:
Technology offers opportunities for identification of psychiatric symptoms through data about a patient's experience and via communication of distress, often leading to rescue or treatment.1 We present cases of suicide notes and symptoms that were conveyed technologically. We discuss implications of using different forms of technology, and we hypothesize that there are differences in illness, purpose, and consequence of each.
Cases:
Peri-Suicidal Communication
1. Mr. A is a 58-year-old man with remote psychiatric history but no suicide attempts who called 911 weeks after threatening suicide via text to a friend who informed him he could no longer stay with him.
2. Ms. B is a 26-year-old woman with one prior suicide attempt who had been contemplating ways to commit suicide, then texted a photo of pills in her hand, took the pills, and said she hoped to be "saved."

Symptom Presentation/Diagnosis
1. Mr. C is a 24-year-old man with prior psychiatric hospitalizations whose mania was noticed via inappropriate use of Facebook. He later regretted his posts.
2. Ms. D is a 23-year-old woman with past psychiatric hospitalizations who was admitted for mania after sending bizarre texts, posting a revealing photo on Instagram, and behaving strangely on videotape.
3. Ms. E is an 18-year-old woman whose first manic episode with psychosis was revealed via bizarre texts and delusions associated with Facebook.
4. Mr. F is a 32-year-old man without psychiatric history who presented due to delusions about monks, about which he blogged.
Discussion:
The implications of technology on psychiatry are evolving and important. As social media sites are increasingly used as outlets for emotional life, patients may use them for symptom expression or requests for help. Technology offers instant access to data. Earlier recognition of psychiatric symptoms provides the potential for rescue, whether by interruption of a suicide attempt or by access to treatment before symptoms worsen. Furthermore, the content of electronic communication provides objective data to add to a patient's own account.1 This aids in creating a timeline, diagnosis and formulation.1, 2 The cases presented here are of patients who express their psychiatric illness (either intentionally or unintentionally) using different forms of technology. Our cases demonstrate the differences between the diagnoses, purposes, and consequences of these means of communication. They also introduce the topic as one for future research, particularly as technology evolves and influences our styles of interacting.
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THE PREVALENCE OF BIPOLAR DISORDER AMONG PATIENTS DIAGNOSED WITH BORDERLINE PERSONALITY DISORDER AND THE RELATIONSHIP BETWEEN BOTH DISORDERS

Lead Author: Pedro R. Tanajura
Co-Author(s): Arthur P. MelgaÃ§o, Caio B. Fontes, Jonathas T. Salles, ValquÃria F. Oliveira, Tatiana T. G. M. V. Loureno, M.D., Ph.D.

SUMMARY:

Introduction: Bipolar Disorder is among the comorbidities associated with Borderline Personality Disorder. It is estimated that 20% of patients diagnosed with Borderline Personality Disorder also have Bipolar Disorder. Some studies question if Borderline Personality Disorder should be classified under the Bipolar Disorder Spectrum.
Objective: To review the relationship between Bipolar and Borderline Personality Disorder, seeking to understand the correlation of the clinical aspect in patients already diagnosed with Borderline Personality Disorder.
Materials and Methods: Research articles using the keywords "borderline personality disorder" and "bipolar disorder" in PubMed and SciELO data.
Discussion: Patients diagnosed with Borderline Personality Disorder are more likely to have Bipolar Disorder compared to those diagnosed with other personality disorders.
Conclusion: The correlation between the two disorders suggest an etiologic relationship or an overlap of diagnostic criteria, especially between Borderline Personality Disorder and Bipolar Disorder II. However, more studies are necessary.

EEG-NEUROFEEDBACK IN ADHD: CURRENT LITERATURE REVIEW AND CONTROVERSIES

Lead Author: Tina Thakrar, M.B.A., M.D.
Co-Author(s): Vishal Madaan, MD

SUMMARY:

Objectives: Understand the potential of using EEG-NF, as monotherapy and an adjunct in the treatment of ADHD in adolescents. Highlight the controversies associated with EEG-NF for treatment of ADHD.
Introduction: With an estimated prevalence of 5-7%, ADHD is one of the most common childhood neuropsychiatric disorders. It is

estimated that 50-60% of the children continue to have symptoms in adolescence and 50% into adulthood. While current psychopharmacological options have a significant body of evidence to support their use, they are often associated with adverse effects. It is suggested that up to 30% of children treated with stimulants may either suffer from adverse effects, or not have optimal improvement. As a result, there is a significant unmet need targeting use of non-pharmacological options for ADHD management. EEG-Neurofeedback (NF) therapy, has received increased attention lately. NF is a behavioral technique that is based on the premise that a specific mental state are associated with a certain brain state, such as attention being associated with distinct brain activity. NF may train individuals to improve upon self-regulation skills of specific brain activity patterns through positive feedback on brain activity changes. This poster reviews the current research on the efficacy and role of NF on the treatment of ADHD.

Methods: A literature search was conducted through PUBMED for 'Neurofeedback AND ADHD' and 'non-pharmacological treatment of ADHD' with limits set for years 2000-2014, English language, and adolescent population. Studies were chosen based on the use of NF as at least one of the treatment modalities studied.

Results: The search resulted in 48 papers, which were further narrowed to 10 randomized control trials (RCTs), 1 multicenter controlled trial, 1 open label study and 4 review papers. Of the review studies, two found no evidence that NF improved functioning. One cited a study that showed NF to be a possibly efficacious treatment. The final review found that NF is effective however reviewed only 4 trials. Of the 11 RCTs reviewed, 6 showed that NF reduces symptoms of ADHD. Two studies also performed 6 month follow-up and showed that the improvement was maintained post-treatment. The multicenter trial showed that EMG feedback can be used as an adequate control and in direct comparison, NF was found to effectively reduce inattention symptoms compared to EMG feedback. The open label study also found that there is a possibility of personalizing NF in an attempt to further improve response rates.

Conclusions: Results showed mixed reviews of the efficacy of NF, however based on larger studies NF shows promise in treating as well as long-term symptom management of ADHD. NF may also play a significant role as an adjunct treatment to current pharmacological management standards. Similar to pharmacological treatments, the role of NF may be further expanded by personalization of treatment to individual patient needs.

PHARMACOTHERAPEUTIC OPTIONS FOR TREATMENT OF ADOLESCENT SUBSTANCE ABUSE DISORDERS: A LITERATURE REVIEW

Lead Author: Tina Thakrar, M.B.A., M.D.
Co-Author(s): Vishal Madaan, MD

SUMMARY:

Purpose: Adolescent substance use disorders (SUDs) have been proven to be difficult to treat and are thought to predispose patients to adult SUD. Treating a patient earlier in life, is thought to decrease the rate of progression to adult SUD as well as psychiatric co-morbidities. This article reviews recent research findings on the treatment of adolescent SUD. Specifically the treatment of opioid, cannabis, and tobacco use in the adolescent population.

Methods: A computerized search was performed of available literature focusing on pharmacotherapy of SUD in adolescents. Data was also gathered from relevant peer-reviewed articles and studies.

Results: The primary search resulted in ten studies. Eight randomized control trials (RCTs) and two open trials were analyzed. Of these trials, five addressed SUD with co-morbid psychiatric diagnoses. Psychopharmacology does appear to play a significant role in treatment of primary substance use disorder as well as a limited role in co-morbid psychiatric disorders in the adolescent population. The majority of current adolescent SUD research focuses on psychosocial interventions rather than pharmacological treatment, however recent studies have shown that medication in addition to therapy may have synergistic effects.

Conclusion: Larger and longer term clinical trials are required to more accurately delineate the specific roles of pharmacotherapies in the prevention, treatment, and reduction of relapse for SUD in the adolescent population.

UTILIZING A APP ON PERSONAL SMARTPHONES TO ASSESS PHQ-9 DEPRESSIVE SYMPTOMS IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER

Lead Author: John Torous, M.D.
Co-Author(s): Meghan Shanahan, R.N. , Patrick Staples M.S., Charlie Lin, M.S., Pamela Peck, PsyD., Jukka-Pekka Onnela PhD., Matcheri Keshavan M.D.

SUMMARY:
Background: Accurate reporting of patient symptoms is critical for diagnosis in psychiatry. Smartphones offer an accessible and relatively low cost means to collect patient symptoms in real
time and aid in care.

Methods: We created a custom iPhone and Android smartphone application to assess PHQ-9 symptoms of major depressive disorder. Thirteen patients with major depressive disorder were referred by their clinicians and used the application three times per day for one month to record their PHQ-9 depressive symptoms. Patients received care as usual and also took a traditional paper/pencil PHQ-9 before and after using the smartphone application.
Results: Overall adherence was 77.8%. PHQ-9 estimates collected from the
application had strong correlation (r=0.85) with traditionally administered PHQ-9 scores but
application collected scores were 3 points higher on average. More subjects reported suicidal
ideation to the application than they did on the traditionally administered PHQ-9.
Conclusions : Patients with major depressive disorder are able to utilize a smartphone application on their personal smartphone to monitor symptoms in real time. Data collected via the application has strong correlation with traditional paper/pencil PHQ-9 data although application collected data may be more sensitive and better able to detect suicidal ideations.

THE OLD AND NEW OF PSYCHOTROPICS IN CANCER PATIENTS: THE CHALLENGES AND BENEFITS: A REVIEW

Lead Author: Samidha Tripathi, M.B.B.S., M.D.
Co-Author(s): Carolina Retamero, M.D.

SUMMARY:
Objectives:
1. To understand the mechanism of drug interactions between anti-cancer drugs and psychotropics.
2. Identify common drug interactions, as seen in consultation and liaison service, between these agents.
3. To get an overview of recent research and new indications for psychotropic drug use in cancer patients.
Introduction: The role of psychotropic agents in oncology and palliative medicine has been well established. De novo diagnoses like, depression, anxiety, adjustment disorders are commonly seen in cancer patients along with pre-existing mental health issues. We discuss the common drug interactions between these agents through a case report, adjunctive use of psychotropics along with anti-cancer drugs and new indications for use of psychotropic agents in cancer patients.
Method: Pubmed and OVID database was searched using MESH terms "Drug Interactions", "Psychotropic drugs +Anticancer drugs", Antidepressants in cancer", Antipsychotics in cancer", "Anxiolytics in cancer."
Results: Our literature review found various drug interactions between anti-cancer agents and primarily antidepressants. Most of these drug interactions were medicated through the Cytochrome P450 isoenzyme pathway. The challenges of titrating these agents with concomitant use of antineoplastic agents, was also highlighted. There were also reports about use of psychotropics (antidepressants and anti-psychotics) for treatment of side effects (hot flashes, nausea) from chemotherapeutic agents, utilizing mood stabilizers (lithium) as 'neuroprotective agents' in cancer patients, and upcoming research on some first generation antipsychotics (Chlorpromazine) enhancing cytotoxic effects of certain chemotherapeutic agents (tamoxifen) effects.
Discussion: Psychotropic drugs are commonly used in treating co morbid conditions in cancer patients. Polypharmacy is common in such patients hence a good understanding of the mechanism of drug interactions between psychotropics and anti-cancer drugs, is imperative. That being said, upcoming research has shown the utility of psychotropic agents in augmenting and treating certain side effects of chemotherapeutic agents.

Relevance: This review is relevant in that it highlights the common drug interactions encountered by C&L psychiatrists working with cancer patients and also broadens our understanding of 'off label use' of psychotropics in these patients.

PHYSICAL HEALTH MONITORING IN PATIENTS ON A PSYCHIATRIC WARD WHO ARE PRESCRIBED ATYPICAL ANTIPSYCHOTICS

Lead Author: Rebecca Tudhope, B.Sc., M.D.
Co-Author(s): Ajay Prakash, MBBchBAO, M.D.; Kamini Vasudev, M.D., MRCPsych

SUMMARY:

BACKGROUND: Increased use of atypical antipsychotics heightens the risk of metabolic side effects in a population already at elevated risk of cardiovascular disease. While guidelines exist to direct health monitoring, studies show sub-optimal screening and treatment for metabolic effects. We, therefore, aimed to assess the prevalence of physical health monitoring in patients receiving antipsychotics on the psychiatric ward.
METHODS: A clinical audit tool was designed to capture necessary monitoring parameters based on national guidelines. Retrospective review of patients discharged from the London Health Sciences Centre (LHSC) psychiatry ward between January and March 2012 was conducted and patients prescribed atypical antipsychotics routinely for more than three days were assessed to determine if parameters were measured within a year of admission.
RESULTS: 96 (62%) patients were prescribed atypical antipsychotics out of a total of 157 charts reviewed. Height and weight were measured in 73%, although none had a BMI calculated or waist circumference measured. After calculating BMI, 24% were in the obese range and 23% were considered overweight. Only 31% and 36% of patients had fasting glucose and lipids measured, respectively. 10% had an abnormal glucose and 63% had at least one abnormal lipid parameter. Only 25% with an abnormal value had action taken to address this, typically a medicine consult or dietary change. Overall, only 25% had mention of physical health follow-up by the family physician at discharge.
CONCLUSIONS: Patients prescribed atypical antipsychotics on the psychiatric ward are inadequately monitored for physical health. Looking forward, we aim to introduce a physical health monitoring checklist in the patients' record and evaluate this quality improvement program.

SMOKING WITH ANTIPSYCHOTICS

Lead Author: Noah Villegas, M.D.
Co-Author(s): Noah Villegas, M.D., Rashi Aggarwal, M.D.

SUMMARY:

Introduction:
Smoking is common among many psychiatric patients, and it is the most common substance abused in patients with schizophrenia. Most inpatient facilities do not allow smoking but do provide patients with substitute treatments like nicotine patch. It is well known that the levels of antipsychotics can be affected by smoking. However, the effect of smoking is not uniform on all the antipsychotics. It is not clear which, if any, antipsychotics might be preferable in patients with nicotine dependence.
We reviewed the literature to determine which antipsychotics are affected by smoking and how are they affected. We also summarize how the results may be applied to patients who smoke and utilize antipsychotics.
Method:
A literature search was conducted using Pubmed and Ovid-Medline. The following MESH terms were used: antipsychotics and smoking, smoking and antipsychotic metabolism. We also did cross-checks of reference list cited in existing articles.
Results:
The review of the literature showed that nicotine itself does not have a direct effect on antipsychotics and it is the polycyclic aromatic hydrocarbons (PAH) contained within the inhaled smoke that affects the metabolism of antipsychotics. The PAH affect the CYP1A2 and increase metabolic clearance of the drug lowering the serum drug concentrations. The fact that it is the PAH in the smoke and not the nicotine itself means that the nicotine patch has no affect on the metabolism of antipsychotics. This would suggest that serum levels of medication for a patient on a nicotine patch are different for that same patient when smoking.
The antipsychotics known to metabolize via the CYP1A2 are clozapine, olanzapine haloperidol, chlorpromazine, and fluphenazine. Antipsychotics that are not affected by smoking

are quetiapine, risperidone, paliperidone, iloperidone, lurasidone, and ziprasidone. What is unknown is how much change in levels occurs by smoking with each drug.
As noted earlier the nicotine patch does not have the same metabolizing affect on antipsychotics as smoking. Most inpatient units do not allow smoking and provide nicotine patches during admission. Initially it appears a medication adjustment may be necessary for inpatient chronic smokers to compensate for the affects of smoking when discharged to maintain optimum levels. However without knowing the correlation of cigarette quantity to drug levels for each medication it is unknown if a medication adjustment is necessary.
More studies should be done in order to correlate cigarette quantity to medication metabolism to help optimize patient medication to account for the metabolizing affects of cigarette smoke.
Conclusion:
Components of cigarette smoke and not nicotine effect CYP1A2 causing increased metabolism thereby lowering serum levels of medication. Medications that should be used for chronic smokers are quetiapine, risperidone, paliperidone, iloperidone, lurasidone, and ziprasidone.

LONG-ACTING INJECTABLE ANTIPSYCHOTICS IN EARLY PSYCHOSIS: FAMILY PERSPECTIVES

Lead Author: Nishardi T. Wijeratne, M.D., M.H.Sc.
Co-Author(s): Ranjith Chandrasena, M.D., FRCPC

SUMMARY:

Long acting injectible antipsychotics (LAI) pose a favourable option in early psychosis given the high rate of non-adherence and partial acceptance of reality of the illness. A modest correlation exists between the percentage of months of good adherence and the average level of family support. We attempt to elucidate the perspectives of family members towards the use of LAI in their family member with early psychosis.
This Qualitative study was conducted using grounded theory. The study was conducted in a rural community hospital which functions as a satellite education site for an academic Psychiatry department in Ontario, Canada. Ten caregiver family members of clients attending the community early psychosis clinic were recruited and interviewed on perceived benefits and reservations on the use of LAI in early psychosis. Ethics approval was obtained by the hospital and university research ethics boards.
Perceived benefits of LAI by caregiving family members include convenience of use and improved adherence for the client as well as maintaining clinical stability. Reservations of family members towards LAI include dislike of needles; possibility of adverse effects and prohibitive cost of LAI. Factors moderating the uptake of LAI include client's insight into consequences of poorly controlled illness; influence of the clinical team as well as family and peer influence.
Long acting injectible antipsychotics are evidence based feasible option for treatment of early psychosis. Caregivers closely involved with young adult clients recovering from early psychosis report better functional outcomes such as semi-independent living, academic and vocational engagement on LAI. Unfortunately the uptake of LAI in early psychosis continues to be suboptimal. This may be partly due to negative perspectives of clients and their caregivers. Improvement of uptake of LAI in this uniquely vulnerable clientale should be tackled both at the individual and organizational level.

PHARMACOTHERAPY VIA TELEPSYCHIATRY: A LITERATURE REVIEW AND QUALITY IMPROVEMENT PROJECT

Lead Author: Laura Williams, M.B.B.S.
Co-Author(s): Soraya Mumtaz, M.D., Allison Crawford, M.D.

SUMMARY:

OBJECTIVE: Analysis of a patient satisfaction survey of a telepsychiatry service revealed a high degree of satisfaction with the service, with opportunity for quality improvement in physician communication around pharmacotherapy recommendations.
METHODS: In order to develop a quality improvement initiative, the authors searched MEDLINE, EMBASE, PsycInfo, CINAHL, and Cochrane using subject headings and keywords, and conducted a hand search, including relevant grey literature. Articles were included if they were in English, discussed the use of pharmacotherapy interventions via

telepsychiatry, or the use of Pharmacists as part of the interdisciplinary telepsychiatry team.
RESULTS: 395 unique references yielded 30 relevant publications. The literature and guidelines on pharmacotherapy in telepsychiatry is sparse, and primarily descriptive. It does provide some guidance for safe prescribing practices in the telepsychiatry context.
DISCUSSION: We discuss practice and medicolegal implications of prescribing medication via telepsychiatry, in the areas of: i) patient psychoeducation; ii) safety; iii) effective consultation; and, iv) medicolegal parameters. Working with a Pharmacist we developed tools to guide physician prescribing practices and provider-patient communication around medication interventions. A more evidence-based approach to the use of pharmacotherapy in the telepsychiatry context is needed.

TRENDS IN VASCULAR RESPONSE IN PATIENTS WITH TRAUMATIC BRAIN INJURY

Lead Author: Philip M. Yam, M.D.
Co-Author(s): Kathy A. Williams, M.A., Michael N. Dretsch, Ph.D., Donna Neuges, R.N., Geoffrey G. Grammer, M.D., Erika M. Kappes, D.O., Thomas J. DeGraba, M.D.

SUMMARY:
BACKGROUND: Mild traumatic brain injury (mTBI) has contributed to significant suffering for military service members with prevalence rates of 22.8% in deployed service members in the Iraq and Afghanistan wars. Victims of mTBI may experience headaches, dizziness, and cognitive impairment. Evidence suggests that persons exposed to mTBI display abnormalities in cerebral vascular reactivity (CVR) measured by transcranial Doppler (TCD). Studies also show that healthy subjects have decreasing mean response in CVR with successive decades. However, if higher degree of impairment in CVR is suggestive of a worse symptomatology and thus fitness for duty, there is potential for an observed difference in active duty time when compared to having abnormal CVR in patients with mTBI. METHODS: 145 Active duty U.S. military service members with a diagnosis of mTBI and a psychological health condition were evaluated with TCD to assess their CVR to hypercapnia by measuring breath holding index (BHI) of their middle cerebral arteries. Patients with BHI â‰¤ 1.0 were deemed having abnormal CVR, and patients with BHI >1.2 were deemed having normal CVR. Patients with borderline BHI were excluded. A student's T-test was used to compare difference in means in age and active duty time in service of those with abnormal or normal BHI. RESULTS: The comparison groups were well matched. There were no significant differences with regards to education or gender for the normal BHI group and the abnormal BHI group. Of 145 subjects, 64 (44.1%) had abnormal BHI, indicating impaired CVR. Those with abnormal BHI had a significantly lower average time in service (11.9 years, SD = 7.7) versus normal BHI (15.7 years, SD = 6.4), p= 0.006. The average age of those with abnormal BHI was 34.4 years (SD = 8.8) compared to those with normal BHI with average age of 37.2 (SD = 7.5), p = .064. CONCLUSIONS: The findings suggest that patients with mTBI who have abnormal CVR have less time in active duty service. While not significant, there was a trend between abnormal CVR and age. This study uses a biological marker in mTBI to assess persistence of neurological network disruption in service members with ongoing post concussive syndrome. Prognosis of mTBI is varied, and it may be useful to further research abnormal CVR as it relates to blast exposure, time from most recent TBI, clinical post concussive symptoms, and psychiatric disorders.

INPATIENT FACTORS THAT PREVENT THE PROGRESSION OF AGGRESSION TO ASSAULT: RESULTS FROM A PUBLIC SECTOR HOSPITAL

Lead Author: Apwinder Kaur, M.B.B.S., M.H.A.
Co-Author(s): Syed K. Abubaker M.D., Won-ok Kim, Philip Candilis, M.D.

SUMMARY:
Violence on inpatient units represents a significant portion of violence committed by persons diagnosed with mental illness. In studies identifying violence risk among mentally ill groups, 17-50% of involuntarily committed patients commit acts of violence, more than many other comparison groups (uncommitted inpatients, outpatient, community samples). Prevalence rates may vary from 16% during the first week of hospitalization to 23% during any

time during hospitalization, with nurses bearing the brunt of patient assaults. Indeed rates of inpatient staff assault may be greater than one physical assault per staff per year.

For Saint Elizabeths Hospital, the District of Columbia's public sector hospital, Unusual Incidents (UIs) related to some type of violence, including physical/sexual assault, property destruction, psychiatric emergency, seclusion/restraint event, self-injurious behavior, or suicide attempt/gesture, composed 44% of all patient UIs reported during FY13. However, these declined over the past three years: from an average of 45 per month in FY11 to 38 in FY12 and 36 in FY13, while aggressive/threatening behaviors themselves increased.

We consequently undertook an electronic record and chart review to assess whether specific individual risk factors contributed to this pattern or whether improved responses and interventions accounted for the trend.

We report on data identifying a series of factors with a potential influence on preventing the progression of aggression to assault, namely, medication type, group participation, risk level at admission, outside supports, LOS, treatment refusals, and staff interventions.

SMARTPHONE APPS FOR ANXIETY: A REVIEW OF COMMERCIALLY AVAILABLE APPS USING A HEURISTIC REVIEW FRAMEWORK

Lead Author: Steven Chan, M.B.A., M.D.
Co-Author(s): John Torous, M.D., Satish Misra, M.D., Erik Shwarts, M.D., Peter Yellowlees, M.D., M.B.B.S.

SUMMARY:

OBJECTIVE / BACKGROUND:
Mobile phones are increasingly being used amongst psychiatric patients with a majority of psychiatric patients using devices that can run applications. The increased commercial availability of telepsychiatry and mobile counseling services has led to a variety of ready-to-download apps on both Android and iOS devices. We highlight apps available for patients with anxiety disorders to use as an adjunct to psychiatric treatment, and review them accordingly.
METHOD:
A search was conducted on both Android's Google Play and iOS's App Store for anxiety apps with the highest total number of downloads. Apps were downloaded to devices that ran on one of those platforms. We then graded apps on heuristic criteria that observed their efficacy, data security and privacy, usability, features, and price. This heuristic framework is based on recent academic and commercial literature used to evaluate clinical informatics, telemedicine, and other systems and adapted for mental health technologies.
RESULTS:
A variety of applications were found suitable for use for anxiety disorders, but a number of applications that were available did not meet full criteria for the heuristics framework. Not all applications featured privacy policies. Some applications accessed features on the device - such as the device's precise GPS-based location, access to device's photos, and access to the phone's call log - not explained by the app developer.
CONCLUSION:
Smartphone apps can serve as a useful complement to existing treatment. Interactive components in such apps make them useful for self-help and enhance bibliotherapy. However, numerous apps had concerning security, privacy, and efficacy issues. Both clinicians and patients should be wary of these prior to downloading, purchasing, and using such apps.

COMPARING AFFECT RECOGNITION IN PATIENTS WITH AUTISM SPECTRUM DISORDER, ATTENTION DEFICIT HYPERACTIVITY DISORDER AND OBSESSIVE COMPULSIVE DISORDER

Lead Author: Danielle A. Baribeau, M.D.
Co-Author(s): Krissy Doyle-Thomas, Ph.D., Annie Dupuis, Ph.D., Alana Laboni, Ph.D., Paul D. Arnold, M.D., Russel J. Schachar, M.D., Jessica Brian, Ph.D., Azadeh Kushki, Ph.D., Rob Nicolson, M.D., Peter Szatmari, M.D., Evdokia A. Anagnostou, M.D.

SUMMARY:

Objective: To compare patterns of affect recognition across autism spectrum disorder (ASD), attention deficit hyperactivity disorder (ADHD), and obsessive-compulsive disorder (OCD).
Method: A group of 265 children with a mean age of 11.4 years (n= 118 with ASD, n= 71 with ADHD, n= 42 with OCD, and n= 34 controls) completed the Reading the Mind in the Eyes

Test- child version (RMET), as well as symptom/trait scales. Accuracy on the RMET was compared across disorders, by item valence and difficulty, and analyzed for association with trait/symptom scales.
Results: After controlling for age and sex, children with OCD scored the highest (72% correct) on the RMET, which did not differ significantly from controls (68%); children with ADHD (63%) and ASD (55%) scored lower than other groups ($p<0.0001$). After controlling for age, sex and IQ, the difference between the ASD group (59%) and the controls (63%) was no longer statistically significant ($p=0.08$), whereas the OCD group (68%) performed significantly better than controls ($p<0.001$). Children with ASD showed the largest difference from other groups on easy items. Children with ASD and ADHD scored significantly lower than other groups on positive items. Greater severity of social communication impairment and hyperactivity on trait/symptom scales was associated with lower scores on the RMET, irrespective of diagnosis.
Conclusion: Social cognitive deficits exist in ASD as measured by the RMET, but are driven in part by IQ effects. Children with OCD may be hypersensitive to emotional stimuli. Results from trait/symptom scales support indistinct diagnostic boundaries across disorders.

VISUOSPATIAL PROCESSING AND PERCEPTUAL ORGANIZATION DEFICITS IN SCHIZOPHRENIA

Lead Author: Anahita Bassirnia, M.D.
Co-Author(s): Hamidreza Naghavi, M.D., Sanaz Vahid-Vahdat, M.D.

SUMMARY:

Background: Schizophrenia is associated with impaired visual information processing. This study investigated deficits in visual processing and perceptual organization in schizophrenia using visual illusions as a model of effect of context on main stimuli.
Methods: Overall, twenty patients with schizophrenia and twenty healthy volunteers enrolled in the study. Demographic data was collected and patients' symptoms were assessed with PANSS scale. Three different visual illusions were used to investigate different types of visual processing: Muller Lyer, Poggendorff, and White illusion. To investigate the effect of contextual stimuli and perceptual organization, the magnitude of all illusions were also measured in reduced contrasts of contextual parts of the illusion.
Results: There was no significant difference between patients with schizophrenia and control group in Muller Lyer and White illusion. However, patients had higher degree of illusion in Poggendorff illusion. When the contrast of contextual parts was reduced, all participants had lower degree of illusion but this improvement was stronger in control group. There was no correlation between patients' symptom profile and amount of visual illusion.
Discussion: Patients with schizophrenia showed higher degree of Poggendorff visual illusion, but not other forms of illusions. This difference might be a result of having more deficits in visuospacial abilities which is more required in Poggendorff illusion. When the contrast of contextual stimuli was reduced, control group performance was improved more than patients', which shows control group was influenced more by the contextual parts of the illusion. This may reflect deficit in perceptual organization in patients with schizophrenia.

BRIDGING NEUROSCIENCE AND PSYCHOLOGICAL INTERVENTIONS: THE PROGRESS AND POSSIBILITY OF AUGMENTED PSYCHOTHERAPY

Lead Author: Jordan Bawks, B.Sc.

SUMMARY:

Introduction: As the global disease burden of mental health disorders like depression and anxiety rise to alarming levels, the need for more efficient and effective treatments grow. Armed with the knowledge that effective psychotherapy is related to changes in brain morphology and functional connectivity (Roffman 2005)*, attempts have been made to facilitate these changes by using "priming" or "augmenting" pharmacological and somatic interventions before or during therapy sessions. This poster sets out to provide a qualitative topical review of the history of this approach, the current state of a few well-researched augmenting agents and to highlight a few agents with high potential.
Method: A PubMed and PsycINFO search was conducted using the terms "Augmented Psychotherapy" and "Medication-assisted Psychotherapy" as well as "Psychotherapy" AND "d-Cycloserine"/"Oxytocin"/"tDCS"/"ECT"/"rTMS".

Results were hand-searched and assessed for suitability, which was qualified as being a clinical or theoretical evaluation of psychotherapy combined with an augmenting agent.
Results**: As an augmenting agent d-Cyclosporine (DCS) has been the most researched in the last 10 years with good results for exposure-based therapies (>50 studies). Oxytocin has garnered attention due to non-clinical studies of its effects (>50) but has mixed results in limited clinical trials (~5). The somatic interventions Electroconvulsive Therapy (ECT), transcranial Direct Current Stimulation (tDCS) and repetitive Transcranial Magnetic Stimulation (rTMS) show great promise based on their mechanisms of action but few clinical "augmentation" studies exist (<5).
Conclusions: Augmenting psychotherapy with pharmacological agents has interested psychiatrists since as early as the 1950s (Dyck 2005). Modern agents have been chosen on the basis of their known mechanism of action, established primarily through animal and non-clinical studies, and the underlying pathophysiology of the applicable psychiatric disorder. D-Cycloserine, a selective partial agonist of the NMDA receptor, has been used to aid extinction learning (Davis 2006), and a recent meta-analysis showed good evidence for augmenting various exposure therapies for anxiety with DCS (Rodrigues 2014). Oxytocin shows promise based on its broad pro-social and anxiolytic profile for facilitating therapeutic alliance and trust but early clinical studies have found mixed results (MacDonald 2013). The somatic intervention agents ECT, rTMS and tDCS are effective monotherapies in their own right and have evidence of inducing neuroplasticity in the human brain, and thus should be useful for the rewiring process that we know occurs in psychotherapy (Fenton 2014). Altogether, Augmented Psychotherapy appears to be experiencing a resurgence of interest and there is no shortage of exciting directions for future research and clinical progress.
*Please contact the author at jordan.bawks@mail.utoronto.ca for references
**As of Sept.2014.

IMPLEMENTATION OF AN AMBULATORY ALCOHOL DETOXIFICATION PROTOCOL

Lead Author: Benjamin Williamson, M.A., M.D.
Co-Author(s): Usha Kilaru, M.D., Mark Loszewski, N.P., Bella Schanzer, M.D., Benjamin Williamson, M.D.

SUMMARY:
Objective: Concern for negative consequences from alcohol withdrawal and perceived lack of acceptable alternatives resulted in high numbers of inpatient admissions for alcohol detoxification at a mid-size urban Veterans Affairs Medical Center. Hospitalization for alcohol detoxification is costly and reduces bed availability for individuals requiring acute inpatient services. Ambulatory alcohol detoxification represents a safe and cost-effective alternative. This study seeks to present the two-year Detroit VAMC experience with ambulatory alcohol detoxification in support of recent literature demonstrating safe and effective strategies for ambulatory alcohol detoxification.
Methods: A literature review was completed to determine the safety of ambulatory alcohol detoxification. An ambulatory alcohol detoxification protocol was initiated April 2012 and data was collected through July 2014. Monthly and annual admissions for uncomplicated alcohol, drug abuse or dependence (DRG-897) were reviewed before and after program implementation. For the ambulatory detoxification program, analyzed measures included: enrollment, completion, readmissions, adverse events, referral for hospital admission, and participation in another VA recovery program. Costs for inpatient and ambulatory alcohol detoxification were calculated using the Veteran Health Administration RAMP system.
Results: Average monthly inpatient admissions for alcohol detoxification prior to initiation of the Ambulatory Alcohol Detoxification Protocol was 36.4 compared to 25.2 after program implementation. This translates into a decline of 140 admissions, or 32%, for DRG-897. Participation in the program averaged 6.7 veterans per month, with a completion rate of 56%. Of the 187 total veterans enrolled, readmission for subsequent detoxification was 18.7% (35 veterans). There were two patient deaths unrelated to the protocol and no reported significant adverse events by patient report or chart review. Hospital admission for any cause was 7% (13 patients) within 30 days of starting ambulatory detoxification and 10% (18 patients) within 90 days. Co-enrollment in

another alcohol recovery program was 59%. Approximate cost savings using ambulatory detoxification compared to inpatient admission was $8,712.78 dollars/patient.
Conclusions: For veterans meeting specific inclusion criteria, ambulatory alcohol detoxification appears to be a safe and effective alternative to inpatient hospitalization. The literature, as well as the JDDVAMC experience, supports the use of ambulatory alcohol detoxification in the outpatient setting. The number of inpatient hospitalizations was significantly decreased after implementation of an ambulatory alcohol detoxification protocol. This decrease in inpatient hospitalizations translates into significant savings for the VA system.

PREFERENCES AND EXPERIENCES WITH DEPRESSION CARE AMONG OLDER LATINO ADULTS IN A GERIATRIC MEDICINE CLINIC: A QUALITATIVE ANALYSIS

Lead Author: David Camacho, M.S., M.S.W.

SUMMARY
Objective:
To explore mental health treatment preferences, experiences, and factors impacting depression and depression care of older Latinos with multiple medical co-morbidities in a public sector geriatric clinic.
Background:
Depression affects at least 5-10% of older primary care patients and negatively impacts quality of life. Amongst immigrant and non-assimilated Latinos depression rates are high and treatment rates are low. Relatively little is known about the preferences that depressed older Latino patients have for medication and structured psychotherapies, or about their personal experiences with depression and depression care. Understanding their preferences and experiences may help tailor depression interventions for their needs.
Methods:
Primary care providers at a geriatric clinic referred patients with elevated Geriatric Depression Scale (GDS) scores. Subjects were included if they screened positive for depression on the Patient Health Questionnaire-9 (PHQ-9) and were excluded if they had significant cognitive impairment according to Mini-Mental Status Exam, psychosis, bipolar disorder, or acute suicidal intent. Bicultural social workers provided psychoeducation and offered brief Problem Solving Treatment (PST) and/or support for antidepressant medication. At 6 month follow up, subjects completed qualitative and quantitative interviews.
Results:
Twenty subjects participated in qualitative interviews. Mean age was 71, 19% were men, 100% were Latino, and most were low income; their mean number of chronic medical conditions was 4.6. Subjects reported strong preferences for psychotherapy over medication and preferred bicultural therapists over psychiatrists. Barriers to care, role of culture, coping strategies, and family role were also explored.
Conclusion:
Older Latinos' preferences for depression care may differ from currently available and offered treatments. Designing feasible interventions that honor their preferences and experiences may improve their participation in care and treatment outcomes.

PERSPECTIVES ON PLACENTOPHAGY AMONGST FEMALE PATIENTS IN URBAN CARE CENTERS

Lead Author: Danielle Cuthbert
Co-Author(s): Kara Brown, M.D., Stephanie Schuette, B.A., Cynthia Coyle, Ph.D., Katherine L. Wisner, M.D., Crystal T. Clark, M.D.

SUMMARY:
Human placentophagy, the consumption of the placenta postpartum, first arose in Western culture in the 1970's as part of the natural birth movement, and has recently been popularized by celebrities in the media. Advocates for placentophagy believe that ingesting the placenta provides hormones, chemical elements, and endogenous opioids that alleviate postpartum complications including depression, lactation problems, iron deficiency, and pain (Beacock, 2012, Selander et al., 2013).
Although there is evidence of benefits of placentophagy in animals at parturition, the effects in humans are unknown. Women are choosing placentophagy and reporting multiple benefits despite the lack of empirical evidence of therapeutic efficacy. More research is needed to understand the motivations, attitudes, and experiences of placentophagy. Our study aims to assess: (1) the awareness of placentophagy

among patients locally, (2) perceptions, attitudes and beliefs toward placentophagy among patients, (3) whether health care providers and patients engage in conversations about placentophagy, (4) differences in perceptions and attitudes among traditional and alternative health care providers and health care providers and patients (5) who is choosing placentophagy and (6) methods of the current practice.
The study consists of a non-blinded cross-sectional survey that will be distributed to patients during fall 2014 at clinics affiliated with Northwestern Medicine, a large tertiary-care center in downtown Chicago. Patients are eligible for participation if: female, over age 18, and capable of giving informed consent. Estimated time to complete the survey is five to seven minutes. The target number of participants to be enrolled is 200. Descriptive analysis will be used to describe the collected data, and frequency tables will be used to analyze demographic information. We anticipate that the majority of patients surveyed will have heard of placentophagy, but will not know details regarding the benefits and risks.
1. Beacock, M. (2012). Does eating placenta offer postpartum health benefits? British Journal of Midwifery, 20(7), pp. 464-469.
2. Selander, J., Cantor, A., Young, S.M., Benyshek, D.C. (2013). Human maternal placentophagy: A survey of self-reported motivations and experiences associated with placenta consumption. Ecology of Food and Nutrition, 52(2), pp. 93-115.

A CASE STUDY : ASSESSING SAFETY OF ELECTROCONVULSIVE THERAPY IN THE PRESENCE OF INTRATHECAL PUMP

Lead Author: Toral N. Desai, M.B.B.S.

SUMMARY:

Background:
Electroconvulsive Therapy (ECT) is commonly used to treat Major Depressive Disorder especially in refractory patients. Many patients with Major Depressive Disorder also have a chronic pain disorder, some of which are being treated with intrathecal therapy via implanted devices and the data on safety of such devices during ECT is non-existent. According to the manufacturing company, Induced electrical currents during Electroconvulsive Therapy (ECT) may cause heating of the pump, resulting in overinfusion and serious injury or death. This study is assesses safety of implanted infusion system during Electroconvulsive Therapy and monitoring effectiveness of ECT on pain and mood symptoms.
Methods:
A patient with history of severe Major Depressive Disorder and Chronic pain refractory to intrathecal pump narcotics went through series of Electroconvulsive therapies. Prior to the first ECT, the pump's fentanyl was replaced with saline to decrease the risk of overinfusion. Pain management team was involved for pump setting interrogation pre and post ECT. The patient's pain and mood symptoms were evaluated over entire ECT course.
Results:
The patient was successfully treated with ECT in the presence of the intrathecal pump device filled with saline and fentanyl on separate occasions. No complications such as overinfusion, heating of the pump, pump failure, serious injury or death occurred. Significant improvement in pain and mood symptoms were noted.
Discussion:
In the absence of any existing data on safety of Electroconvulsive Therapy in patients with installed intrathecal pump devices, this study offers a light on safety of conducing ECT in presence of such pumps. While this device comes with warnings on potential complications, this particular case suggests that the presence of an intrathecal pump does not necessarily represent an absolute contraindication to ECT. Further data is encouraged in order to establish safe practice guidelines.
Conclusion:
Electroconvulsive Therapy may be successfully conducted in patients with installed intrathecal pumps.
References:
1. Tamara J. Dolenc, Roxann D. Barnes, David L. Hayes and Keith G. Rasmussen Electroconvulsive Therapy in Patients with Cardiac Pacemakers and Implantable Cardioverter Defibrillators 24 Sep 2004 DOI: 10.1111/j.1540-8159.2004.00617.x
2. Gahr, Maximilian MD; Connemann, Bernhard J. MD; Freudenmann, Roland W. MD; SchÃ¶nfeldt-Lecuona, Carlos MD Safety of Electroconvulsive Therapy in the Presence of Cranial Metallic Objects Journal of ECT: March

2014 - Volume 30 - Issue 1 - p 62-68 doi: 10.1097/YCT.0b013e318295e30f
3. Medtronic Synchromed II infusion system patient manual

EFFECTS OF OLFACTORY STIMULATION WITH SCENTS COMMONLY USED IN AROMATHERAPY ON BRAIN WAVE ACTIVITY

Lead Author: Ann Etim, M.D.
Co-Author(s): R. Gregory Lande, D.O., Cynthia T. Gragnani, Ph.D, Anne-Marie Deutsch, Ph.D, Miriam Pourzand, MSN, PMHNP-BC, Carolyn Curcio, CTRC

SUMMARY:

Purpose
The purpose of this study is to identify changes, if any, brain wave activity in relation to olfactory interventions commonly used in Aromatherapy in active duty service members in Psychiatric Continuity Service (PCS) programs at Walter Reed National Military Medical Center.
Research Design
The investigators will pursue an observational, prospective, blinded and randomized pilot study. We are pursuing a pilot study in order to obtain sufficient data on mean change to perform a power analysis for sample size in future studies. We propose recruiting at least 30 subjects to obtain at least 20 completers.
Methodology /Technical Approach
This study will collect data from properly consented and subsequently enrolled adult subjects in the Walter Reed Psychiatric Continuity Service (PCS). All prospective subjects will be active duty service members recruited during the WRNMMC PCS intake process.
Objectives And Specific Aims
Our working hypothesis is that specific aromas from essential oils produce measurable changes in brain wave activity. Preliminary data completed on staff volunteers in our clinic suggests that there is a measurable response to different scents using the study equipment. The investigators wish to conduct a formal pilot study to further explore these findings, and determine which, if any, changes occur and finally to determine if specific aromas produce specific reproducible changes in certain brainwave frequencies.
Our secondary objective is to look at correlations between our findings and the presence of mood disorders, anxiety or Post-Traumatic Stress Disorder (PTSD) in our subjects. We also aim to provide a user-friendly tool for patients. To this end, we will be using equipment and methods that can easily be replicated by patients in their homes.
The investigators also propose exploring additional outcome measures to include:

1) Examining correlations between the subject's baseline mood state, as measured by the Zung Anxiety and Depression scales, and its impact on the subject's brain wave activity. We hypothesize that people who are more anxious would be less able to concentrate. Individuals with high anxiety or depression would be more likely to respond to the olfactory stimuli.
2) Examining correlations between the changes in brain wave activity and PTSD, as measured by the PTSD Checklist, Military Version (PCL-M). Individuals with PTSD commonly experience increased sensitivity to environmental stimuli, including smell, which may be triggers. We hypothesize that aromatherapy may have less of an anxiolytic effect on these individuals.
3) Examining correlations between an individual's preconception of what effect a scent will have (calming, arousing) and the measured brain wave activity. We hypothesize the subject's expectation of what a specific scent will do will affect that subject's measurable response.

METHYLPHENIDATE IN ATTENTION DEFICIT DISORDER WITH HYPERACTIVITY (ADHD): INDISCRIMINATE USE AND ADVERSE EFFECTS

Lead Author: Fernanda M. Faria
Co-Author(s): Souza, D. F.; Silva, F. A. B.; Thomazatti, F. G.; Alves, L. F. C.; Cavalli, M. A. P.; Loureno, T. T. G. M. V.

SUMMARY:

Objective: To evaluate pharmacologic approach focused on the use of Methylphenidate in patients diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) and to evaluate the indiscriminate use of this amphetamine in that psychiatric disorder. Method: A systematic review of articles selected from Capes database was performed using the keys: methylphenidate, ADHD. The filters considered

were: studies in humans, in the last five years, all idioms. Results: According to the United Nations (UN), the methylphenidate is, currently, the most consumed psycho-stimulant drug. The widespread consumption in the last decades could be associated with the increased diagnostic of ADHD. The augment in Methylphenidate`s use is possibly related to changes in diagnostic criteria which lead to an enlargement of the population affected by the disorder. Consequently, the number of potential users rose. The main problem associated with the indiscriminate use of methylphenidate is its side effects, such as addiction and abuse. In addition, according to the Multimodal Treatment Study, one of the most important reports on the therapeutic of ADHD, there is a potential risk of height growth impairment. Two articles reviewed, also point out the cardiovascular risks associated with the use of methylphenidate. There are, however, controversies among the studies on the side effects of methylphenidate. Conclusion: The association of methylphenidate`s use with the broadening of the diagnosis of ADHD probably justifies the increase observed in psycho-stimulants consumption. Concerning the relationship of indiscriminate use and the medication side effects, there is enough disagreement in the published works, including about the type and frequency of the effects, that more large studies are necessary.

RISPERIDONE LONG-ACTING INJECTION VS. ORAL RISPERIDONE: A SECONDARY ANALYSIS OF RELAPSE AND REHOSPITALIZATION CONTROLLING FOR SWITCHING IN A PRAGMATIC

Lead Author: Srinath Gopinath, M.D.
Co-Author(s): Nina R. Schooler, Ph.D., Jeremy Weedon, Ph.D, Peter F. Buckley, M.D., Donald C. Goff, M.D., John Hsiao, M.D., Alexander Kopelowicz, M.D., John Lauriello, M.D., Theo Manschreck, M.D., M.P.H., Alan Mendelowitz, M.D., Del D. Miller, Pharm. D., M.D., Joanne B. Severe, M.S., Daniel R. Wilson, M.D., Ph.D., Donna Ames, M.D., Juan Bustillo, M.D.,Jim Mintz Ph.D., John M. Kane, M.D. for the PROACTIVE Study

SUMMARY:

Background:
The PROACTIVE study found no significant differences in relapse or rehospitalization between long-acting injectable risperidone (LAI-R) and oral second-generation antipsychotics (SGA), consistent with other studies. Some participants were already receiving oral risperidone (Oral-RIS) and therefore only changed route of administration in the course of randomization. Study of this subset of participants who entered the trial receiving Oral-RIS allows examination of whether relapse and rehospitalization differ between the two routes of administration (oral vs. LAI) in those for whom there was no change of antipsychotic medication. Such analysis is a more precise test of the hypothesis that LAI administration reduces risk of relapse and/or rehospitalization. Examination of this subset of the PROACTIVE study cohort also eliminates variance in outcome due to changing antipsychotic medication, which other reports have associated with poorer outcomes.
Methods:
305 subjects at 8 academic centers were randomly assigned to LAI-R or oral SGA's with open treatment for up to 30 months following randomization; 105 were receiving Oral-RIS. All subjects had confirmed diagnoses of schizophrenia or schizoaffective disorder, were between 18 and 65 years old, were living in the community for at least 4 weeks but had been hospitalized within past 12 months and were rated at least moderately ill (CGI >4). A blinded Relapse Monitoring Board determined if relapse and/or hospitalization for symptom exacerbation had occurred. Within the Oral-RIS cohort (n= 105), the same characteristics of 56 subjects randomly assigned to LAI-R were compared to 49 randomized to continuing. Cox regression analysis ascertained time to first relapse (defined by visit number 1-66) and time to first hospitalization in the risperidone cohort, covarying for time since last hospitalization and the global rating on the Scale of Functioning.
Results:
Comparison of Oral-RIS to Others: Significant differences were seen in the proportion of subjects receiving Oral-RIS by site ($p = 0.003$). The Oral-RIS cohort were younger at first hospitalization ($p =0.015$), had higher SANS Affective Flattening ($p=0.037$) and Asociality/Anhedonia ($p=0.005$).
Comparison within Risperidone cohort LAI-R to Oral: The only significant difference at baseline

was that LAI-R subjects had poorer global Scale of Functioning than oral subjects (p=0.020).
Discussion:
There were no significant differences between LAI-R and oral-RIS in time to relapse or rehospitalization.
The most interesting findings is that the percentage of patients receiving Oral-RIS at the eight sites varied significantly from 21% to 57%. None of the differences between LAI-R and Oral RIS were reflected in treatment group differences within the Oral-RIS cohort. Survival analyses findings of this subset are consistent with the findings for the full cohort â€“ no significant differences in time to relapse or hospitalization in a 30-month trial.

P450 ENZYMES: HOW DO THEY WORK?

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

SUMMARY:

P450 enzymes are well established as key players in pharmacodynamics. As modern psychopharmacology continues to proceed at a rapid pace, understanding pharmacodynamics and drug metabolism is a necessary prerequisite for today's well prepared psychopharmacologist. While a great deal of mystery remains regarding the mechanism of P450 drug metabolism, key steps in P450 enzyme interactions continue to be elucidated using modern approaches in the fields of physical chemistry, biochemistry, and bioinorganic chemistry. This study presents original evidence obtained using X-ray absorption fluorescence spectroscopy, laser photooxidation, and UV-visible spectroscopy that identifies reaction intermediates in the P450 enzyme reaction cycle that had never previously been identified in an innate P450 enzyme. It is believed that further evidence in P450 chemistry will improve the understanding of P450 enzymes important role in pharmacodynamics.

GENDER DIFFERENCES IN THE IMPORTANCE OF CALORIC INFORMATION IN SELF-PERCEIVED HUNGER AWARENESS AND ITS EFFECT ON FOOD QUANTITY SELECTION

Lead Author: Robert Humberstone, B.Sc.
Co-Author(s): Robert Karch, M.D., M.P.H., FAAP

SUMMARY:

America is facing an increasing rate of weight gain in its population and therefore research in the topic of hunger awareness and food selection is critical. This study investigated hunger awareness using a 100-mm visual analog scale (VAS) either before a participant makes a food selection or after. The goal of this study was to explore the value of an individual reflecting on their self-perceived hunger before making a food selection to determine if that reflection leads to a more accurate food caloric choice. Additional metrics were measured by a questionnaire. Participants were randomly provided a packet consisting of one of two interventions, VAS/Food selection or Food Selection/VAS, both followed by a questionnaire. Participants were instructed to identify their hunger on the visual analog scale page. Participants were also instructed to select the amount of Dunkin Donut glazed donut holes, from 0 to 7, on the food selection page they wanted.
A total sample size of 277 surveys was collected at the University of Central Florida. 140 of the collected surveys were the VAS/Food selection intervention while 137 were the Food Selection/VAS intervention. The study sample population had a total of 122 males (44.04%) and 155 females (55.96%). It was observed within the study's data that there are inherent differences in the food selection process between males and females with the importance of caloric information having a statistically significant variation between males and females in the aggregate sample population. While other metrics were also observed to have a significant variation between males and females, the median and interquartile range of Males (3 (0-6)) and Females 5 (1-7) in the Importance of Caloric Information suggests that caloric information may have greatest difference. While not originally the primary focus of this study, further data analysis of this study's data into possible differences between males and females in relation to the importance of caloric information in the food selection process is supported.

BORDERLINE PERSONALITY DISORDER AND IMAGING: A BRIEF CRITICAL REVIEW

Lead Author: Isa Jette-Cote, M.D.
Co-Author(s): Joel Paris, M.D., Marco Leyton, Ph.D.

SUMMARY:

Borderline personality disorder (BPD) is a severe disorder associated with a wide range of symptoms. Here, we review the rapidly growing neuroimaging literature investigating potential structural and functional changes. Overall, surprisingly few findings have been well replicated, including those with strong a prior plausibility. In part, this might reflect a number of methodological problems, including small and unrepresentative samples, the absence of standardized procedures for diagnosis and neuroimaging methods, and the likelihood of publication bias.

PRAZOSIN IN THE TREATMENT OF NIGHTMARES IN PTSD: SYSTEMATIC REVIEW AND META ANALYSIS

Lead Author: Davit Khachatryan, M.D., M.H.S.
Co-Author(s): Christian Schuetz MD PHD

SUMMARY:

Nightmares associated with PTSD are difficult to treat. We performed a systematic review and meta analysis to evaluate the evidence for the use of prazosin in the treatment of nightmares. A comprehensive search was performed using the databases EMBASE, Ovid MEDLINE, PubMed, Scopus, Web of Science, and Cochrane Database of Systematic Reviews, from their inception to October 20, 2014, using keywords prazosin and nightmares/PTSD or associated terms.
Results will be discussed in this poster.

YOGA AND MINDFULNESS FOR SMOKING CESSATION: CURRENT EVIDENCE AND FUTURE DIRECTIONS

Lead Author: Surbhi Khanna, M.B.B.S.
Co-Author(s): Vishal Madaan, M.D., F.A.P.A

SUMMARY:

Learning objectives: 1.To understand current evidence supporting the role of yoga and mindfulness for smoking cessation. 2.To discuss how yoga and mindfulness may help sustain relapse prevention in patients with nicotine dependence.
Introduction: Cigarette smoking is the leading preventable cause of death in the United States accounting for 1 in every 5 deaths per year. Currently, more than 16 million Americans suffer from a disease related to smoking and about 18.1% of the adult U.S population continues to smoke. Despite the availability of several pharmacotherapeutic and psychosocial strategies, efficacious smoking cessation programs struggle with high relapse rates. Yoga and mindfulness may create better acceptance and awareness of cravings and when effectively used, may reduce relapse rates. This poster reviews the basic mechanisms, current clinical evidence, practical applications and future directions for research in the field of yoga and mindfulness based practices for smoking cessation.
Methods: A review of the available literature on the impact of yoga and mindfulness on smoking cessation was conducted using PubMed. A specific focus will be on understanding factors that sustain relapse prevention, and how integrative care holistic models may assist the process.
Results: While strategies such as nicotine replacement, bupropion and varenicline have been widely utilized for nicotine dependence, only about 5%-20% people remain abstinent 6 months after a cessation attempt. Stress appears to be the most common cause for relapse, and practicing certain yoga or mindfulness techniques may enhance emotional regulation, help refocus and develop alternative strategies. Yoga (union) consists of principles for living a meaningful and purposeful life while mindfulness intends to sensitize the innate human capacity to inhabit the present moment fully, and living the full range of one's experience. Research suggests that mindfulness-based interventions may result in a significantly reduced consumption of alcohol, tobacco, and opiates compared to waitlist controls. In addition, specific neuroimaging findings suggest that mindfulness may lead to changes in brain structure may be associated with reduced mental ruminations, and therefore, with a reduced likelihood of relapse. A proposed model, which may be practically used in clinical settings to teach smokers self-regulation of emotions and cravings as they arise is also presented. Long-term studies using Iyengar yoga for sustained smoking cessation are currently underway.
Conclusions: Yoga and mindfulness may aid in breaking the cycle of negative emotions by creating awareness of cravings for nicotine use. A more widespread acceptance of the techniques may supplement the use of currently existing pharmacological and psychosocial interventions. Research is limited by small

sample size, and there is an urgent need for larger clinical trials that assess long term relapse rates, especially beyond 1 year.

ASSOCIATION BETWEEN LABORATORY TESTS AND THE SEVERITY OF COGNITIVE IMPAIRMENTS IN PATIENTS WITH DEMENTIA

Lead Author: Hwi gon Kim, M.D.
Co-Author(s): Hwi gon Kim, M.D., Jae Hyeok Chang, M.D., Jang won Cho, M.D., Dae young Oh, M.D., Ph.D., Eun young Jang, Dae ho Kim, M.D., Ph.D., Joon ho Choi, M.D., Ph.D., Yong chon Park, M.D., Ph.D.

SUMMARY:

Introduction: Dementia is characterized by the development of multiple cognitive deficits that include memory impairment, aphasia, apraxia, agnosia or impaired executive functioning.
Medical illnesses including metabolic syndrome, level of anti-oxidants and hormone imbalance have increasingly been linked to the pathogenesis of dementia in the elderly people1-3. In addition, many studies suggest that identification of modifiable risk factors influences the development of dementia4. In the present study, we examined the association between medical conditions and the severity of cognitive impairments in patients with dementia
Methods: The current study was conducted on 107 patients who were diagnosed with the Alzheimer's disease (AD). AD was defined according to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) diagnostic criteria and the criteria of the National Institute of Neurological and Communicative Disorders and Stroke and the Alzheimer's Disease and Related Disorders Association (NINCDS- ADRDA). For neuropsychological assessment and medical condition, the Korean version of the Consortium to Establish a Registry for Alzheimer's Disease Assessment Packet (CERAD-K) and laboratory tests were respectively administered.
Results: Significant gender differences were found only in year of education (t=4.25, p=0.001). Specifically, male participants were more educated than their counterparts. Additionally, the association between gender and abnormality in cholesterol, uric acid, and TSH were tested and no significant gender effect was found (Ï‡2s<2.25, ps>0.13). As it can be seen, after age, gender, and education effect adjusted, higher score in J6 (word list delayed recall) was associated with normality in total serum cholesterol level (OR=0.23, p=0.002). Higher score in J3 (MMSE-KC) was associated with normality in total serum uric acid (OR=0.82, p=0.015) and higher score in J4 (word list immediate recall) was associated with normality in TSH (OR=0.78, p=0.039). Even after GSD score was adjusted additionally, those were remained significant.
Conclusion: Higher level of total serum cholesterol (hypercholesterolemia), uric acid (hyperuricemia) and thyroid-stimulating hormone (subclinical hypothyroidism) were associated with poorer cognitive functions compared to the normal range of the laboratory tests. Findings suggest that hyperuricemia is associated with more developed cognitive impairment. Also these results suggest that verbal memory may be impaired more severely in the patient with hypercholesterolemia or subclinical hypothyroidism.

THE PREVALENCE OF IMPULSIVITY AND SUBSTANCE USE AMONG A COMMUNITY SAMPLE OF PSYCHIATRIC INPATIENTS DIAGNOSED WITH BIPOLAR DISORDER

Lead Author: Micah Knobles, M.D.
Co-Author(s): Anastasia Pemberton, Mildred Aller, Melissa Allen, D.O., Teresa Pigott, M.D.

SUMMARY:

BACKGROUND: Bipolar disorder (BD) is frequently complicated by substance use disorder (SUD) and this co-occurrence has been associated with an earlier age of onset, poorer treatment outcome, and an increased risk of suicide. The causes of this highly prevalent comorbidity remain unknown, but both BD and SUDs have been linked to high trait impulsivity. With these issues in mind, the present study was designed to examine the prevalence of SUDs in hospitalized BD patients and to also investigate whether a measure of impulsivity might help to differentiate between BD patients with comorbid SUD versus those without comorbid SUD.
METHODS: Substance Use and Impulsivity was assessed in eighty-seven inpatients meeting DSM-IV criteria for a primary diagnosis of BD I, II, or Not Otherwise Specified using the National Institute on Drug Abuse (NIDA) Modified ASSIST-2 and The Barratt Impulsiveness Scale

(BIS-11). The NIDA-Modified ASSIST was adapted from the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST), developed, validated, and published by the World Health Organization (WHO) as an effective screening tool for identifying substance use. It also generates a substance involvement score that suggests the relative risk for each substance endorsed. The BIS-11 is the most widely used assessment of impulsiveness and is a self-report instrument that measures trait impulsivity in three domains: non-planning, attentional and motor. Results from urine drug screens (UDS) completed at admission were also examined and included in the analysis.
RESULTS: A UDS was collected at admission on 69 of the BD patients; 41% (28) were positive including 14 (50%) for cannabis and 11 (39%) for cocaine. Seventy five of the BD patients completed the NIDA; 44% (33) were positive for at least one substance. The most common abused substances were cannabis (27/33) followed by cocaine (20/33), and sedative-hypnotics (13/33). Cannabis was also associated with the highest substance involvement scores with 26 of the 27 BD patients scoring at least moderate risk, whereas 6 of the 20 BD patients using cocaine were considered to be at a lower risk. Preliminary results revealed that the BD patients had elevated total mean scores on the BIS-11 (N=87, mean + SEM, 74.7+1.1) in comparison to scores previously reported in control populations. A total score >72 is generally considered to indicate that an individual as highly impulsive. While BIS-11 total scores were elevated for Bipolar patients with SUD (N=47, mean + SEM, 74.9+1.8) as well as for BD patients without SUD (N=40, mean + SEM, 74.5+1.8), they did not differentiate between the two groups.
CONCLUSION: Almost half of inpatients meeting criteria for BD had a co-existing SUD as determined by UDS results (41%) or by the NIDA screen (44%). The BD patients with or without a comorbid SUD also had elevated impulsivity scores as measured by the total BIS-11 scores.

DEPRESSION AND HISTORY OF ABUSE AND/OR NEGLECT AMONG A SAMPLE OF HOMELESS OLDER ADULTS IN OAKLAND, CA

Lead Author: Chuan Mei Lee, M.D.
Co-Author(s): Christina Mangurian, MD, Margot Kushel, MD

SUMMARY:

OBJECTIVE: To determine whether a history of childhood abuse and/or neglect is associated with depression among a population of homeless older adults.
METHODS: Homeless adults (age â‰¥50) were recruited from shelters, free and low-cost meal programs, recycling center, and homeless encampments in Oakland, CA using population-based sampling techniques. Histories of childhood abuse and/or neglect were gathered from self-report. Participants completed the CES-D questionnaire as a measure of depression. The association between childhood abuse/neglect and adult depression was examined with logistic regression, controlling for age, sex, race, and education.
RESULTS: Among this sample of 350 homeless older adults, 61.1% (N=214) self-reported some form of abuse and/or neglect. Among the total sample, 10.9% (N=38) reported childhood neglect, 49.1% (N=172) reported childhood verbal abuse, 33.1% (N=116) reported childhood physical abuse, and 13.1% (N=46) reported childhood sexual abuse. 53.7% (N=188) had a CES-D score â‰¥16, indicating presence of depressive symptomatology. In a preliminary logistic regression model, a childhood history of abuse and/or neglect was highly associated depression (AOR=2.46, 95% CI, 1.55-3.89).
CONCLUSIONS: This study adds to the growing literature that childhood adverse experiences are potent risk factors for adult mental health outcomes. Information about childhood trauma history should be collected from clinicians-it appears especially among this vulnerable, older homeless population-to help inform psychiatric diagnostic evaluations.

EXAMINING THE IMPACT OF DEPRESSION AND ANXIETY ON ACUTE MEDICAL ILLNESS

Lead Author: Marc S. Lener, M.D.
Co-Author(s): Michael Chary, PhD., Akhil Shenoy, M.D., Dan Iosifescu, M.D., M.S.

SUMMARY:

Background: Electronic health records (EHR) are an increasingly fertile source of clinical data.

Natural Language Processing (NLP), also called computational linguistics, refers to a group of techniques that use computers to extract information from text. Advances in NLP for the analysis of large data sets make it more feasible to analyze physician notes as recorded in EHR for clinical research. Studies have previously shown an association between psychiatric illnesses such as Major Depressive Disorder (MDD) and Anxiety Disorder and specific medical illnesses such as Diabetes Mellitus (DM) or Pain Disorders. Here we propose to perform a retrospective single- center case-control study analyzing EHR to determine distinguishing clinical characteristics of patients acutely hospitalized for DM or Pain Disorders who have comorbid MDD or Anxiety as compared with patients who are acutely hospitalized for the same medical illness without comorbid psychiatric illness. The goal of this study is to identify how comorbid MDD and Anxiety Disorder influence the clinical course of acute hospitalizations for medical illnesses such as DM or Pain Disorders.

Methods: Our study is a retrospective single-center case-control study. We would identify a cohort of patients for whom the general medical service consulted psychosomatic medicine. We have two levels of controls, (i) those on the general medical service without psychiatric consults who share the characteristics of those for whom a consult was made, and (ii) those on the general medical service without psychiatric consults who do not have the characteristics.

Hypothesis: As compared to those without psychiatric comorbidity, patients admitted for treatment of DM or Pain Disorders will demonstrate: 1) In their initial evaluation in the Emergency Department: a longer length of stay, greater amount of consulting services, and higher acuity of their medical condition, 2) In their admission to the Medical/Surgical/Neurological Floor: a longer length of workup, greater frequency of delays of workup, greater frequency of patient non-adherence to medical care, greater amount of consulting services, longer time to stabilization of acute medical problem, greater occurrence of medical conditions likely as a result of hospital stay (eg. Nosocomial infections, Atelectasis, etc.), greater time to determination of final disposition plan, and greater total length of stay, and 3) After discharge: shorter time to readmission for medical problems, and lower adherence to follow up.

Results and Conclusion: We anticipate that the results of this study will guide the development of interventions to reduce morbidity and mortality in these patients, which would be tested in prospective studies. Data analysis is currently being processed and is pending completion.

PERIPHERAL IMMUNE MARKERS AND THEIR ASSOCIATION WITH COGNITIVE AND STRUCTURAL NEUROIMAGING FINDINGS IN FIRST-EPISODE AND FAMILIAL HIGH RISK PATIENTS

Lead Author: Paulo L. Lizano, M.D., Ph.D.
Co-Author(s): Ian T. Mathew B.S., Neeraj Tandon B.S., Debra Montrose Ph.D., Jean Miewald M.S., Diana Mermon M.A., Jeffrey K. Yao Ph.D., Matcheri S. Keshavan M.D.

SUMMARY:

Background: Current research implicating inflammation as the underlying etiopathology for a subset of schizophrenia continues to grow, but studies are limited in evaluating whether inflammatory indices are altered in those at familial risk or early schizophrenia. Thus, I hypothesized that inflammatory cytokines and growth factors are elevated in familial high risk and first episode psychosis subjects, which correlates with changes in the medial temporal lobe structures and cognition.

Methods: Human growth factor panel (bFGF, VEGF, sFlt-1, BDNF and PlGF) and human proinflammatory cytokine 9-plex (GM-CSF, IFN-Î³,IL-1Î², IL-2, IL-6, IL-8, IL-10, IL-12p70, and TNF-Î±) were measured in plasma from individuals with familial high risk for schizophrenia (HR, age, 18 Â± 4 yrs, n=36), medication naÃ¯ve first-episode psychosis (FEP, age, 25 Â± 9 yrs, n=51), and demographically balanced healthy controls (HC, age, 25 Â± 6 yrs, n=43) using a multiplex immunoassay system with Meso Scale Discovery's multi-array technology. A battery of cognitive tests were applied to the three groups, as well as, voxel based morphometry from baseline 3-T T1-weighted MRI images. These measures were then submitted to group comparisons and Pearson correlations to determine significance.

Results: HR adolescents had significantly increased levels of IL-10, IL-1Î², VEGF, and sFlt-1 compared with healthy controls. FEP patients had significantly increased levels of IL-1Î² In the HR group, Pearson correlations performed

between these immune markers and medial temporal lobe structures demonstrate that increased levels of VEGF and sFlt-1 are significantly correlated with a reduction in the left parahippocampus and left entorhinal cortical volume. Also, increased VEGF is inversely correlated with right hippocampal volume in the HR group. In the FEP group, increased VEGF was inversely correlated with the right entorhinal cortical volume. Relationships between cytokines and growth factors with cognition in the HR and FEP groups will be examined.
Conclusions
Increased levels of pro-inflammatory cytokines and vaso-endothelial growth factors are consistent with the hypothesis of inflammation and altered microvascular circulation in schizophrenia and those at risk. The findings in our HR group suggest that genetic and environmental risk may mediate these alterations, thus tipping the balance towards inflammation resulting in cortical volume loss in the medial temporal lobe structures. Future studies will examine the value of inflammatory markers in predicting the development of psychosis, severity of illness, and likelihood of relapse.

THE IMPACT OF DELAYED TREATMENT-OVER-OBJECTION: QUANTIFYING THE DELAY IN OBTAINING A COURT-ORDERED PSYCHIATRIC TREATMENT

Lead Author: David A. Nissan, M.D.
Co-Author(s): Sam Boas, B.S., Julie Penzner, M.D.

SUMMARY:
INTRODUCTION: Throughout medicine, time to delivery of care is an important quality measure. In inpatient psychiatry, treatment refusal is a major contributor to delay, forcing a court order for treatment to proceed under all but emergent circumstances. Judicial review is held in mental hygiene legal court, which operates on a time table divorced from that of clinical medicine, leading to a delay in the delivery of treatment, and exposing an inherent tension between beneficence and autonomy. To our knowledge this delay and its effects have not been investigated adequately.
METHODS: We reviewed the records of patients taken to court for treatment over objection over a five year period and identified 219 patients. Of these, 165 were found to have no evidence of clinician delay (e.g. indecision) in their discharge summary, and delay in treatment was accounted for by patient refusal of medication and subsequent need to wait for court hearing prior to treatment.
RESULTS: On average, those who went to court for treatment over objection spent an average of 11.7 days in the hospital before court paperwork was filed, and an average of 13.3 days from time of admission to the rendering of a decision in court. Even when the cases with documented clinical delays were removed, the average number of days prior to filing paperwork was 10.4 days, with an average delay to court-ordered decision of 12.0 days. For both groups, about one quarter of their entire length of stay took place before a court decision (25.7% vs 23.7%), meaning that definitive treatment was not offered for the initial 25% of hospital days. Over a five year period these 219 patients spent nearly 3000 days in the hospital without receiving the recommended psychiatric treatment, at a cost of approximately $15 million.
CONCLUSION: Our current system distinguishes the decision to involuntarily hospitalize an individual (a medical decision) from the decision to deliver psychiatric treatment over their objection (a legal decision). Although this maximizes patient's autonomy, it comes at the expense of the psychiatric and physical health of the patient, with well-documented worsened prognosis and increased frequency of violent events in patients with greater duration of untreated illness. This system also represents a sub-optimal resource allocation, with almost a quarter of a patient's admission being in a waiting pattern while court papers are processed and a court date is secured. Decrease in delay to court hearing could reduce overall length of stay, increasing the availability of inpatient psychiatric beds to other patients, and increasing the likelihood of treatment for any individual patient in the least restrictive setting as quickly as possible. We argue that the balance of these ethical principles should be considered, and suggest alternative means for legal or medical review that could reduce the delay in treatment for these highly vulnerable individuals.

CHILD ABUSE AND ITS CONSEQUENCES IN ADULT LIFE AND

SOCIETY WITH CASE EXAMPLE OF DISSOCIATIVE IDENTITY DISORDER

Lead Author: Mrunal Parab, M.D.
Co-Author(s): Stan Ardoin, M.D.

SUMMARY:
Our goal is to highlight the comorbidities and the premorbidities associated with childhood trauma and its long-term effects on adult life and society. We are presenting a case of dissociative identity disorder to illustrate effects of the child abuse. Child abuse also has social and financial implications. It is not only related to psychiatric illnesses but also to physical illnesses. We have compiled individual study results suggesting increased prevalence of psychiatric illnesses in people with history of child abuse. More studies should be promoted to investigate the relationship between child abuse and range of psychiatric illnesses. The ultimate message is that controlling child abuse is one of the tertiary levels of prevention for many psychiatric and physical illnesses as well as criminal behavior.

CAN IMPULSIVENESS PREDICT TREATMENT RESPONSE WITH TOPIRAMATE IN COCAINE DEPENDENT INDIVIDUALS?

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

SUMMARY:
Introduction: Topiramate has been studied in the treatment of substance use disorders, including alcohol, nicotine and methamphetamines. It is used off-label in the treatment of disorders where impulsiveness is problematic. The present study sought to determine whether impulsiveness is a factor that could predict topiramate treatment response in individuals with cocaine dependence.
Methods: We enrolled 142 cocaine dependent adults in a 12-week, double blind, randomized, placebo controlled clinical trial. All participants completed the Barratt Impulsiveness Scale (BIS-11) at baseline. During weeks 1-6 after randomization, the dose of topiramate (or corresponding dose of placebo) was titrated from 50mg/day to 300mg/day or the participant's maximum tolerated dose (minimum 200mg/day). During weeks 6-12, the maximum achieved dose of topiramate or placebo was maintained. The primary outcome variable was the weekly difference from baseline in the proportion of cocaine nonuse days, with a secondary outcome variable of urinary cocaine-free weeks during weeks 6-12. In a post-hoc analysis, we examined the relationship between response to treatment with topiramate vs placebo and participants' BIS-11 scores.
Results: We evaluated the BIS-11 using the total score and the first and second order factors. In those individuals with total BIS score above the median, there was a difference in percentage of cocaine free days with topiramate vs placebo ($p=0.0236$, estimated mean difference of 11.19%), but not in those equal or below the median ($p=0.2816$). Within the first order factors, individuals with subscale scores above the median in self-control ($p=0.0104$) and perseverance ($p=0.0432$) had a difference in response to treatment with topiramate vs placebo; below the median scores in attention ($p=0.0110$) and cognitive complexity ($p=0.0361$) also had a difference in response to treatment with topiramate vs placebo. Among the second order subtracts, individuals with below median scores in attentional impulsiveness and motor impulsiveness were associated with a different response to treatment with topiramate vs placebo ($p=0.0118$ and $p=0.0226$, respectively), while no statistically significant difference was found based on non-planning impulsiveness score.
Conclusion: Our results indicate a clear association between high baseline overall impulsiveness and response to topiramate in the treatment of cocaine dependence. We found that individuals with poor perseverance and self-control (higher score in these subscales) had a better treatment response with topiramate. However, those with lower attention and poorer cognitive complexity did not fare as well with topiramate. The differences using the results of second-order subtraits were not as definitive and need further evaluation. This is the first study that suggests a possible endophenotype based on impulsiveness that can predict treatment response to topiramate. Future studies are needed to validate the results.

ASSESSMENT OF AUTOMATIC AND ATTENTION-MODULATED SENSORIMOTOR GATING IN ADHD

USING PREPULSE INHIBITION: PRELIMINARY FINDINGS

Lead Author: Swapnil Rath, M.D.
Co-Author(s): Albert B. Poje, Ph.D.

SUMMARY:
Background: Prepulse inhibition (PPI) is defined as the reduction in startle amplitude when the presentation of a low intensity stimulus (prepulse) precedes the presentation of a more intense startle-eliciting stimulus (probe). It is assessed in humans by EMG recording of the orbicularis oculi. PPI can access both automatic and attention modulated sensorimotor gating. Automatic sensorimotor gating is thought to reflect bottom-up processing whereas attention modulated sensorimotor gating may reflect top-down processing. Research has shown deficiencies in both types in psychiatric populations. Models of ADHD include hypotheses regarding both automatic and controlled attention deficits. The present study investigated these using a PPI model capable of assessing both forms simultaneously.
Methods: There were 8 total participants (1 excluded, 5 ADHD patients on stimulant treatment, 2 controls). The study design evaluated attention (e.g., attend vs ignore), prepulse type (e.g., continuous vs multiphasic), trial block (e.g., early and late) and group (e.g., control, ADHD). There were 30 response eliciting trials. GLM Repeated-Measures ANOVAs across groups were used to evaluate PPI production across groups.
Results: In the control group, continuous prepulses produced decreasing PPI across trial blocks. In contrast, multiphasic prepulses produced increasing PPI across trial blocks. In the ADHD group, to-be-attended continuous prepulses produced greater PPI then did the to-be-ignored continuous prepulses. In contrast, to-be-attended and to-be-ignored multiphasic prepulses produced similar levels of PPI.
Discussion: Attentional-modulation of PPI was seen with continuous prepulses only in the medicated ADHD group. Present results replicate prior work with control populations. Psychostimulant treatment appears to normalize attention in children with ADHD which is a significant finding. Prepulse type (continuous and multiphasic) appear to be important factors in PPI assessment and may inform us to controlled and automatic forms of attention processing. Drawback of the study was a small sample size, but we hope to replicate our findings on a larger sample in the future.

NEW PERSPECTIVES ON PARENTS' UNDERSTANDING OF ADVANCED CANCER IN THEIR CHILD

Lead Author: Rebecca Rodin, B.A., M.Sc.

SUMMARY:
Purpose: To assess the understanding of parents of children with advanced cancer for whom standard therapy has failed regarding their view of their child's prognosis and the treatment options that they consider.
Methods: The present study analyzes verbatim transcripts of clinician-family consultations recorded as part of a larger, in-depth, prospective, ethnographic study of parents, patients, and staff at a US and a UK pediatric oncology center. Fifty-seven transcripts from 27 cases of a child with less than 30% chance of cure, as determined by their physicians, were analyzed for this study.
Results: In 18 cases, at least one parent (11 US, 7 UK) clearly indicated that they knew their child would inevitably die. At the same time, in 16 (10 US, 6 UK) of these 18 cases, a parent also showed an interest in cancer-directed treatment options and/or expressed a belief that their child could possibly survive or be cured. There were no families in the US or UK who indicated unequivocally that their child would survive or be cured.
Conclusion: Parents of children with advanced cancer often hold multiple views, expressing both awareness of their child's impending death, and also a belief in survival or cure. These findings have important clinical implications, showing that parents' understanding of their child's condition is complex and cannot be simply dichotomized into acceptance or non-acceptance of the prognosis. The findings suggest that what is needed to help parents make wise decisions is not better communication of information, which we submit is already largely understood, but support for decision-making that acknowledges the complexity of parental goals and understanding.

INFLAMMATORY BIOMARKERS AND DEPRESSION:A SYSTEMATIC REVIEW WITH META-ANALYSIS

Lead Author: Evan Sheppy, B.Sc., M.Sc.
Co-Author(s): Noel Amaladoss, M.D.

SUMMARY:
Depression is classically attributed to hypoactivity of certain monoamine neurotransmitters, and most anti-depressants were developed based upon this theory. Unfortunately, up to a third of depressed patients derive little benefit from conventional pharmacotherapy, prompting the search for new frameworks on the pathogenesis of depression. The correlation of depression with chronic inflammatory conditions suggests that immune responses, particularly inflammation, may contribute to depression manifestation. We aim to systematically review current evidence correlating depression severity with inflammatory biomarkers. Secondly, we review the efficacy of immunomodulatory therapy as a treatment modality for depression.

GLYCINE REUPTAKE INHIBITORS IN THE TREATMENT OF NEGATIVE SYMPTOMS OF SCHIZOPHRENIA

Lead Author: Rejish K. Thomas, M.D.
Co-Author(s): Glen Baker, PhD, DSc., FCAHS, Serdar Dursun, PhD, MD, FRCPC, Kam Dhami, PhD, Pierre S. Chue, MD, FRCPC, FRCPsych

SUMMARY:
Negative symptoms persist in over one quarter of patients with schizophrenia and are detrimental to prognosis, functionality and quality of life. Currently, there are no adequate treatments for primary negative symptoms. However, enhancing N-methyl-D-aspartate receptor hypofunctioning with glycine reuptake inhibitors has garnered a lot of optimism as a potential new treatment. Trials of sarcosine-derivatives have yielded mixed results and potential severe side effects have halted progress to larger studies. Non- sarcosine derivatives such as bitopertin have proven to be less toxic and have shown success in phase II trials. Unfortunately, phase III trials of bitopertin to date have not met primary endpoints and a void in effective treatment options for negative symptoms persists. Further research to improve psychiatric study design, discover clinical biomarkers and build on early successes of other potential pharmacologic molecules is required.

Keywords: bitopertin, sarcosine, glycine reuptake inhibitors, schizophrenia

CRITICAL TIME INTERVENTION TO IMPROVE CONTINUITY OF CARE IN MEN WITH SERIOUS MENTAL ILLNESS RELEASED FROM PRISON

Lead Author: Jessica L. Whitfield, M.D., M.P.H.
Co-Author(s): Jeffrey Draine, P.h.D., Ezra Susser, M.D., Dr.P.H

SUMMARY:
Background: Community reintegration following release from prison is a challenging transition for most incarcerated individuals, but can be especially difficult for those with serious mental illness, who face markedly elevated risks for suicide, homelessness and joblessness in the year following release. Many current reentry planning programs typically fail to meet the needs of the majority of reentry populations and fall considerably short for those who require coordinated mental health care upon release. Critical Time Intervention, a 9-month case management program designed to navigate transitions from institution to community living for those with mental illness, targets many of the identified needs for incarcerated individuals with mental illness and stands as a promising model for reentry programming. This study is one of the first to test the efficacy of CTI in improving continuity of care outcomes in incarcerated individuals with serious mental illness and co-occurring substance abuse.
Methods: For this randomized field trial study, men with serious mental illness and co-occurring substance abuse were recruited from prisons in New Jersey from March 2006 to March 2011 and randomized to either the experimental condition (CTI) or the control condition (usual reentry services plus enhanced reentry planning). Participant demographic and interview data were collected one month prior to release and 1, 3, 6, and 9 months post-release. To assess continuity of care outcomes, the experimental and control groups were compared on measures from the Continuity of Care Schedule (CONNECT) at 9-months post-release. The primary outcome was an average score across 4 domains from CONNECT (Average Connect Score), with secondary outcomes as the 4 scores in each of these domains (Physician Knowledge, Case Manager/Therapist Knowledge, Practitioner

Support, Practitioner Flexibility). Both univariate and multivariate analyses were performed, with the covariates age, race, education, employment history, and marital status included in adjusted logistic regression models.
Results: Among 215 participants who completed baseline screening interviews, the mean age was 36.7 years and the majority of participants black (43.9%) or white (32.2%). One hundred and fourteen participants were retained at the 9-month interview and did not vary from the baseline cohort on treatment condition or any demographic variables. Logistic regression analysis demonstrated a positive trend between CTI condition and higher scores on CONNECT for all 5 CONNECT variables. Associations reached significant levels for Average CONNECT score and the Practitioner Support domain.
Conclusions: As one of the first studies to assess the effectiveness of CTI in incarcerated individuals with serious mental illness, this study demonstrated that CTI has a positive impact on continuity of care outcomes in this population. Further research for evaluating CTI in prison settings on a larger scale are needed.

SCHIZOAFFECTIVE DISORDER IS MORE SIMILAR TO MOOD DISORDERS THAN SCHIZOPHRENIA: EVIDENCE FROM COMPARISON OF NEUROCOGNITION AND SOCIAL COGNITION

Lead Author: Rong Xiao, M.D., Ph.D.
Co-Author(s): Roxanne L. Bartel, M.D., John S. Brekke, MSW, Ph.D.

SUMMARY:

Background: The relationship between schizoaffective disorder (SA) , schizophrenia (SZ) and Mood Disorders (MD) is not well understood. Evaluation of cognitive impairment in these disorders can help clarify how these disorders are related.
Methods: 47 participants with SZ, 94 with SA, and 39 with MD were evaluated by the MATRICS Consensus Cognitive Battery (MCCB), which assesses seven cognitive domains. MANCOVA and three Hotelling's T2 tests were used to compare cognition between SZ, SA and MD. A classification tree was conducted to determine the order of importance for all the significant predictors. Power analyses confirmed this study had adequate statistical power.
Results: First, participants with SZ had worse performance than those with SA and MD in speed of processing, working memory, visual learning, reasoning and problem solving, and social cognition. Second, there were no differences between participants with SZ, SA or MD in attention/vigilance or verbal memory. Third, age, years of education, and gender were significant covariates in the comparisons of cognitive function. Finally, social cognition was the most important variable to distinguish SZ from SA/MD.
Conclusions: SA is more similar to MD than SZ in terms of neurocognition and social cognition. These results suggest that patients with SA may be more precisely diagnosed with a MD, or in some cases with SZ. . This study also confirms that cognitive function is a good diagnostic dimension for severe mental illnesses (SMI), particularly SZ.
Key Words: neurocognition, social cognition, classification tree, severe mental illnesses, diagnosis

ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD) SYMPTOMS AND CRIMINAL OFFENSES AMONG REPEAT DUI OFFENDERS

Lead Author: Tauheed Zaman, M.D.
Co-Author(s): Sarah Nelson, Ph.D., Katerina Belkin, B.A., Debi LaPlante, Ph.D., Howard Shaffer, Ph.D.

SUMMARY:

Background: ADHD is associated with increased risk of substance use, dangerous driving and criminal behavior among both adolescent and adults. Our prospective cohort study examines whether ADHD diagnosis and particular ADHD symptoms among repeat DUI offenders are associated with increased risk of MV violations, future DUI offenses, and overall criminal behavior.
Methods: Participants (n = 586) at a repeat DUI offender treatment program completed the Composite International Diagnostic Interview (CIDI), including the ADHD module, and allowed for collection of Criminal Offender Record Information (CORI) data up to 5 years post-treatment. We used chi square analysis to determine whether ADHD diagnosis and symptoms were associated with increased criminal behavior, and logistic regression to

determine whether particular symptoms were predictors of criminal offense.
Results: ADHD diagnosis was associated with increased risk of future motor vehicle violations (MVV), driving under the influence (DUI) offenses, and overall criminal behavior. The impulsiveness/hyperactivity cluster of symptoms was associated with increased criminal behavior, as was the symptoms of difficulty organizing tasks and activities.
Conclusions: ADHD is associated with increased risk of criminal behavior, and repeat DUI offenders may benefit from increased mental health screening and appropriate treatment. Those with symptoms of impulsiveness/hyperactivity, and of organizational difficulties, may be at increased risk, and may benefit particularly from targeted intervention.

PARANOID PERSONALITY MASKING AN ATYPICAL CASE OF FRONTOTEMPORAL DEMENTIA

Lead Author: Jay M. Littlefield II

SUMMARY:

Frontotemporal dementia (FTD) is a debilitating disease that is well described in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), and typically presents with memory impairment, progressive decline in cortical functioning, and behavioral changes. Age of onset is generally in the fifties, and usually the first presentation involves a change in behavior and emotional blunting. Treatment of FTD involves management of any neurobehavioral symptoms while trials of atypical antipsychotics are ongoing but suggest some efficacy. We present a case of a patient who first presented with severe paranoid personality traits and frank persecutory delusions. This atypical presentation of our patient first lead to her incorrect diagnosis of a psychotic disorder and paranoid personality disorder. As a result of this diagnosis she was treated appropriately, however, her treatment was unsuccessful. A subsequent MRI then showed atrophy of frontal and temporal lobes bilaterally (left more prominent than right) which confirmed the diagnosis of FTD. The importance of this case involves the atypical presentation of paranoia and delusions, our patient's incorrect diagnosis based on presentation lead to a trial of unsuccessful treatment. Only after performing an MRI, which showed atrophy, was the patient appropriately treated and deemed medically stable. This case report illustrates the importance of considering a rare presentation of frontotemporal lobe dementia with patients who are in the typical age range and present with severe paranoia and delusions.

A CASE OF 13 YEAR-OLD FEMALE WITH EATING DISORDER, INSULIN-DEPENDENT DIABETES MELLITUS, AND MAJOR DEPRESSION: THE NEED FOR A MULTIDIMENSIONAL APPROACH

Lead Author: Jay M. Littlefield II

SUMMARY:

Our patient presented with a very complicated history including, insulin dependent diabetes mellitus (IDDM), major depressive disorder (MDD), and an eating disorder (ED). After an extensive workup, including inpatient and outpatient treatment, the patient was successfully treated and discharged. There is a great lack of literature and research that shows how to properly treat a patient who suffers from these conditions and co-morbidities together.
One of the important questions in this case is: what is the best treatment option? Our patient has a very extensive past history that created a difficult group of illnesses to treat in this adolescent female. These three separate illnesses are each hard to treat alone. Adding them all together compounds the treatment difficulty. After reviewing the literature, we found that the best recommended treatments for this patient is as follows: Treat the patient's major depressive disorder with intensive cognitive behavioral therapy (CBT) combined with Fluoxetine, and group therapy. Treat the eating disorder with CBT, group and family therapy, as well as monitored exercise therapy. Treat the insulin dependent diabetes mellitus with continuous insulin infusion and continuous glucose monitoring with nutritional planning, as well as HbA1c testing according to the American Diabetes Association schedule.
Each of these therapies to be performed to achieve the maximum effectiveness of treatment to recover and self-heal from these illnesses.
A review of and search of the literature for IDDM, MDD, and an ED reveals a plethora of research on individual conditions, and some

articles linking an increased incidence of these conditions in adolescent teenagers. However, there is a very large gap in medical and psychiatric treatment of patients with each of these conditions together. This paper shows a detailed review of the literature that can help to close this gap for this unique presentation. Further research, including clinical trials on a larger scale are still needed to be able to show definitive proof of effective treatment that has been proposed here.

SUBSTANCE INDUCED CATATONIA IN PEDIATRIC POPULATION: LITERATURE REVIEW AND A CASE REPORT

Lead Author: Deepti Vats, M.D.
Co-Author(s): Ankit Parmar, M.D., M.H.A., Manish Aligeti, M.D., M.H.A.

SUMMARY:

Catatonia remains an intriguing disorder. Multitude of adult cases have been reported which provide fair understanding of several etiologies that potentially induce catatonic features. However, catatonia in pediatric population has not been studied well, mostly because it is largely under diagnosed (Dhossche & Wachtel, 2010). Among the most common known causes of catatonia in pediatric population are Schizophrenia and other psychotic disorders, mood disorders, and misuse of recreational as well as prescription substances. Identifying the etiology of catatonia is vital for its prompt treatment. Untreated catatonia in kids can lead to growth retardation and malnutrition secondary to poor oral intake, even progress to lethal catatonia and eventual death (Bhati, Datto, & O'Reardon, 2007). We are presenting a literature review of cases that have reported catatonic symptoms secondary to substances in this population. This review will identify agents that lead to catatonia and help formulate a treatment guideline to possibly resolve such an episode and hence prevent its dire sequelae. A case report of a thirteen-year-old girl, who developed catatonia secondary to opioid intoxication, is also described here to provide an illustration of the efficacy of the treatment approach.

Reference:

Dhossche, D., & Wachtel, L. (2010). Catatonia is hidden in plain sight among different pediatric disorders: a review article. Pediatric Neurology , Nov;43(5):307-15.

Bhati, M., Datto, C., & O'Reardon, J. (2007). Clinical Manifestations, Diagnosis, and Empirical Treatments for Catatonia. Psychiatry (Edgmont) , March, 4(3): 46â€“52.

s to clinical practice guidelines could increase quality of patient care. Similarly, 94% of resident respondents believe that easy access to hospital safety protocols are likely to increase patient safety. Most respondents felt that a pocket psychiatry clinical handbook was likely to increase the consistency of care received by patients (87%), could serve as a convenient source of advice (97%), and could serve as a useful educational tool (91%). Most respondents did not feel that a clinical psychiatry resource book would be too rigid to apply to patients (66%), nor challenge their autonomy as a resident (85%). A strong majority of respondents, 90%, replied that a pocket clinical handbook for psychiatry would be a resource they would use if available.

Conclusions: Psychiatry residents sampled at one Canadian university postgraduate program, although generally positive about clinical guidelines and their ability to improve patient care, have not yet integrated the use of such guidelines into their practices to a significant extent. Our results suggest an interest among residents in a convenient clinical resource containing clinical practice guidelines and safety protocols and that residents would use a pocket clinical handbook if available. Overall, it is posited that access and utilization of such a handbook has the potential to improve patient care. The next stages of the quality improvement project seek to reassess impact of the resource six months post-implementation.

MAY 17, 2015

INTERNATIONAL POSTER SESSION 1

Volunteer Moderators: Heena Desai, M.D., Sadiq Hasan, M.D., Shirwan Kukha-Mohamad, M.D.

PREVALENCE OF STRESS AND ITS DETERMINANTS AMONG RESIDENTS

Lead Author: Fahad D. Alosaimi, M.D.
Co-Author(s): Fahad D. Alosaimi, MD , Sana Kazim MBBS, Auroabah Almufleh MBBS, Bandar AlAdwani MBBS, Abdullah Alsubaie MD

SUMMARY:

ABSTRACT
BACKGROUND: Residency training is a tough, stressful period during the development of a professional career. It may contribute to several physical and psychological problems, including stress. Data examining stress among residents in Saudi Arabia has been absolutely lacking.
OBJECTIVES: The goal of this study was to examine perceived stress among residents in Saudi Arabia and its associated risk factors.
METHODS: A cross-sectional study was carried out between May 2012 and October 2012. A self-administrated questionnaire was developed, which included socio-demographic characteristics, work load and stressors, job satisfaction, and stress management. The likelihood of stress was assessed using the perceived stress scale (PSS).
RESULTS: Out of the 4000 residents contacted, 1035 responded (response rate 25.9%) and 938 were included. The residents had an average age of 28.4Â±3.0 years. They were approximately 55% males, 88% Saudi, and 58% married. The mean PSS score was 22.0Â±5.1. With the exception of female gender, no significant associations were detected between stress and socio-demographic or behavioral factors. Stress was associated with higher work load (dealing with more patients and working more weekends) and sleep deprivation (sleeping few hours and feeling un-refreshed after sleep). Stressors included work-related, academic, and homesickness stressors. Stress was associated with dissatisfaction with colleagues and the program as well as harmful ideation.
CONCLUSION: Residents in Saudi Arabia are at high risk of perceived stress, which is comparable or slightly higher than that reported among residents in different parts of the world. Unfortunately, more than 90% of our residents never received stress management, which points at the need for stress management programs during residency.

PSYCHODYNAMIC PSYCHOTHERAPY SUPERVISION FOR PSYCHIATRY RESIDENTS

Lead Author: Dusan Kolar, M.D., Ph.D.

SUMMARY:

Objective: To review specificities of and difficulties in psychodynamic psychotherapy training for psychiatry residents.

Resident training in psychotherapy usually includes didactic seminars and case supervision. The Royal College of Physicians and Surgeons of Canada requires a minimum of 32 weeks of the PGY2-PGY5 psychotherapy experience. Most of Canadian universities organize for residents training in supportive psychotherapy, cognitive-behavioral therapy and long-term psychodynamic psychotherapy. At the beginning of the PGY3 year, residents will begin supervised practice in psychodynamic psychotherapy for a minimum of one year.
There is a lot of differences between resident training in psychodynamic psychotherapy and a training in more manualized therapies such as CBT. Residents may perceive psychodynamic psychotherapy as too complicated and demanding and they may require a more directive approach and guidance regarding psychotherapy technique and psychotherapy process. This is understandable because they lack personal/didactic analysis and it is hard to start a long case without previous experience and a clear idea how psychotherapy session should look like. Supervisor trained in psychoanalysis needs to take into account differences in

supervision as a part of psychoanalytic training and psychiatry resident supervision in psychodynamic psychotherapy. Unlike the psychoanalytic training organized by psychoanalytic institutes, training in psychotherapy as a part of residency training is much less defined in terms of standards and expectations from both residents and supervisors. The profile of psychodynamic psychotherapists who serve as supervisors for residents may vary significantly with regards to their training, experience and personal style in supervision. Criteria for assessment of resident performance and his/her progress in training are not well established. Residency training committees and psychotherapy training committees should work on creating standards of psychotherapy supervisions for residents.

In conclusion, long-term psychodynamic psychotherapy supervision for psychiatry residents is a specific and modified type of psychotherapy supervision. There is a need for standardization of the psychodynamic psychotherapy supervision.

PAINS OF MILITARY PSYCHIATRY TRAINEES RECEIVING BEHAVIORAL HEALTH CARE

Lead Author: Alyssa Soumoff, M.D.

SUMMARY:

Being a psychiatry resident can be extremely stressful for reasons both related to residency and independent of it. Active duty military psychiatry residents are often not afforded the same anonymity in receiving behavioral healthcare as are other patients, which may be a deterrent to them receiving care. To identify how behavioral healthcare could be better provided to military psychiatry residents a brief, optional, and anonymous survey was created and distributed to psychiatry residents at an American military training hospital. There was a 58% response rate for the survey. The general themes in the responses included that psychiatry trainees would prefer to receive behavioral healthcare as far removed from the residency as possible, sometimes even at the cost of convenience and expense to themselves; and that the primary concerns in receiving behavioral healthcare was anonymity and protection of their medical privacy. This project proposes recommendations to military residencies to identify and communicate to residents methods by which they could receive behavioral healthcare in a setting removed from the residency with more anonymity. Further steps would be to gather feedback from the residents after implementing changes and to employ similar procedures with active duty military behavioral health staff members.

SUBSTANCE ABUSE AMONG PHYSICIANS

Lead Author: Milapkumar Patel, M.D.
Co-Author(s): Alan Felthous, M.D., Anjan Bhattacharyya, M.D.

SUMMARY:

Physician substance abuse is a significant societal problem that affects all aspects of medical care. Similar to the general population, there is a 10-15% prevalence of physicians with substance abuse. Physicians today have striven hard to achieve excellence in training yet, surrounded by the pressures of higher standards of clinical competence. Factors in their personal lives may place them at risk for drug abuse and mental disorders. Even residents in training were reported to have a history of using substances. Physicians who abuse alcohol and drugs will do whatever they can to avoid detection. Denial on part of the abuser and hiding at great lengths is indicated to be the hallmark of substance abuse. It is said that peer monitoring and reporting is an ethical responsibility. However, many physicians do not report their colleagues. In addition to stigma, physician leaders and administrators are reported to have little training on how to deal with an impaired

colleague. The Missouri State Medical Association, recognizing the need for assisting impaired physicians, established the Missouri Physicians Health Program (MPHP) in 1985. The study was conducted from 1995 to 2002 at MPHP to help impaired physicians. The recovery rate of the 197 participants in this study was 90%. The average number of referrals was 24 per year from 1995 to 2002. Physician impairment is a real and significant public health concern. Risk factors include psychosocial and familial factors, and members of certain medical specialties are more likely to have substance use issues than others. It is imperative for physician to appreciate their moral and professional obligation to preserve society's trust by monitoring themselves and helping their impaired colleagues. Society expects and deserves competent and safe health care providers. Competent care and patient protection is expected from everyone.

THE 10-YEAR, FOLLOW-UP STUDY OF GENETIC AND PSYCHOSOCIAL FACTORS AFFECTING THE ALCOHOL DRINKING BEHAVIORS OF KOREAN YOUNG ADULTS

Lead Author: Sang Ick Lee, M.D., Ph.D.
Co-Author(s): Sie Kyeong Kim M.D., Ph.D., Joo Bong Hong, M.D., Ph.D., Kyung Hwan Jee M.D., Ph.D., Yeong Woo Nam M.D., Bo Ah Kim M.D., Hynn Chung Jang M.D.

SUMMARY:
The authors had been studying on the effect of genetic and psychosocial factors on the alcohol drinking behaviors of the 534 college students ten years ago. And some of them participated in this study for the 10-year follow-up. They were evaluated for the motives for drinking, cognitive expectancies, genetic disposition, temperament, characters and the stress from work and life events as psychosocial factors, and for tryptophan hydroxylase (TPH) and serotonin transporter (5-HTT) gene polymorphism as genetic factors.
For past 10 years, the drinking rate showed no significant change but the painful reaction from alcohol has increased. Although the differences in the distribution of TPH and 5-HTT genes ensuing the drinking problem has not been noticed, novelty seeking as a temperament factor showed correlation with drinking severity. While social motive had been the main factor affecting the drinking severity 10 years ago, this study showed that in addition to social motive, positive drinking motives such as enhancement and negative drinking motives such as coping and conformity were the main factors. Futhermore, cognitive expectancies also displayed significant influences.
The problematic drinking for Korean young adults showed associations with cognitive expectancies, drinking motives, psychological and social factors rather than genetic factors of TPH and 5-HTT gene polymorphism. However, since novelty seeking, an innate temperament disposition factor, showed relation with drinking severity, further studies on various genes and temperament were needed.

BETAXOLOL(BTX) SUPPRESSED THE DEVELOPMENT AND EXPRESSION OF METHAMPHETAMINE-INDUCED CONDITIONED PLACE PREFERENCE IN RATS

Lead Author: Kim Byoungjo, M.D., Ph.D.
Co-Author(s): Jong-Chul Yang M.D., Ph.D., Kyung Won Park, M.D.

SUMMARY:
Amphetamines are the most widely used illicit drugs. Methamphetamine (MAP) has strong psychostimulant effect and severe addictive property, also become a major drug of abuse, and its abuse is a major health problem; its addiction has no corresponding detoxification agent yet. In this study, we investigated the effect of BTX in MAP addiction using the MAP induced mice CPP development, expression and reinstatement model, in

order to elucidate the effect of BTX in the drug addiction and the relapse of it.

Methods
1. Effect of BTX on development of MAP-induced CPP
First day, each mouse habituated for 20 min. Next day, we tested the natural preference of mice. 3rd â€“ 8th day, conditioning period, each mouse was given BTX (5 mg/kg, i.p.) 30 min prior to the administration of MAP (1 mg/kg, s.c.) or saline (1 ml/kg) every other day and paired with for 1 hr. The mice received MAP were subjected to less preferred side. 9th day(test day), the animals were allowed free access. The time spent was recorded for 20 min.
2. Effect of BTX on established MAP induced CPP
In order to assess effect of BTX on the blocking of MAP induced CPP, each animal was conditioned with MAP (1 mg/kg, s.c.) or saline (1 ml/kg). The mice were tested 48 hr after the last conditioning. They were administered with BTX (5 mg/kg, i.p.) or saline 24 hr before the test.
3. Effect of BTX on drug-priming reinstatement of MAP induced CPP on mice
Three days after determining the extinction of CPP, each animal was injected with a priming dose of MAP (0.125 mg/kg, s.c.) or saline. They were given BTX (5 mg/kg, i.p.) or saline 24 hr prior to the priming injection of MAP and were immediately tested to see whether place preference was reinstated.
4. Statistical analysis
Data are expressed as mean Â± S.E.M. CPP score was calculated as the difference of time spent in the chamber B during pre- and post-conditioning phase. The significance of differences between groups was determined by one-way ANOVA followed by Manny-Whitney U-test or Kruskal-Wallis test

Results : One day after 3 pairing with MAP (1 mg/kg, s.c.), the time spent in the MAP-pairing compartment was increased by about 18%. This result means that the MAP-induced CPP was developed and maintained. The repeated administration of BTX (5 mg/kg, i.p.) 30 min prior to the exposure to MAP significantly reduced the development of MAP-induced CPP. When BTX was administered 24 hr prior to the CPP testing session at 9th day, it also significantly attenuated CPP, but not changed locomotor activity. In the drug-priming reinstatement study, the extinguished CPP was reinstated by MAP (0.125 mg/kg, s.c.) injection and this was significantly attenuated by BTX

Conclusion :The present study demonstrated that BTX suppressed the development & expression of MAP induced CPP in rats. These findings suggest that BTX has a therapeutic and preventive effect on the development, expression and drug-priming reinstatement of MAP induced CPP.

PHYSICAL ILLNESS IN PATIENTS WITH SUBSTANCE USE DISORDERS FROM MENTAL HEALTH CARE SERVICES IN FIVE COUNTRIES

Lead Author: Karel J. Frasch, M.D.
Co-Author(s): Reinhold Kilian, Ph.D., Thomas Becker, M.D.

SUMMARY:

Introduction: In patients using addictive substances, physical comorbidity is a common issue. This study aims to examine the relationships between substance use disorders (SUD) and lifetime somatic comorbidity in patients of 12 mental health care facilities in Denmark, Germany, Japan, Nigeria and Switzerland.

Method: Lifetime and current data on physical and mental health status from all eligible patients consecutively admitted to the respective study centers were assessed on the basis of medical records and a physical examination according to a screening questionnaire that was

developed for the study over a period of one year.
In patients with SUD, the prevalence of comorbid somatic conditions was examined by means of logistic regression analysis. As to study sites, the Danish collective were chosen as reference category.

Results: Of 2338 patients, 447 (19%) had a primary or secondary SUD diagnosis. In comparison with patients with other mental disorders (and no SUD), patients with SUD had a higher prevalence of infectious and digestive diseases, but a lower prevalence of endocrine, nutritional and metabolic disorders. Patterns of physical comorbidities differed according to the type of substance use. In comparison to Danish patients (n=204), the prevalence of most physical diseases was higher in SUD patients from Germany (n=95; eye and ear, cardiovascular, musculoskeletal) and Switzerland (n=131; infectious, endocrine, cardiovascular). Unfortunately, SUD case numbers in the Japanese and Nigerian centers were very low.

Discussion: In our patient collective, we found higher prevalence rates of several disorder classes in SUD patients, especially in the German and the Swiss group. We do not know whether the reported data reflect true differences or variation in the quality of the diagnostic procedures in the respective study sites. In addition, patient selection might have differed across the sites. That is why site differences could reflect differences in setting and not necessarily causal effects.
SUD related somatic health risks, which are reported across the globe, require integrative and early detection programmes and their evaluation, respectively.

ILLICIT DRUG USE AMONG PSYCHIATRIC PATIENTS IN BRAZIL: A NATIONAL REPRESENTATIVE STUDY

Lead Author: Ana Paula Souto Melo, M.D., M.P.H., Sc.D.

Co-Author(s): Miriam A. Nahas, B.A., Ana Paula S. Melo, M.D., Milton L. Wainberg, M.D., Karen McKinnon, M.A., Francine Cournos, M.D.

SUMMARY:
Introduction: Substance use and mental health disorders together represent the main cause of potential life lost due to premature mortality and disability worldwide. In the US, only one in 10 people who could be helped by addiction treatment actually obtains it. About 40 million people in the US below the diagnostic threshold who engage in medically harmful use are at-risk for developing alcohol or drug addiction. Use of psychoactive illicit drugs significantly increases the likelihood of negative health outcomes. The prevalence of illicit drug use among patients with mental illnesses (PMI) is higher than in the general population, and higher among men than women. There is scarce data on illicit drug use among PMI in Brazil, and none with national representative sampling. Objective: We aimed at assessing the prevalence and factors associated with lifetime illicit drug use among PMI in Brazil, stratified by gender. Methods: Cross-sectional study of a national representative sample of adult PMI in Brazil (n=2,475) randomly selected from 11 hospitals and 15 outpatient services. Risk behavior data were obtained from face-to-face interviews and psychiatric diagnosis from medical charts. Logistic regression was used to estimate the associations with illicit drug use. Results: The overall prevalence was 25.4%. Men had a higher prevalence than women (36.8% and 14.7%, respectively) and used more than one type of drug (67.7% and 39.3%, respectively). Among both, the most common drug used was cannabis and cocaine. Injection drug use was uncommon. Younger age, lower education, prior psychiatric hospitalization, past history of STDs, tobacco and alcohol use, history of homelessness and incarceration, younger age at sexual debut, and higher

number of sex partners, were statistically associated with illicit drug use for men and women. Not professing a religion was associated among women only, and being single and having a history of sexual and physical violence were associated among men only. Severe psychiatric diagnoses did not remain in the final multivariate model. Conclusions: The prevalence of lifetime illicit drug use among PMI is higher than in the general Brazilian population. Context and vulnerability characteristics are strongly associated with illicit drug use. Consistent with Kessler's US findings, history of prior psychiatric hospitalization may indicate greater likelihood of developing future substance use disorders (SUD). Lifetime drug use may be an indicator for early intervention before SUD develops and general health benefits may also result. Although most factors were similarly associated with illicit drug use among men and women, gender-based interventions should be carefully considered, including sexual risk behavior and interpersonal violence. Integration between psychiatric care and psychoactive substance use treatment settings and addiction training for psychiatrists should be a public health priority.

THERAPIST LANGUAGE AND THE ADOLESCENT BRAIN IN THE CONTEXT OF CANNABIS USE

Lead Author: Sarah W. Feldstein Ewing, Ph.D.
Co-Author(s): Sarah W. Feldstein Ewing, PhD, Uma Yezhuvath, PhD, Rachel E. Thayer, MS, and Francesca M. Filbey, PhD

SUMMARY:

Behavioral therapies are the most frequently used intervention approach for adolescents. Despite their prevalence, we have little understanding of how and why they work, particularly for youth. Thus, we aimed to examine the role of therapist behaviors in the context of adolescent cannabis use and treatment outcomes. Specifically, we evaluated how the adolescent brain responds to more advanced clinical language (complex reflections; CR) advocated in interventions, such as motivational interviewing (MI), versus treatment language discouraged in many addictions interventions (closed questions; CQ). We enrolled 16 substance-using youth (ages 14-19; M age=17; 60% male). All youth received two MI sessions targeting reducing substance use. Within-session client language was extracted from each youth's therapy session for use in their fMRI paradigm. We then pseudo-randomly re-presented youth with their own statements in favor of changing (change talk; CT) and staying the same (sustain talk; ST), along with two types of therapist responses: CR ("You're worried about your use.") and CQ ("Have you tried quitting?"). We found an inverse relationship between youths' baseline cannabis use and both types of therapist language across critical brain regions including the parahippocampal gyrus, caudate (Max t=6.48) and precuneus (Max t=6.08), with CQ showing relatively greater BOLD response when compared with CR (anterior cingulum; Max t=3.7). Critically, these same relationships were also relevant to youths' treatment response, whereby youth with more BOLD activity during each type of therapist language (e.g., CR = middle frontal gyrus; CQ = superior parietal lobule precuneus; Max t=10.05) reported significantly less cannabis use at the 1-month follow-up. Together, these data suggest the high relevance of therapist language in adolescents' brain response, and related treatment outcomes.

UP IN SMOKE: THE IMPACT OF EARLY ONSET MARIJUANA USE ON NEUROCOGNITION, BRAIN STRUCTURE AND FUNCTION

Lead Author: Staci Gruber, Ph.D.
Co-Author(s): Staci A. Gruber, Ph.D., Kelly A. Sagar, M.S., Mary Kathryn Dahlgren, M.S., Meredith Dreman, B.A., Atilla Gonenc, Ph.D., Scott E. Lukas, Ph.D.

SUMMARY:

Marijuana (MJ) remains the most widely used illicit substance in the world, and dialogues regarding legalization of recreational and medical MJ are likely affecting the rates of use among our nation's youth. Perceived risk of MJ is at its lowest levels in 30 years, and significant increases in current and daily MJ use have been observed among teens; these accompany an alarming drop in the average age of first MJ use. Adolescence is a critical time of neuromaturation, with mounting evidence that the developing brain is more vulnerable to the effects of drugs than the adult brain. This presentation will highlight data from multimodal imaging studies which underscore the impact of early onset MJ use on neurocognition, brain function and structure. Findings from these studies have demonstrated a relationship between early MJ onset, increased impulsivity/reduced inhibitory function and altered white matter microstructure, and provide evidence for specific age of MJ onset related changes. Implications of these data will be discussed including the importance of early identification, education and intervention.

QEEG FINDINGS IN MALE ALCOHOLICS

Lead Author: Sangchul Seo, M.D.

SUMMARY:

Objective

We evaluated relative power and alpha asymmetry in male patients with alcohol dependency in comparison to a normal control group. Our research objective was to investigate the pathophysiologic conditions of alcohol dependence from a neurophysiologic perspective.

Methods

Study participants included thirty healthy volunteers in a control group and thirty patients with alcohol dependency. Both groups were not exposed to drugs or alcohol for at least one month prior to the study. Using 32-channel electroencephalogram system, data was collected under stable conditions with each subject's eyes closed. Data for relative power and alpha asymmetry in the alpha(8~12Hz), beta1(12.5~16Hz), beta2(16.5~20Hz), beta3(20.5~28Hz), delta(1~3Hz), and theta(4~7Hz) frequency ranges were measured, compared and analyzed.

Results

Increments in beta1(12.5~16Hz), beta2(16.5~20Hz), and beta3(20.5~28Hz) relative power were observed across the entire scalp area of patients with alcohol dependency, while alpha(8~12Hz), delta(1~3Hz), and theta(4~7Hz) relative power in these patients across the entire scalp area was statistically lower. In addition, the values for alpha asymmetry in the alcohol-dependent patients were higher than for the control group.

Conclusions

All three bands of beta power from resting EEG were increased across the scalp areas in patients with alcohol dependency. Meanwhile, alpha, delta, and theta power values were lower in these patients. We also detected relatively higher left frontal activation by alpha asymmetry in the alcohol-dependent group. Further research using EEG to define stable physiological indicators for alcoholics will aid future alcohol dependency studies.

MAGNETIC RESONANCE IMAGING OF HIPPOCAMPAL SUBFIELDS IN ALCOHOL USE DISORDER

Lead Author: Jeonghwan Lee, M.D.

Co-Author(s): Sungjin Im M.D., Gawon Ju, M.D., Siekyeong Kim, M.D., Jung-Woo Son, M.D., Chul-Jin Shin M.D., Sang-Ick Lee, M.D.

SUMMARY:

Alcohol use diorder is a known major risk factor for loss of brain volume, especially in hippocampus. As hippocampus is consisted of functionally different subfields,

we hypothesized that hippocampal subfields would differentially affected by chronic alcohol use.

Total of 27 male patients with alcohol use disorder were recruited from the inpatient mental hospital for alcoholics in Cheongju, Korea and 29 age-matched male control group were recruited by advertising in the community. All participants underwent 3T magnetic resonance imaging. Each hippocampal subfield was estimated using automated procedure implemented in FreeSurfer. After that, ICV correction was conducted. We assessed Lifetime Drinking History and Alcohol Use Disorder Identification Test and Michigan Alcoholism Screening Test.

Comparing subjects with alcohol use disorder and control group, patients group showed an average volume reduction in left presubiculum (13.5%), left CA1 (7.4%), left CA2_3 (9.5%), left fimbria (31.9%), left subiculum (12.4%), left CA4_DG (9.4%), right presubiculum (10.7%), right CA2_3 (9.0%), right fimbria (23.7%), right subiculum (10.7%). Volume reduction in total hippocampus in left, right were 10.8% and 9.2% each. Interestingly, SMAST score was negatively correlated with volume reduction in left presubiculum, left CA2_3, left fimbria, right fimbria. These findings support the hypothesis that alcohol use disorder differently affects the volume reduction in hippocampal subfields.

NALMEFENE IN COMBINATION WITH ANTIDEPRESSANTS IN THE TREATMENT OF DEPRESSION AND CO-OCCURRING ALCOHOL USE DISORDER: A CASE REPORT

Poster Presenter: Nestor Szerman, M.D.
Lead Author: Nestor Szerman, M.D.
Co-Author(s): Nester Szerman, M.D.

SUMMARY:

Introduction

In several clinical trials, when assessing the effectiveness of treatments for mood depression co-occurring with alcohol use disorders (AUD), only those who combine antidepressants with drugs used to decrease alcohol use seem to have an impact on both the symptoms of depression and in reducing the co-morbidity of alcohol abuse (1). Treating mood disorders exclusively has little effect on co-occurring SUDs, which are well known to worsen the prognosis. New pharmacological options must be welcomed and tested.

Objectives

To test the effectiveness of nalmefene in combined therapy with antidepressants in treating alcohol use disorder and depression, and open the way to future comparisons with already known strategies such as disulfiram or naltrexone in combination with AD.

Results

This is a case report of a 54 year old male patient, with depression and severe alcohol use disorder, diagnosed according to DSM-5 criteria. The patient arrived at our Mental Health Services Centre by recommendation of his GP, who had already started AD treatment with Sertraline at 100 mg/day with little response. When first evaluated, he expressed sadness, apathy, anhedonia and insomnia. Alcohol consumption counted up to over ten bottles of beer (over 3 litres) per day. Alcohol priming was present. He denied previous history of withdrawal symptoms.

Nalmefene, an opioid receptor antagonist recently available to be administered orally, was added to the AD at a daily dose of 18 mgs, provided at the medical centre on a disulfiram-like programme (monday-friday) in order to assure treatment completion.. Sertraline was increased to 200 mgs/day . The impact of this procedure was measured using Hamilton's depression rating scale, which showed a score reduction of over 50% in three months. Alcohol abuse was measured using self-completed diaries. At week 12, alcohol units had gone from a mean of 14/day on week one to 2/day at week 12. The Alcohol

Problems Questionnaire had a score of 34 on baseline and on week 12 was of 9 points. No side effects other than headache and mild nausea at the beginning of the treatment were referred by the patient.

Conclusions
Nalmefene, in combination with sertraline, reduced alcohol abuse considerably and probably had an impact on improving depressive symptoms. The safer side-effect profile of nalmefene in comparison to naltrexone makes it a good alternative for use in heavy drinkers with no physiological dependence, and in our patient's case, turned out to be a good treatment for co-occurring depression and AUD, just as effective as naltrexone has proved to be in previous clinical trials (1).

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THE EFFICACY OF METHYLPHENIDATE VERSUS ATOMOXETINE IN TREATING ATTENTION-DEFICIT/HYPERACTIVITY DISORDER IN CHILDREN AND ADOLESCENTS

Lead Author: Gadia A. Duhita, M.D.
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SUMMARY:

ADHD is the most common behavioural disorder in Indonesia. Stimulant, specifically methylphenidate, is the first drug of choice for ADHD treatment more than half a century. During the last decade, non-stimulant therapy (atomoxetine) for ADHD treatment has been developing. Growing evidence of its efficacy and the difference in side effects profile to stimulant therapy have made methylphenidate's position as first line therapy needs to be re-evaluated. Both methylphenidate and atomoxetine have proven itselves against placebo in reducing core symptoms of ADHD. More recent studies directly compare the efficacy of methylphenidate and atomoxetine.
The objective of this paper is to found out if either methylphenidate or atomoxetine is superior to another. This paper assessed the validity, importance, and applicability of current available evidence which compare the effectivity, efficacy, and safety of methylphenidate to atomoxetine for treatment in children and adolescent ADHD.
The articles are searched through PubMed and Cochrane database with "attention deficit/hyperactivity disorder OR adhd", "methylphenidate", and "atomoxetine" as the search keywords. Two articles which were relevant and eligible were chosen by using inclusion and exclusion criterias to be critically appraised.
The study by Hazel et al. showed that the efficacy of methylphenidate and atomoxetine are comparable for treatment in children and adolescent ADHD. The result shows 53.6% (95% CI 48.5%-58.4%) of the patient responded to the treatment by atomoxetine and 54.4% (95% CI 47.6%-61.1%) patients were responded to methylphenidate, with the difference in proportion of â€“0.9% (95% CI â€“9.2%-7.5%). The other study by Hanwella et al. also showed that the efficacy of atomoxetine was not inferior to metilphenidate (SMD = 0.09, 95% CI â€“0.08-0.26) (Z = 1.06, p = 0.29). However, the sub-group analysis shows that OROS methylphenidate is more effective compare to atomoxetine (SMD = 0.32, 95% CI 0.12-0.53) (Z = 3.05, p < 0.02).
The efficacy of methylphenidate and atomoxetine in reducing symptoms of ADHD is comparable. None is proven inferior to another. The choice of pharmacological tratment children and adolescent with ADHD should be made

based on contraindication and the side effects profile of each drug.

ADHD: A CLOSER LOOK AT THE DANGERS OF MISDIAGNOSIS

Lead Author: Joseph Siragusa, M.D.
Co-Author(s): Colin Kanach, M.D.

SUMMARY:

Attention Deficit/Hyperactivity Disorder (ADHD) affects 5% to 11% of children, aged 4-17 years, in the United States, 1,2,3,4 with the prevalence rising each year. 2 With an estimated 4.5 million children diagnosed with ADHD, it is the most commonly diagnosed neurobehavioral disorder in the pediatric population. 4,5,6 Controversy exists as to whether the increasing prevalence is due to an improvement in diagnostic accuracy or whether the condition is over-diagnosed. 3,6,7,8,9

Perhaps more importantly, some suspect an estimated one million children (or 20%) are actually misdiagnosed. 3,6 Explanations for this range from teacher misidentification 3,4 of behaviors to confounding medical conditions. 7,8,9

It has been documented that patients afflicted with ADHD have a higher risk of developing a Substance Use Disorder (SUD). 4,5,10,11 With the rise in prevalence, there has also been a concurrent rise in the use of stimulants to treat this population. 12,13 It has been suggested that early intervention with stimulants in those properly diagnosed has a protective effect on SUD. 4,10 It has also been shown that the age of which the patient is when first treated impacts the future risk of SUDs. 4,5,10 Yet, stimulants, when used by the general population, have addictive potential and high rates of abuse. 1,14,15

There has been an increase in the non-medical use of prescription medication over the last 15 years, including the use of prescribed stimulants. 1,12,13 Long-term neuropsychiatric sequelae resulting from the abuse of stimulants are numerous and include behavioral, cognitive, and affective problems. 16 The extent to which chronic administration of stimulants affects brain development and maturation has not been extensively studied. More importantly, whether these medications affect the development/maturation of brains afflicted with ADHD is unclear and has yet to be elucidated.

Although there is much discussion regarding stimulant therapy in children with ADHD, not much attention has been given to the potential dangers of using stimulant medication in children and adolescents who do not fully meet criteria for the disorder. This paper will summarize the issues regarding misdiagnosis, examine methods of improving diagnostic accuracy, and explore the potential negative consequences of mistreating individuals who do not fully meet criteria for diagnosis.

ILLICIT DRUGS AND MEDICATIONS USED IN PREGNANCY CAUSE ADHD

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SUMMARY:

Background: Attention deficit hyperactivity disorder (ADHD) is a common childhood neuropsychological disorder characterized by symptoms of inattention, hyperactivity and impulsitivity that are not appropriate for a person's age and later in life, are at an increased risk of conduct disorder, antisocial behavior and drug abuse. The worldwide pool prevalence was 5.29% and 70% of the children with ADHD continue to have symptoms as adults. The cause of most cases of ADHD is unknown; however, it is believed to involve interactions between genetic and environmental factors in a polygenetic pattern so that genes can exert their influence only via interactions with the environment.

It is known that active metabolites of drugs enter the fetal bloodstream and penetrate the fetal blood-brain barrier interfering with

early neuronal cell development or may cause neuronal death. Researchers hypothesize that drug metabolites interact with the genetic makeup to influence cognitive development and behavior. Hence prenatal exposure of foreign agents like Nicotine/tobacco, alcohol, cocaine, drugs etc may have an adverse effect on the central nervous system (CNS) of the developing fetus and subsequently reflect later in a child's neurobehavioral function.
Objective: The purpose of this review was to examine the literature assessing the relationship between prenatal exposure of illicit drugs and medications to the risk of developing ADHD in childhood.
Method: We are conducting a literature review from previous articles through Pub med and other resources.
Result: studies have shown cigarette smoking, alcohol, marijuana, cocaine, methylphenidate, atomoxetine, methamphetamine, acetaminophen, antiepileptics and antihypertensives used during pregnancy have an increased risk of ADHD in children.
Conclusion: With the growing concern regarding ADHD, all drugs, including prescribed medications should be avoided during pregnancy. Women who wish to use prescribed drugs during pregnancy should be assessed to determine whether the potential benefits to the mother outweigh any risk to the fetus. Behavioral interventions with close monitoring should be encouraged in the clinical setup as the first treatment option to help pregnant women abstain from illicit drug use.

LONG-TERM SAFETY OF METHYLPHENIDATE MODIFIED RELEASE UPON CONTINUOUS EXPOSURE (UP TO 66 WEEKS) IN ADULT ADHD

Lead Author: Michael Huss, M.D., Ph.D.
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SUMMARY:
Purpose

Previously we reported the safety and efficacy of methylphenidate modified release long-acting (MPH-LA) in adult attention deficit hyperactivity disorder (ADHD) in a 40-week, randomised, double-blind placebo-controlled core study comprising three phases (9-week dose confirmation phase, 5-week open-label dose optimisation phase and 26-week maintenance of effect phase) [1]. It was followed by a 26-week, multicentre, open-label, flexible-dose extension study. In this report, we evaluated the safety of MPH-LA in adult ADHD for the complete 66-week core and extension studies.

Methods

Safety was monitored for the complete duration of the core and the extension studies in terms of adverse events (AEs) and their severity associated with maximum continuous exposure of MPH-LA for various time periods â‰¤6 months, >6 months, and >12 months. All patients' who were randomised at start of the core study were included in this analysis. A total of 341 and 354 patients were continuously exposed to MPH-LA for the duration of â‰¤6 months and >6 months, respectively, while 136 patients were continuously exposed to MPH-LA for the duration of >12 months, throughout the 66-week study.

Results

Most AEs reported in both the core and extension studies were mild-to-moderate in severity; core study MPH-LA vs placebo:28.3% vs 20.4%, mild; 42.0% vs 26.2%, moderate; and 11.1% vs 5.5%, severe and extension study 30.2%, mild; 34.9%, moderate; and 4.7%, severe. The overall incidence of AEs were 80.6% for â‰¤6 months, 85.3% for >6 months and with highest frequency of 88.2% for >12 months exposure group. The observed

increase in incidence of AEs was not greater than the relative increase in the duration of exposure. During the long-term exposure to MPH-LA (up to 12 months), the incidence of patients with AEs was comparable across the different time periods of continuous exposure for most system organ classes (SOCs) including cardiac disorders and did not show an increase in the number of patients reporting such AEs. A total of 9 (1.3%) and 2 (0.7%) SAEs were observed during the core and extension studies, respectively. None of these SAEs were suspected to be related to the study medication. No clinically meaningful changes were observed between exposure time-period groups with respect to laboratory findings, vital signs or ECGs. None of the patients had a QT, QTcB or QTcF â‰¥500 ms in the treatment exposure groups. No study related deaths were reported during this 66-week period.

Conclusions

The safety profile of MPH-LA did not change with the longer duration of treatment in adult patients with ADHD. The safety profile and AE incidence upon continuous exposure over the entire duration of core and extension studies were mostly comparable amongst the patients with exposure ranging from â‰¤6 months, >6 months and >12 months exposure to MPH-LA.

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QUALITY REQUIREMENTS: WHICH INITIATIVES ARE RELATED TO FINANCE AND COMPLIANCE (AND WHY IS IT ALL A PROBLEM)?

Lead Author: Steven W. Powell, M.D., M.P.H.

SUMMARY:

Session Objectives:

The number of Quality initiatives and Quality requirements that a healthcare facility is expected and often required to participate is growing exponentially. While Quality has often, although not always, had a place in most healthcare organizations, there is an immediate need to "move this up on the organizational chart." Historically, Quality initiatives were small, local programs that were intermittently measured or sustained. This is not meant to degrade past Quality initiatives, but meant to point out that Quality in the current healthcare environment is often tied directly to reimbursement and compliance. Many facilities are finding it hard to keep up with the increasing expectations in the Quality arena, often with no increase in funding or increase in staff. This often results in organizational Quality measurement, but no actual Quality improvement. When this happens, it completely undermines the tremendous amount of work that initially occurred in order to provide the data. An additional problem is that many facilities have either multiple data gathering systems in place, completely disjointed systems, and even manual chart extraction requirements that severely hamper the ability to provide real-time information. Funding is required to simply bring up the Quality infrastructure in many locations to the point that an effective system can be in place. It will benefit organizations to spend the necessary time and investment to gather, organize, and describe all current Quality initiatives, which will ultimately allow organizations to develop a strategic understanding and strategic plan. It may very well be the case that Quality initiatives that are not currently tied to finance, reimbursement, and compliance may need to be redirected or put on hold. A limited number of resources must be deployed to the most important and needed arenas. This exercise will also allow organizations to eventually restart programs that were initially placed on hold by redirecting or refining specific efforts into a direction that

aligns with the overall strategic Quality plan. Healthcare Quality should be undertaken with a strategic plan in place, with an understanding of financial and compliance implications, in order to appropriately improve the patient care deliver system.

MASS MEDIA INTERVENTIONS FOR PREVENTIVE MENTAL HEALTH, EARLY INTERVENTION & COMPREHENSIVE MANAGEMENT OF PSYCHOSOCIAL PROBLEMS

Lead Author: Avdesh Sharma, D.P.M., M.D.

SUMMARY:

Mental health and illnesses are a problem worldwide but each culture differs in its perception of the problem. Similarly, the available infrastructure and facilities for treatment and rehabilitation may vary widely within a country, especially in India with its diverse cultures, socio economic status and systems of medicine apart from socio cultural background.

The media response to the challenge of awareness about mental health and illnesses must encompass local informal means of mass communication (word of mouth; opinion of leaders and doctors; folklore; street plays etc.) to tools of information technology at small level (local newspapers, magazines and radio; cable operators etc.) to National and International level (National News papers; National channels of Radio and Television; Satellite channels; Internet etc.). Each of these medias serves a purpose as well as target populations and is a piece in the larger picture of successfully integrating awareness, treatment and rehabilitation in a stigma free society.

Mental health now is in news all the time and psychiatrists are being called upon to interact with the media (As a group, mental health professionals are most sought after and quoted). Handling Mass-Media is an art and we all need to utilize the tools available to us to bring about awareness in the population to go beyond treatment as well as to foster preventive health and demystify myths. The need is for us to be proactive and look for ways and opportunities to create awareness. It requires communication skills as well as understanding various medias to be able to harness them.

USING THE CANTAB BATTERY TO ASSESS THE COGNITIVE IMPAIRMENT IN CHILDREN AND ADOLESCENTS WITH PERINATAL HIV INFECTION IN POLAND

Lead Author: Anna Zielinska, M.D.
Co-Author(s): F. Pierowski, M.A., U. Coupland, M.D., M. Bielecki, Ph.D., T. Srebnicki, Ph.D., A.Brynska, M.D., Ph.D., M.Marczynska, M.D., Ph.D., T.Wolanczyk, M.D., Ph.D.

SUMMARY:

Introduction:
Possible pathogenesis of cognitive impairments in perinatally HIV infected children is related to the interaction of neurotoxic effects of HIV infection, perinatal exposure to HIV, and psychosocial factors. Previous research suggested impact on most of all language skills, attention, working memory and planning. The CANTAB battery had not been used before to assessed cognitive impairment in perinatally HIV-infected children.

Objectives:
The goal of the study was to assess the effects of perinatal HIV infection on the cognitive functions in children and adolescent in Poland and the utility of the CANTAB battery in these patients.

Methods:
The study was carried out in The Clinic of Infectious Diseases of Childhood in Warsaw's Hospital for Infectious Diseases. 45 vertically HIV-infected children, aged 6 to 18, were examined during one session. Patients completed the Cambridge Neuropsychological Test Automated Battery (CANTAB). The five CANTAB test

used included: Motor Screening Task (MOT), Reaction Time (RTI), Stocking of Cambridge (SOC), Intra/extra Dimensional Shift (IED), Spatial Working Memory (SWM). Results were compared to published age and gender-matched norms using z-scores. All the tests were performed using One-sample Wilcoxon Signed Rank test, verifying hypotheses that normalized scores' median is equal zero.

Results:
The results revealed significant impairment in a few of Cantab measures for infected group of patients.
The patients were impaired on movement time but not on reaction time in RTI test. They showed impaired initial and subsequent thinking time on the SOC task. They also solved less problems in minimum moves. The patients were also impaired on the task of attentional set shifting (IED), requiring more trials to criterion at the intradimensional stage of the task and had more total errors (adjusted) and more total trials (adjusted). In the SWM test they made significantly more within-search errors.

Conclusions:
The main deficits in vertically HIV infected children were in the tests of executive function: Stocking of Cambridge planning task, attentional set shifting, spatial working memory but also in the test of speed of movement. These are the test that have been shown to be particularly sensitive to frontostriatal dysfunction in humans. Further studies are required to recognize the multiple factors underlying cognitive impairments in vertically HIV infected children. The results are discussed in terms of the utility of the CANTAB battery for the assessment of cognitive impairment in this group of patients.

ASSOCIATION OF TRAIT ANXIETY WITH STATE ANXIETY AND ITS PREVALENCE IN ADOLESCENTS

Lead Author: Pamela Siller, M.D.

Co-Author(s): Shajiuddin Mohammed, M.D., M.P.H., Carmen Foley, M.D.

SUMMARY:
Aim: To examine the prevalence and recognition of state and trait anxiety in the adolescent psychiatric in-patient population.

Hypothesis: We hypothesized that state and trait anxiety have higher prevalence in the psychiatrically hospitalized adolescents and they are under-recognized in the community.

Methods: Data was collected randomly from 50 (36-male; 14-female) in-patient adolescent participants who met the inclusion and exclusion criteria at Zucker Hillside Hospital, New York. The inclusion criteria were a) Ages 14-17 years at the time of admission to the adolescent psychiatric unit, and b) Children who were literate enough to understand the questionnaire and the concept of Likert scale. The exclusion criteria were: a) Children who carried a diagnosis of mental retardation and, 2) Patients who were acutely psychotic and therefore unable to provide assent. The State Trait Anxiety Inventory (STAI) was used to measure the state and trait anxiety levels in the adolescents. The STAI is a 40 item self-report scale specifically designed to measure and distinguish between state and trait anxiety in the target population. This scale is validated for the adolescent population and has high internal consistency and high test-retest reliability. The results of the STAI were collected and subsequently analyzed and compared against the STAI scores within the general population obtained from STAI manual. After each patient was discharged, the admission and discharge diagnoses and the patient's discharge medications were obtained from the electronic medical record, and compared with the patient's STAI score. The results were analyzed to determine whether a high trait anxiety level

had been reflected by documented anxiety disorder being diagnosed at admission or discharge.

Results: The results of the study showed that a reciprocal relationship exist between the state and trait anxiety (f =46.8; p=0.00) and the presence of state anxiety was predictive of trait anxiety and vice versa. On pearson correlation analysis, state (p=0.76) and trait anxiety (p=0.07) were not significantly correlated to the admission or discharge diagnoses of anxiety disorders. On descriptive analysis it was found that state anxiety (mean=0.58; SD=0.3) and trait anxiety (mean=0.72; SD=0.3)

Conclusion: According to literature strong association has been shown between panic disorders and suicide attempt than between depression and suicide attempt. According to our study in-patient adolescents tend to have higher state and trait anxiety when compared to general population of their age group. The presence of one type of anxiety will predict the co-occurrence of other. Hence the assessment of state and trait anxiety should be made mandatory on initial assessment of adolescents in the in-patient unit in deciding therapeutic interventions, regardless of their diagnosis.

AN HISTORICAL REVIEW OF PSYCHIATRIC INPATIENT ADMISSIONS TO ST. ANDREW'S, NORTHAMPTON

Lead Author: Elvina M Chu, B.Sc., M.B.B.S., Ph.D.
Co-Author(s): Vijay Harbishettar DPM, MRCPsych, MMedSci

SUMMARY:

Background: St Andrews is an independent, charitable hospital in Northampton which has been caring for psychiatric patients in England since 1838. The objective of this study was to investigate documented admission assessments spanning the history of the charity.

Methods: This study was based on retrospective case note review of patient records. Data was obtained via documentation in the hospital archives, register of admission and medical records. Demographics, admission, discharge, presenting complaint, medical and psychiatric history were gathered. Patients were chosen for inclusion to the study by selecting the first two documented admissions at 50 year intervals in 1838, 1888, 1938 and 1988.

Results: Of 8 patient records reviewed 3 were male, age 24-72 (median 48) years, with 6 private and 2 pauper admissions. They spanned a range of social backgrounds, including solicitors, labourers and unemployed. Sources of referral included family, surgeons or doctors. Patients were admitted from a wide geographical area, including neighbouring counties. Half (50%) had a past psychiatric history, 2 had at least one previous psychiatric admission. Symptom duration prior to current admission ranged from 5 months to 30 years. Symptoms on admission included: Numerous "attacks" of fits of excitement; change in temperament, quarrelsome, ideas of wife's infidelity; suspicious, restless; untidy, dirty, destructive, assaulted and abused wife; strange ideas, wandering around undressed, untidy and jovial, over-talkative, seeking company.

Admission ranged from 3 days to 14 years (median 3 months). Two elderly long-stay patients died, 5 were discharged and 1 transferred to another hospital. Diagnoses included: Fits of excitement; cerebral excitement from drink and the weather, accidents to the head; chronic mania; general paralysis and mania; insanity occurring later in life - primary dementia; alternating insanity; anxiety state and alcohol dependent syndrome.

Key features of the illness presentation were well documented even in the 1800s and features of psychiatric illness such as suicide risk and violence were noted in the patient register. By 1888 harm to self and others were also specifically documented. In the 1930s a basic diagnostic formulation with multi-axial codes was in use. There was evidence of behavioral treatment methods already being employed in 1838 and occupational therapy related activities were encouraged e.g. knitting, sewing, cleaning. Terms such as 'fits' and 'attacks' were frequently used even in the absence of epileptic seizures and by 1888 the term 'mania' was recognised.

Conclusions: This study examines the evolution of psychiatric in-patient admissions to St Andrew's. Contrary to the myth that asylums were places where the mentally ill were permanently isolated or segregated from the community, it appears that patients were systematically assessed and often discharged "relieved" or "recovered" from their condition.

EMOTIONS, LEARNING AND TECHNOLOGIES. THE EDUCATIVE STATE OF ART.

Lead Author: Enrico Bocciolesi, M.Ed., Ph.D.

SUMMARY:
Many students today are called " natives" , are typical of the era of digital . It delegates the responsibility for education from kindergarten to the television screen , with the difference that the first allows a comparison , the second makes us passive recipients . Rather than adapt to a specific context , and unfavorable privative , you need to see how all this technological use modifies the interaction with others , confrontation , debate , emotions and creativity in learning.

TOLERABILITY AND EFFECTIVENESS OF ASENAPINE IN BIPOLAR DISORDER: LESSONS FROM THE EXPASEN STUDY

Lead Author: Eduard Vieta, M.D., Ph.D.
Co-Author(s): Diego Hidalgo-Mazzei, M.D., Juan Udurraga, M.D., Ph.D., Andrea Murru, M.D., Ph.D., Iria Grande, M.D., Ph.D., Ana GonzÃ¡lez-Pinto M.D., Ph.D., Consuelo De Dios, M.D., Jose M. Montes, M.D., Eduard Vieta, M.D., Ph.D..

SUMMARY:
Introduction: Bipolar disorder affects approximately 1,5% of the world population. It is characterized by relapsing and remitting mood phases, such as manic or depressive episodes as well as periods of subsyndromal symptoms or clinical stability. There is strong evidence derived from randomized, placebo-controlled trials, supporting the use of lithium, anticonvulsants such as valproate and carbamazepine, and most antipsychotics in acute mania. In addition,there is a limited number of antipsychotics available, yet their effectiveness and adverse effects profiles are diverse.Asenapine is a new atypical antipsychotic that has been approved for the acute treatment of mania in bipolar type-I disorder by both the FDA and the EMA, and for the treatment of schizophrenia by the FDA.Its mechanism of action and efficacy is thought to be mediated by its high affinity for multiple dopaminergic, serotonergic and noradrenergic receptors. The first clinical trials showed its effectiveness and tolerability, and a reasonable cost-effectiveness relation compared to other antipsychotics.However, few studies have been done in real-world clinical settings.
Objective: The aim of this study was to evaluate the effectiveness and tolerability of asenapine in bipolar patients in a naturalistic clinical setting. Method: We retrospectively examined the clinical records of 94 systematically followed-up adult patients who received asenapine in four selected Spanish reference centers. We assessed sociodemographic variables and tolerability as well as clinical severity through routinely used evaluation scales (Young Mania Rating Scale (YMRS),17-item

Hamilton Depression Rating Scale(HDRS-17)).
Results:The mean age of the sample was 45 years old, with 62.8% females. Seventy-seven patients (82%) met diagnostic criteria for either bipolar disorder I, II or not otherwise specified according to DSM-IV TR criteria.Within the subgroup of bipolar disorder patients, 53% had an acute manic episode, 6% hypomanic, about one third had an acute depressive episode and 13% presented mixed symptoms at the time of the first evaluation. The mean score reduction in YMRS in manic and hypomanic patients were 15.7(sd=11.6, t= 8.7, p<.001) and 4.2(sd=10.6, t=0.9, p .426),respectively. Among patients with depressive episodes the mean reduction of HDRS was 8.5(sd=7.9, t=5.2, p=<.001), while mixed patients had a mean reduction of 10.8 at the HDRS(sd=4.8, t=7.0, p=<.001) and 13.6 at the YMRS(sd=7.7, t=5.5, p=<.001). The most frequently reported adverse events were somnolence(29.8%), dysgeusia(28.7%), oral hypoaesthesia(17%), dizziness(16%) and anxiety(12.8%).
Conclusions:Though asenapine has an indication for acute manic episodes in bipolar disorder, the present study suggests that it can also have a role in treating depressive and mixed states in a real world setting. In addition, it has good tolerability.Limitations include the open label design and the use of other concomitant medications.

THE USE OF CANNABIS AS A PREDICTOR OF EARLY ONSET AND SUICIDE ATTEMPTS IN BIPOLAR DISORDER: A REVIEW

Lead Author: Fabio Gomes de Matos e Souza, M.D., Ph.D.
Co-Author(s): Joao Paulo Nascimento, M.S., Rafaela Leite, M.S., Sarah Nogueira, Laisa Lima, Tais Bastos, Mariana Virginio, Lucas Moreno, M.S., Bruno Sampaio, Fabio Souza, Ph.D.

SUMMARY:

Introduction: Bipolar Disorder (BD) implies risk of suicide. The age at onset (AAO) of BD carries prognostic significance. Substance abuse may precede the onset of BD and cannabis is the most common illicit drug used. The main goal of this study is to review the association of cannabis use as a risk factor for early onset of BD and for suicide attempts.
Matherial and Methods: PubMed database was searched for articles using key words "bipolar disorder", "suicide attempts", "cannabis", "marijuana", "early age at onset" and "early onset".
Results: The following percentages in bipolar patients were found: suicide attempts 3.6-42%; suicide attempts and substance use 5-60%; suicide attempts and cannabis use 15-42%. An early AAO was associated with cannabis misuse. The mean age of the first manic episode in individuals with and without BD and Cannabis Use Disorder (CUD) was 19.5 and 25.1 years, respectively. The first depressive episode, 18.5 and 24.4 years, respectively. Individuals misusing cannabis showed increased risk of suicide.
Discussion: Cannabis use is associated with increased risk of suicide attempts as well as early AAO. However, it is not clear if the effect of cannabis at the AAO and suicide attempts are independent of each other.

INFANT SLEEP AND DEVELOPMENT: THE IMPACT OF INFANT SLEEP IN THE FIRST YEAR OF LIFE ON DEVELOPMENT AT 12 MONTHS OF AGE

Lead Author: Hannah Fiedler, B.A.
Co-Author(s): Ron Rapee, Ph.D., Delyse Hutchinson, Ph.D

SUMMARY:

Introduction and Aims: The importance of sleep for young children has been well documented. Many studies suggest that sleep quality plays a crucial role in the cognitive and physical development of a young child. To date most studies focus on the early post-natal period or the later pre-

school years. Few studies focus on the sleep patterns of infants across the first year of life, and specifically at 12 months of age. Given the important role sleep plays in executive functioning, it is important to also study child sleep patterns in the critical early developmental window when a child often reaches important milestones such as walking and talking. The current study uses data from a large longitudinal pregnancy cohort, which examines the impact of psychosocial factors on infant development and family functioning. The aim of the current study is to examine the predictive relationship between infant sleep patterns from birth to 12 months of age, on infant development at 12 months of age.

Design and Methods: Pregnant women were recruited through general antenatal services in New South Wales, Australia, and interviewed during pregnancy, at infant age eight weeks, and infant age 12 months. Information was gathered from mothers on demographics, mental health (Depression Anxiety and Stress Scales and Edinburgh Depression Scale) and infant sleep (adapted from Brief Infant Sleep Questionnaire). When children were 12 months old the Bayley Scales of Infant and Toddler Development (BSID-III) were administered. The BSID-III scales are the international gold standard measure of infant and child development. The scales comprise a clinically administered assessment of child cognition, language and motor development, social-emotional functioning and adaptive behaviour.
Results: Data on 450 infants has been collected. Analyses will examine the association between infant sleep from birth to 12 months and child scores on the BSID - III at 12 months of age. Possible covariates of maternal mental health, socio-economic status and other siblings will also be examined.
Discussion and Conclusions: Data on the extent to which infant development at age 12 months is related to and/or predicted by infant sleep in the first year of life will be presented. These results will be discussed over time, comparing infant sleep patterns at birth - eight weeks, two - six months, six - nine months, and nine - 12 months to get a wider understanding of the nature of the association between sleep and development. The results of the current study lead the way for the emergence of important information on sleep patterns and development of infants. This research, will in turn, have important practical implications for public health assessment and strategies, and the wellbeing of parents and young infants.

UNDERSTANDING THE PSYCHOSOCIAL ASPECTS IN SURVIVORS OF ADOLESCENT ACUTE LYMPHOBLASTIC LEUKEMIA: A REVIEW OF THE LITERATURE

Lead Author: Priyanka Saigal, M.D.
Co-Author(s): Vishal Madaan, M.D.

SUMMARY:

Introduction: Acute Lymphoblastic Leukemia (ALL) is the most common pediatric malignancy, accounting for one-third of all cancer diagnoses in children under 14. Treatment aims at maximizing long-term survival while minimizing adverse effects of chemotherapy. While there are distinct protocols for treating adults and children, psychosocial aspects of treatment of adolescents and young adults with ALL have received little attention.

Methods: A review of the available literature on the psychosocial factors in ALL in adolescents and young adults was conducted using PubMed and UptodateÂ® databases. Emphasis was laid on understanding factors that impact medical and psychological prognosis.

Results: Even though much of the literature suggests that adolescent cancer survivors may have more stressors later in life compared to their healthy peers, available research on the long-term psychosocial effects is inconsistent. It is fairly well known

that the immediate reaction to a diagnosis of a cancer depends on the age and cognitive maturity of the child. Furthermore, studies suggest that patients diagnosed in early childhood often fare better psychosocially than the older children and teenagers, although little is known about how age at diagnosis impacts long-term adjustment. Previous research has indicated that most childhood ALL survivors adjust well and as a result, no significant differences in measures of emotional well-being were found between them and their peers. However, more recent research describes how treatment with systemic chemotherapy for CNS prophylaxis may result in impaired neurocognitive functioning in a subset of ALL survivors. Particularly a reduction in cortical white matter volume has been reported, especially in the right prefrontal cortex. In fact, one specific functional neuroimaging study demonstrated that chemotherapy may reduce interconnectivity in the brains of some ALL survivors, which in turn may cause decreased cognitive performance effecting global intelligence, working memory, visual color perception and response inhibition. In addition, testicular irradiation has also been shown to decrease the quality of life (QOL) in male ALL survivors. The limited research available on the topic suggests that risk factors for psychological distress secondary to cancer may include cranial irradiation, poor physical health, female sex and low perceived parental support.

Conclusions: There is a paucity of research of the psychosocial factors involved in diagnosing and treating adolescents and young adults with ALL, and how such factors may mediate the overall prognosis of the illness. Among other factors, use of cranial irradiation and limited support from parents may contribute to a poorer psychological prognosis.

PARRICIDE

Lead Author: Mehnaz Waseem, M.D.

Co-Author(s): Shazia Iqbal, M.D., Edward G Hall M.D., Asghar Hossain, M.D.

SUMMARY:

INTRODUCTION:

Domestic violence, as believed to involve adults & children, has rather taken an alarming trend featuring juveniles being involved as offenders in many cases. Apart from the general identification of adults being culprits and children victims, increasing rates of parricide, matricides and patricides are making the domestic violence a vicious loop. Contemporary trends depict a receding inclination of adults towards committing acts of violence; however, the number of murders committed by juveniles is creeping up at a steady pace. Prominent among the murders committed by juveniles are the cases of parricide. Parricide in layman's terms pertains to the killing of one's parents.Explicitly, killing ones mother is called matricide while killing the father is distinguished as patricide. Based on demographic data pertaining to United States, Alexia Cooper and Erica L. Smith (2011), in a report for Department of Justice, established that there has been an increase in the reported parricide from 9.7% in 1980 to 13% in 2008(7). In totality, Parricide accounts up for 2-6% of all homicides in western countries.Researchers have been paying explicit attention to the etiology, prosecution, and treatment of these offenders.

OBJECTIVE:

The objective of this literature review is to explore the underlying etiological factors that lead youth to commit such type of crimes and what interventions could be implemented to prevent them.

METHODOLOGY:

Extensive review at PUBMED, Google Scholar and Open Access articles searching for key words Parricide,

patricide, and matricide made the basis of this literature review.

DISCUSSION:

Parricides have been a focus of research lately and within, more attention has been laid upon juveniles who are being involved in such killings.Researchers are focusing upon profiling these acts from juveniles to understand the reasoning behind such acts.Kathleene Heide categorized parricide offenders into three primary types: the severely abused child, the dangerously antisocial child, and the severely mentally ill child.Children and adolescents are most likely to kill to end abuse or to get their own way.

A 1989 statistics report on homicides recorded 21,500 instances, of which 344 instances were categorized as parricides. Sons had been more likely to kill fathers, than daughters killing their mothers.

CONCLUSION:

As the evidence from research conducted by various sources indicate that rate of parricide is increasing & most of the subjects are suffering from mental illness,antisocial personality disorders or are subject to mental or physical abuse. It will be important that children and young adults be provided more social support & access to mental health facilities.It is mandatory to explore the specific features of their psychopathology, differences in the course of illness, compliance and any other risk factors such as access to firearms be regulated in order to prevent fatal outcome.

MONITORING OF PHYSICAL HEALTH PARAMETERS FOR INPATIENTS ON A CHILD AND ADOLESCENT MENTAL HEALTH UNIT, RECEIVING REGULAR ANTIPSYCHOTIC THERAPY

Lead Author: Nida Pasha, B.Sc., M.B.B.S.

SUMMARY:

Physical health monitoring of patients receiving antipsychotics is vital. Overall it is estimated that individuals suffering with conditions like schizophrenia have a 20% shorter life expectancy than the average population (1) moreover antipsychotic use has been linked to a number of conditions including: diabetes (2), obesity (3), cardiovascular disease (4).

The severity of possible adverse effects to antipsychotics in adults has raised awareness of the importance of monitoring physical health in this population. There is little literature available as to the adverse effects of these medications in the child and adolescent community which make physical health monitoring in this predominantly antipsychotic naÃ¯ve population even more important. The UK expert consensus meeting has laid down recommendations in regards to screening and management of adult patients receiving antipsychotics however no specific guidelines have been put in place for the child and adolescent group (5). This lack of consensus regarding which health parameters need to monitored has no doubt been a major obstacle in improving physical health monitoring in this age group.

To establish whether in-patients receiving antipsychotics had the following investigations pre-treatment, 6 weeks and 12 weeks after treatment initiation; body mass index, hip-waist circumference, blood pressure, ECG, Urea & electrolytes, full blood count, lipid profile, random glucose level, liver function test and prolactin. In addition to a pre-treatment VTE risk assessment. These standards were derived from local trust guidelines, NICE guidelines on Schizophrenia (6) and The Maudsley Prescribing Guidelines (7).

We retrospectively reviewed 33 electronic case notes in total, of which 18 cases were post intervention. Intervention included education of professionals involved in the monitoring of such parameters. A simple one page monitoring tool was devised based on local trust guidelines, NICE guidelines on Schizophrenia and The

Maudsley Prescribing Guidelines. This tool was filed in patients the Physical Health Files of patients receiving antipsychotics which was intended as a prompt to doctors regarding their patient's need for physical monitoring. Following this intervention re-audit occurred after 6 months of the initial audit to establish whether there was any change in clinical practice.
Overall performance in monitoring physical health parameters was initially poor however we were able to demonstrate that with the help of a single prompt sheet there was a significant improvement following post intervention audit for most of the tests the only exceptions were ECG and height waste circumference. This can be explained by the fact that local trust guidelines for this in patient facility advised routine ECG for all in-patients in addition to a height weights circumference to be done on admission for patients.

ASSOCIATION BETWEEN DIETARY PATTERN AND SLEEP QUALITY AMONG PRE-ADOLESCENTS IN TAIWAN

Lead Author: Hao-Jan Yang, Ph.D.
Co-Author(s): Chiao-Mei Tsai, M.S.

SUMMARY:
Objectives: To investigate the relationship between diet preference and sleep quality in Taiwanese preadolescents. The moderating effects of gender and grade in this relationship were estimated as well. Methods: A total of 441 5th and 7th graders were randomly selected from 26 public elementary and junior high schools in central Taiwan. Diet preference was indexed by frequency of punctual to eat three meals and food preferences. Sleep quality of all participants was measured by the Pittsburgh Sleep Quality Index (PSQI), and was divided into two categories in terms of good (PSQIâ‰¤5) and bad (PSQI>5) when examining its relationship with punctual to eat three meals and food preferences in univariate analyses and multivariate analyses. Interactions between gender, grade and diet variables were tested in multiple regression models to explore possible moderating effects. Results: Schoolchildren's punctual to eat three meals and food preferences are related to sleep quality. Punctual to eat three meals and preferring to eat vegetable and milk products are good for sleep quality in preadolescents. Grade and gender do not affect the sleep quality, but grades may interact with punctual to eat three meals to affect sleep quality. Conclusions: Parents should pay attention to children's diet time, and provide more vegetables and milk products, to improve children's sleep quality. Schools should also consider providing more vegetable and milk products in children's lunch.

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THE EVIDENT-TRIAL: A MULTICENTER, RANDOMIZED CONTROLLED TRIAL TESTING THE EFFECTIVENESS OF AN ONLINE-BASED PSYCHOLOGICAL INTERVENTION

Lead Author: Jan Philipp Klein, M.D.
Co-Author(s): Thomas Berger, Johanna SchrÃ¶der, Christina SpÃ¤th, BjÃ¶rn Meyer, Franz Caspar, Wolfgang Lutz, Wolfgang Greiner, Martin Hautzinger, Matthias Rose, Fritz Hohagen, Gerhard Andersson, Eik Vettorazzi, Steffen Moritz

SUMMARY:
Background: Depressive disorders are among the leading causes of worldwide disability with mild to moderate forms of depression being particularly common. Low-intensity treatments such as online psychological treatments may be an effective way to treat mild to moderate depressive symptoms and prevent the emergence or relapse of major depression.

Design: This study is a multicentre parallel-groups pragmatic randomized-controlled single-blind trial. A total of 1013 participants with mild to moderate symptoms of depression from various settings including in- and outpatient services have been randomized to an online

psychological treatment or care as usual (CAU). We hypothesize that the intervention will be superior to CAU in reducing depressive symptoms assessed with the Personal Health Questionnaire (PHQ-9, primary outcome measure) following the intervention (12 wks) and at follow-up (24 and 48 wks).

Results: the results of the 12wks and 24 wks assessment are currently analysed and will be presented.

Discussion: The study will yield meaningful answers to the question of whether online psychological treatment can contribute to the effective and efficient prevention and treatment of mild to moderate depression on a population level with a low barrier to entry.

THE EVIDENT-TRIAL: A MULTICENTER RCT TESTING THE EFFECTIVENESS OF AN INTERNET-BASED PSYCHOLOGICAL INTERVENTION FOR MILD TO MODERATE DEPRESSION

Lead Author: Philipp Klein, M.D.
Co-Author(s): Thomas Berger, Johanna SchrÃ¶der, Christina SpÃ¤th, BjÃ¶rn Meyer, Franz Caspar, Wolfgang Lutz, Wolfgang Greiner, Martin Hautzinger, Matthias Rose, Fritz Hohagen, Gerhard Andersson, Eik Vettorazzi, Steffen Moritz

SUMMARY:
Background: Depressive disorders are among the leading causes of worldwide disability with mild to moderate forms of depression being particularly common. Low-intensity approaches such as online psychological interventions may be an effective way to treat mild to moderate depressive symptoms and
prevent the emergence or relapse of major depression.
Design: This study is a multicentre parallel-groups pragmatic randomized-controlled single-blind trial. A total of 1013 participants with mild to moderate symptoms of depression from various settings including in- and outpatient services were randomized to an online psychological treatment or care as usual (CAU). We hypothesize that the intervention will be superior to CAU in reducing depressive symptoms assessed with the Personal Health Questionnaire (PHQ-9, primary outcome measure) following the intervention (12 wks) and at follow-up (24 and 48 wks).
Results: The results of the 12wks and 24 wks assessment are currently being analyzed and will be presented.
Discussion: The study is expected to yield meaningful answers to the question of whether online psychological treatment can contribute to the effective and efficient
prevention and treatment of mild to moderate depression on a population level with a low barrier to entry.

CLINICAL AND BIOLOGICAL EFFECTS OF COGNITIVE THERAPY IN THE REGULATION OF THE HPA AXIS IN PATIENTS WITH GENERALIZED ANXIETY DISORDER

Lead Author: Gustavo E. Tafet, M.D., M.Sc., Ph.D.
Co-Author(s): Diego J. Feder, Ph.D.

SUMMARY:
The role of stress in the origin and development of depression has been extensively studied. At the psychological level, it has been demonstrated that chronic stress plays a critical role in the development of cognitive vulnerability which predisposes to develop depressive symptoms. Regarding the psychoneuroendocrinological perspective, chronic stress produces dysregulation of the HPA axis, with the resulting increase in CRF and cortisol levels, and an array of neurobiological consequences, including alterations in neurotransmitter systems, such as the serotonergic system, and neurotrophin mediated neuroplasticity, which represent potential links between chronic stress and the origin and development of depression. We therefore

investigated the efficacy of cognitive therapy (CT) in the treatment of a population of patients with chronic stress as it would be reflected through both psychological and psychoneuroendocrinological parameters. Patients with generalized anxiety disorder (GAD), which represents the most commonly diagnosed chronic stress disorder in our country, were treated with CT for up to a maximum of 24 sessions. Anxiety-related symptoms were evaluated according to the Hamilton Anxiety Rating Scale (HAMâ€“A), and the hypothalamic-pituitary-adrenal (HPA) function was determined through assessment of circulating cortisol levels. A significant decrease in the HAMâ€“A scores, along with significant changes in plasma cortisol levels, were observed after completion of treatment with CT. These observations contribute to demonstrate the potential efficacy of CT, not only to successfully treat patients with certain chronic stress conditions, such as GAD, but also as a potential strategy to prevent the development of mood disorders in vulnerable individuals.

FROM THE JOYSTICK TO THE TRIGGER: INFLUENCE OF VIOLENT VIDEO GAMES ON CRIME

Lead Author: GaÃ«l Fournis, D.M.
Co-Author(s): Nidal Nabhan-Abou, M.D., Manuel Orsat, M.D., Jean-Bernard GarrÃ©, M.D, Ph.D, BÃ©nÃ©dicte Gohier, M.D, Ph.D.

SUMMARY:

The influence of violent video games on behavior is the subject of heated debate based on conflicting scientific data. Since the arrival of increasingly violent video games, and the media coverage attracted by several mass killings such as those of Columbine, Virginia Tech, Utoya, or Aurora, an emotional debate has developed, concerning the impact of video games on aggressiveness, violence or even criminality. Several recent meta-analyses have contributed contradictory findings. Whereas, with respect to the use of video games, some studies conclude that there has been an increase in aggressiveness in the short and long term, others have revealed a decrease in criminality. The findings of previous studies are overwhelmingly in favor of a negative influence on aggressiveness. However, data on the impact of this type of media on criminal behavior is lacking. This work aims to bring new arguments to corroborate or invalidate the assumption that the use of violent video games is a criminogenic risk factor. We conducted a case-control study, comparing the use of violent video games in a sample of 83 subjects under investigation, versus a sample from the general population. After characterizing their consumption patterns of video games, we looked for an association between the criminal act and exposure to violent video games. Univariate and multivariate analysis were conducted. The proportion of players in subjects under investigation, including consumers of violent video games, was lower than that observed in control subjects. In addition, we did not find any significant difference between the consumption patterns of violent video games in criminal population or in control population. Finally, the estimated relative risk of criminal enactment associated with the use of video games was not significant. With multivariate analysis, taking into account the association of already known criminogenic risk factors, we did not find a significant excess risk associated with the use of violent video games. Our results are consistent with the current literature. Until then, many studies suggest that, despite an increase in aggressiveness, violence in video games could be the cause of a reduction in criminality. The research on this hot topic is still inconsistent and thus psychiatrist may wish to be more careful in their public statements linking violent digital games to harm. Psychiatrists, medical professionals and researchers would risk damaging our credibility by exaggerating

video game violence effects. There is indeed a lack of scientific data dealing with the relationship between violent video games and this interaction between the individual's mental state and aggressive outcome. The results of our study are not in favor of the accountability of violent video games on the criminal act. Our conclusion leans to not consider their use as a criminogenic risk factor. The results are discussed in light of current literature.

COST EFFECTIVE MODEL OF TELE-PSYCHIATRY IN A LIMITED RESOURCE SETTING IN INDIA

Poster Presenter: Sabina Rao, M.D.
Co-Author(s): SABINA RAO, M.D., SURESH BADA MATH, M.D., NAVEEN KUMAR C, M.D., MATHEW VARGHESE, M.D.

SUMMARY:
Tele-medicine is an effective method to deliver health services in remote places. The usage of tele-psychiatry as a model for cost effective health care delivery in India is minimal.
We present a model of tele-psychiatry consultation that is effective in a limited resource setting.
The end user of our tele-psychiatry model is the Nirashritra Parihara Kendra (NPK). It is an organization, which houses incarcerated beggars, arrested according to the Indian laws in South India. The facility has 700 inmates of which 350 suffer from mental illness of very long duration. The facility has only a doctor & two nurses at any point of time to attend the inmates. The facility was served by the community psychiatry team of the National Institute of Mental Health And Neuro Sciences (NIMHANS) as an out-reach clinic twice a month.
With increasing number of admissions, it was felt that routine visit & consultation will not be enough for the patients, with some needing more attention-special populations. The treating team of the organization, both the medical & nursing were trained in using telemedicine using Skype Video Conferencing. They were also given training regarding the clinical features of mental illness. All the patients are assessed in details initially in person by the psychiatry team & telepsychiatry is a secondary consult of follow-up patients in real time. No patient is assessed the first time by this portal.
The model is well accepted by the treating team & patients of NPK. The clinical outcomes so far have been good. About 15-20% of patients have been placed back into their homes.

WHICH CAME FIRST, THE CHICKEN OR THE EGG? CORTISOL RESPONSE PATTERNS IN DEPRESSED WOMEN AND THEIR HEALTHY DAUGHTERS

Lead Author: Ali Saffet Gonul, M.D.
Co-Author(s): Sevki Cetinkalp M.D.; Sebnem Tunay, PhD.; Irmak Polat , M.D.; Fatma Simsek, M.D.; Burcu Aksoy BSc; Kerry L. Coburn, Ph.D.

SUMMARY:
A dysfunctional hypothalamic pituitary adrenal (HPA) axis is widely accepted as a significant pathophysiological aspect of Major Depressive Disorder (MDD). Despite studies suggesting that a dysfunctional HPA axis might be present before the clinical syndrome becomes apperant, the functioning of the HPA axis in highâ€“risk populations has not been well-defined. The aim of the present study was to investigate the HPA axis functioning of mothers suffering from MDD and their healthy daughters comparedto age- and sex-matched healthy controls. This design allowed comparison of HPA axis functional differences among daughter and mother groups. HPA axis function was evaluated with the dexamethasone/CRH (DEX/CRH) test, which was performed after obtaining the diurnal ACTH and cortisol values at 8:00, 16:00 and 23:00 hours. We found that MDD mothers and their daughters had low morning cortisol and the MDD mothers additionally had low morning ACTH compared to controls. Dexamethasone

suppressed both cortisol and ACTH in all groups and the cortisol suppression in the MDD mothers was greater than in the control mothers. Subsequent HPA axis stimulation by CRH evoked a lower cortisol response but a higher ACTH response among subjects carrying a high genetic load for depression (MDD mothers and their high-risk daughters)) compared to controls. This pattern of results, showing clear abnormalities in MDD mothers but less clear abnormalities in their high-risk daughters, may indicate that the high-risk daughters' HPA axes were beginning to show premorbid dysfunction.

FAMILY PSYCHOEDUCATION TO REDUCE THE RISK OF NEW DEPRESSIVE EPISODES: A RANDOMIZED CONTROLLED TRIAL

Lead Author: Claudio Csillag, MD PhD
Co-Author(s): Stephen Austin, PsyM, Ph.D., August Wang MD, Per Bech MD, DMSc, Claudio Csillag, MD, Ph.D.

SUMMARY:

Background
More than 80 % of patients experiencing their first depressive episode will have at least one new episode. Effective interventions to reduce the risk of relapse and recurrence are needed.
Psychoeducation is a form of interactive education enhancing knowledge about patients' illness, including its course, symptoms and treatment. Psychoeducational methods can also act as family intervention which already is an evidence-based practice in schizophrenia and bipolar disorder.
In spite of unipolar depression's high prevalence, only few studies have focused on the effect of psychoeducation, including family psychoeducation, in the prevention of new depressive episodes.
Relapse and remission in depression can be measured using the Hamilton Depression Scale (HAM-D17) Items on this scale can be divided into 3 psychometric subtypes: Domain "A" covers core depressive items (HAM-D6), Domain "B" covers the unspecific arousal items, and Domain "C" covers "suicidal thoughts and lack of insight".

Purpose
The purpose of this study is to evaluate whether an intervention consisting of psychoeducation for family members, compared to a control intervention, is effective in reducing the risk of new depressive episodes among patients that have achieved remission or partial remission of depressive symptoms after the acute phase of antidepressive treatment.
The study will also investigate whether the different psychometric subtypes of depression respond differently to psychoeducation.

Method
The project is based on a double-centre, randomized controlled trial where investigator and raters conducting psychometric assessments, will be blinded to treatment allocation. A total of 90 patients with unipolar depression in remission or partial remission will be included together with their closest relative. After baseline assessments, relatives will be randomized to either 4 sessions of a family psychoeducation program or 4 sessions in a social support group without any psychoeducational intervention. Patients will not participate in group sessions and they will continue their outpatient-treatment as usual.

Outcome
Patients and family members will be assessed multiple times during the study period.
Primary outcome is evaluated after 9 months and include rates of relapse as measured by HAM-D17 and rates of recurrence according to DMS-VI-R and HAM-D17.

Clinical implications

It is hoped that this study will identify a brief and cost effective intervention that can reduce the risk of relapse in depression and be readily implemented in a range of mental health settings.

PERSONALITY TRAITS ASSOCIATED WITH SUICIDAL BEHAVIORS IN PATIENTS WITH DEPRESSION: THE CRESCEND STUDY

Lead Author: Tae-Youn Jun
Co-Author(s): Ho-Jun Seo, MD, PhD

SUMMARY:
The aim of the current study was to identify personality traits associated with suicidal behavior in patients with depression. Of the 1183 patients screened for an observational cohort study of depression, 334 (28.2%) who completed the Temperament and Character Inventory (TCI) were included in these analyses. To minimize the effect of current mood state, the TCI was performed 12 weeks after initiation of treatment, and we adjusted for the severity of depression. Of the 344 participants, 59 had a lifetime history of at least one suicide attempt, 37 a lifetime history of multiple suicide attempts, 5 attempted suicide during the 12-week study period. At baseline, patients wtih a lifetime history of at least one suicide attempt, a lifetime history of multiple suicide attempts, and a suicide attempt during the study period expressed more serious current suicidal ideation than did those without such a history, despite the absence of differences among the groups in the severity of depressive and anxiety symptoms. Of the seven personality scales of the TCI, lower scores on the self-directedness scale of the character dimension were associated with a history of at least one suicide attempt (OR 0.91, <0.001), a history of multiple suicide attempts (OR 0.91, p=0.003), and suicide attempts during study period (0.80, p=0.006). These findings suggest that depressed patients with a history of suicidal behavior differ from non-attempters with regard to personality traits, especially the character dimension of self-directedness. It is noteworthy that this result emerged after controlling for the effect of current mood state.

AN EVALUATION OF THE USE OF DESVENLAFAXINE: OUR EXPERIENCE IN AN OUTPATIENT CLINIC LOCATED IN ZAMORA, SPAIN

Lead Author: Alberto San RomÃ¡n, M.D.
Co-Author(s): MÂª Lorena BartolomÃ©, M.D., Ph.D., MÂª de la ConcepciÃ³n Gelado MatellÃ¡n, M.D., M. Ã ngel Franco MartÃn, M.D., Ph.D.

SUMMARY:
INTRODUCTION Desvenlafaxine (DV) succinate is a recent SNRI antidepressant drug.DV is O-desmethylvenlafaxine,the principal active metabolite of venlafaxine,formed by the action of CYP2D6 on the parent drug.In February 2008, DV was approved for the treatment of depression by the FDA in the USA.DV is only approved for MDD

METHODS We report a case series of the use of DV in treament of both indications,approved and unapproved uses, in an Outpatient clinic located in Zamora,Spain. Adult patients were identified from the public health records,both male and female, who are 18 years of age or older,with MDD or other diagnosis as generalized anxiety disorder,persistent depressive disorder or panic disorder;with a Diagnostic and Statistical Manual of Mental Disorders,Fifth Edition,APA,2013.
All patients were admitted from a Psychiatric outpatient clinic at Zamora, Castilla y LeÃ³n, Spain. 25 patients were treated with DV.5 patients were naÃ¯ve of antidepresive treatment. 3 were naÃ¯ve of any psychopharmacology treatment. The switch to DV took place because of non response to previous antidepresive treament.
The dose range was 50-200mg and the duration of treament was 6 months. Eligible

patients were included in a 50mg daily doses of DV, treatment which lasted up to 6 months. Patients completing Visits 2 through Month 6 will were considered treatment completion. All included patients who prematurely discontinued from the study, regardless of cause, were seen for a final assessment at early termination(ET)

Prior and Concomitant Therapy
A complete list of medications for either episodic or chronic use were recorded in every visit throughout the duration of the study. All concomitant medications were allowed under realworld naturalistic conditions with the exception of the drugs included in the exclusion criteria.

Specific Measures for publication
Antidepressant efficacy by itself, in concomitant therapy and with or without medical and psychiatry co morbidities
BP and HR variations in a naturalistic setting
Adverse events.Adverse events were recorded throughout the study.
Significant changes in laboratory assessments
Sexual Adverse Events(ASEX)
Changes in disability and quality of life
Hamilton Depression Rating Scale(HAMD17)
Manic Switch induction risk(YMRS)

RESULTS 15 showed an improvement in symptoms as reflected by reduction of HAMD17. A total of 88% of patients entering the extensiÃ³n study completed it.Patients showed a good profile of efficacy(52% Improvement,8% remission)with a low percentage of Adverse event(32% of patients)No serious adverse events(SAEs) were reported in treatment group.The top 2 adverse events were nausea(20%),anxiety(8%).Discontinuation due to an AE occurred in none of monotherapy patients and 4% of adjunctive therapy patients.Mean change in weight ocurred in 8% of patients.Some of the patients who improved received a second medication as adjunct therapy(32%benzodiazepines,4%asenapine,4%lamotrigine,4%trazodone)

CORRELATES OF ANXIETY COMORBIDITY IN UNIPOLAR AND BIPOLAR DEPRESSED PATIENTS

Lead Author: Sabrina Paterniti, M.D., Ph.D.
Co-Author(s): Jean-Claude Bisserbe, M.D.

SUMMARY:
Introduction. Anxiety disorders are highly prevalent in mood disorders. Comorbid anxiety disorders have been associated with increased severity in depressive symptoms, lower quality of life and lower functioning, both in MDD and bipolar disorder.
Objectives. Objective of this study was to examine the correlates of anxiety comorbidity, in term of sociodemographic characteristics, depressive symptoms, psychological features and measure of quality of life, in a large sample of unipolar and bipolar depressive patients.
Methods. Between December 2006 and December 2012, 381 individuals suffering from a unipolar major depressive episode (MDE) and 126 subjects suffering from a bipolar MDE were referred to the ROMHC Mood Disorders Program by physicians in community, general practitioners for the most part. The Structured Clinical Interview for DSM-IV-TR was used to assess the current Axis I diagnosis. During the initial interview, information was gathered on the sociodemographic and clinical characteristics. The following rating scales were administered: QIDS, Automatic Thought Questionnaire (ATQ), Personal Control (PC), Perceived Stress (PS) and Outcome Questionnaire (OQ).
Results. Unipolar and bipolar depressive patients presented similar sociodemographic characteristics (mean age=41.9Â±12.2; 68.4% of the sample were women; 59.0% were not married; 74.2% were not active). Fifty one percent of depressed patients reported anxiety disorder comorbidity. Sociodemographic

factors (age, sex, marital status, employment) were not associated with the presence of comorbid anxiety disorders. There was a significant positive association between the presence of anxiety disorders and the severity of depression, as measured by SCID (p=0.007). Patients with anxiety disorders exhibited higher total scores of QIDS when compared with patients without an anxiety disorder (mean(SD)= 17.8 (4.5) versus 16.4 (4.5), p=0.002) and higher scores of the QIDS items specific of depression (feeling sad, view of myself, general interest). Patients presenting an anxiety disorders also exhibited higher ATQ scores (mean(SD)= 147.5 (28.6) versus 133.1 (30.2), p=0.002); OQ total score (mean(SD)= 105.4 (20.9) versus 95.1 (23.0), p=0.001); PS score (mean(SD)= 28.5 (5.6) versus 26.9 (6.2), p=0.01); PC - perceived constraint score (mean(SD)= 38.5 (8.1) versus 35.5 (9.3), p=0.001); and lower score of PC - personal mastery (mean(SD)= 17.1 (4.4) versus 18.6 (5.2), p=0.003). All the associations, except for the PS score, were independent of the sociodemographic characteristics, severity of depression as measured by SCID and type of mood disorder (unipolar or bipolar), as measured in multiple regression models.
Conclusions. Anxiety disorder comorbidity was associated with higher depressive severity, with lower quality of life and poorer coping skills.

MEDIATING EFFECTS OF STRESS RESILIENCE BETWEEN CHILDHOOD TRAUMA AND ADULT DEPRESSION

Lead Author: Seunghee Won, M.D., Ph.D.
Co-Author(s): Dohoon Kim, M.D., Geumye Bae, Ph.D., Jiwoo Kim M.D., Taehoon Koo M.D.

SUMMARY:

Objectives: The aim of the study is to examine mediating effects of stress resilience between childhood trauma and adult depression.
Method: We recruited 438 subjects who were students of Kyungpook national university school of medicine from april 2012 to april 2013. A Korean version of the childhood trauma questionnaire(CTQ) was used for evaluation of childhood trauma. The severity of depressive symptoms was evaluated using a Korean version of the Beck Depression Inventory(BDI). The strength of individual resilience was evaluated by Korean version of the Connor-Davidson Resilience Scale(CD-RISC). We used Pearson correlation test to measure overall relationship between childhood trauma, resilience and depressive symptoms. Independent t-test was used to compare gender differences. Structural equation model(SEM) was also used to identify mediating effects of stress resilience between childhood trauma and adult depression.. Bootstrapping was also applied to select efficient mediating type of stress resilience in SEM.
Results: In Pearson correlation test, childhood trauma and depressive symptoms showed positive correlation(0.311**). Resilience and depressive symptoms revealed negative correlation(-.440**). There were no gender difference in childhood trauma(p=0.669) and resilience(p=0.764) except for depressive symptoms(p=0.005). Resilience showed a good model fit(CMIN=194.271, GFI=0.939, TLI=0.920, CFI=0.936, RMESA=0.70) in SEM. Partial mediation model showed higher fit index score(CMIN=194.271, GFI=0.939, TLI=0.920, CFI=0.936, RMESA=0.70, AIC=252.271) than complete mediation model(CMIN=216.741, GFI=0.932, TLI=0.908, CFI=0.926, RMESA=0.75, AIC=272.741). Partial mediation effect of stress resilience was validated by bootstrapping($\hat{I}^2$=.117, p<.01)
Conclusion: In conclusion, stress resilience acts as a protective factor between childhood trauma and adult depressive symptoms. In structural equation model, partial mediation model of stress resilience shows a better model fit than complete mediation model. The Strengthening

resilience is a potential goal in the treatment of depression.

WORK- AND NON-WORK-RELATED DETERMINANTS OF DANISH WORKERS MENTAL HEALTH PROBLEMS: A MIXED-METHOD STUDY

Lead Author: Helle Ostermark Sorensen, M.H.Sc., R.N.
Co-Author(s): Malene Krogsgaard Bording, MSSc sociology, Liselotte Jakobsson, D.M.Sci, Jan B. Valentin, Biostatistician

SUMMARY:
Background: Much attention has been drawn to the relationship between work and mental health, and the influence of different working characteristics in the development of workers mental health problems. Psychosocial working conditions has often been in focus and identified as important determinants. However, it is still not evident how considerable a role these psychosocial working conditions have compared to non-work related factors. Neither is it know, to what extend the reciprocal relationship between work and non-work related factors influence the development of mental health problems.
Aim: To identify work and non-work related determinants of mental health problems in Danish workersÂ´ from a pragmatic integrative perspective.
Method: A convergent mixed method design consisting of a quantitative (n=391) and qualitative strand (n=10) with subsequent integrated interpretation was applied. The study was grounded in a longitudinal intervention study entitled Early Detection and Treatment of Mental Illness in the Workplace (DEMIWO). Participants were employees from six medium-large companies in North Region Denmark. The quantitative strand statistically examined to what extent psychosocial working conditions were associated with symptoms on psychological distress. The qualitative strand used content analysis of individual semi-structured interviews to investigate which work and non-work related factors, Danish workers themselves perceived as contributing to their mental health problems.
Results: The quantitative findings demonstrated that an increase in 'effort-reward imbalance' were significantly associated with an increase in symptom severity at 6 month follow-up ($p<0.001$). From the qualitative content analysis, four work-related and four non-work related categories classifying the articulated perceived stressors and strains were developed. Across categories and context, three underlying themes emerged: 'lack of social support and recognition', 'feelings of unpredictability/uncertainty' and 'high demands and expectations'. The integrated findings identifies high demands/effort, low social support/reward and high uncertainty, emerging in both the work and non-work context, as important determinants of workers mental health problems. Moreover it was the sum or interaction of strains across context that facilitated mental health problems rather than a single factor.
Conclusion: The determinants of workersÂ´ mental health problems was found to be multi-facetted and multi-contextual. The mixed method design contributed with an expanded perspective on the complexity of mental health problems among the Danish workers by integrating elements from different domains of every-day life. A multi-dimensional approach is needed in order to intervene efficiently towards workers mental health problems.

ADHERENCE AND USER SATISFACTION BASED ON A COLLABORATIVE TELEMEDICINE PROGRAM TO IMPROVE THE MANAGEMENT OF DEPRESSION IN PRIMARY CARE

Lead Author: Graciela Rojas, M.D.
Co-Author(s): Viviana Guajardo, M.D.
Rosemarie Fritsch, M.D.
Ariel Castro-Lara, Pharm.

SUMMARY:
The user satisfaction (US) in health is a variable that may contribute to treatment

adherence in patients with chronic illnesses such as depression. Preliminary results of the evaluation and US adhesion of a clinical trial of depressed patients treated with a remote collaborative program between the Psychiatric Clinic and Health Services Reloncavi, Ã‘uble and Coquimbo are presented. Program adhesion at 3 and 6 months of treatment was assessed. The survey assessed the satisfaction of the consulting doctors and 6 months of treatment care, in addition to infrastructure facilities and telephone monitoring in relation to receiving calls, treatment received by the person making contact telephone, perception of recovery assistance. US rate to treatment was greater in the active group compared to the control at 3 months and 6 months. These differences were significant at 6 months. US evaluation found that 74% of the active group patients were very satisfied with remote monitoring and in 91.4% of cases very satisfied with the care of the person with which they contacted Distance. The program had a very good acceptance by users.

COMPREHENSIVE TECHNOLOGY-ASSISTED TRAINING AND SUPERVISION PROGRAM TO ENHANCE DEPRESSION MANAGEMENT IN PRIMARY CARE

Lead Author: Graciela Rojas, M.D.
Co-Author(s): Viviana Guajardo, M.D.
Rosemarie Fritsch, M.D.
Ariel Castro-Lara, Pharm.

SUMMARY:
According to the literature the management of depressive disorders at primary care level are not always consistent with guidelines. The main objective of this study is to test whether a Comprehensive Technology-Assisted Training and Supervision Program will improve depression management in Primary Health Care (PHC) clinics in Santiago, Chile. A cluster randomized controlled clinical trial with two arms will be conducted in four Primary Health Care clinics in Santiago, Chile. The sample selection of the PHC clinics will be performed in two steps, municipalities and PHC. The outcome measure were, change from baseline Depressive Symptomatology at 3 and 6 months. Consisted first in a intervention group (IG) which included: Primary Health Care team training in depression; a focus group after training; Telephone monitoring of patients; Web-based supervision of clinicians. Control group (CG) consisted patient Usual Care who receive all the interventions that are guaranteed for persons with depression in Chile; treatment in PHC clinics with the PHC team and referral to the regional specialized psychiatric service. Inclusion criteria subject who signed informed consent, age between 18-65 years,with current depressive episode, according to Mini-International Neuropsychiatric Interview (MINI). Exclusion criteria subject who had current depression treatment or no access to telephone. Analysis, primary analysis will employ multilevel multivariable lineal regression to investigate differences in the PHQ-9 scores between groups at 3 and 6 months after randomization, adjusting for baseline outcome variable scores. Sensitivity analysis making different assumptions will be conducted to investigate the potential effects of missing data. Similar analysis will be done for the secondary outcomes measures.

TREATMENT-RESISTANT DEPRESSION AND PERSONALITY DISORDERS

Lead Author: Michelle A. Cury, M.D.
Co-Author(s): Anderson Sousa Martins da Silva, M.D., Decio Gilberto Natrielli Filho, M.D., Kalil Duailibi, M.D.

SUMMARY:
It is well known that personality disorders contribute to the persistence of depressive symptoms and may be an important factor for treatment-resistant depression. Despite the importance to clinical practice, there is a lack of research about this issue. It is

almost a given fact, and little is found about this theme.
We did a systematic review with the MESH terms: "Treatment-resistant, depressive disorder" and "personality disorder". We searched in Pub Med, Highwire, Elsevier and Scielo, without period restrictions. We found only 4 matches in Pub Med, and 2 in Highwire. Two were excluded due to not being theme related.
From the 4 remaining, one was a case report. We focused our review on the remaining 3 texts. The first one from Stalsett et al. describes the use of Existential Dynamic Therapy(VITA) for treatment-resistant depression(TRD) with cluster C disorders in a group of 50 patients versus a 50 patients with "treatment as usual". It showed convincing results even in a 1-year follow-up.

The second one, from Keitner et al., was about the management of treatment-resistant depression. The text conceive the acceptance of TRD as chronic illness and move the focus from the idea of eliminating depressive symptoms toward techniques that promote insights of making sense and learning to function better. It is noteworthy that the authors consider the patientÂ´s personality, coping skills and social system as pillars of the treatment of TRD, which have to be taken in consideration for achieving a better quality of life.

The third text, from Takahashi et al., demonstrated personality traits as risk factors for TRD (patients with personality disorder were excluded from the study). This study used the Temperament and Character Inventory of Cloninger et al. to compare personality traits of TRD patients, remitted patients and healthy controls.

The results showed high scores for harm avoidance and low scores for reward dependence, self-directedness and cooperativeness in patients with TRD. Interestingly this study shows changes in the scores in treatment responders, from the beginning to the end of the treatment.

So besides proving to be a useful tool to tailoring psychotherapy, it brings the question about the role of personality traits in TRD. Is it a risk factor for TRD, or are they a possible way to remission?
One possible conclusion is that using protocols of medications alone may be insufficient and may be a risk factor for TRD. Perhaps we should consider that the modern approach to Major Depressive Disorder, when neglecting personality traits, might lead to the development of TRD.
Using the approach to chronic disorders and the evaluation of personality traits from the very beginning of treatment hopefully may reduce the incidence of TRD.

DEPRESSIVE DISORDERS AND CLINICAL SEVERITY OF DEMENTIA IN PATIENTS FROM A COLOMBIAN OUTPATIENT MEMORY CLINIC: A CASE-CONTROLLED STUDY

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SUMMARY:

Introduction: Depressive symptoms are common in patients suffering from major neurocognitive disorders. However, little is known about the impact of depression on the severity and functional outcome. Objective: Determine association between depression and severity of major neurocognitive disorders measured in terms of functionality. Methods: We conducted an observational case-control study of 376 in patients with major neurocognitive disorders screened for major depression, behavioral symptoms, functional loss, and vascular risk factors in an outpatient memory clinic facility in BogotÃ¡, Colombia. Both univariate and multivariate linear regression model analyses were performed in order to predict functional loss, along with an area under a

receiver operating characteristic (ROC) in order to measure the ability to discriminate differences using this predictive model. Results: Statistical significance (p < 0,001) with regards to loss of functionality was documented for depressed patients with major neurocognitive disorders after adjusting for age, subtype of dementia and vascular risk factors. While a positive screening for major depression had an OR=6.52 [1.64-25.88 CI 95%], z=2.66 and a p value=0.008, significant behavioral symptoms also showed a similar OR=6.16 [1.25 â€“ 30.29], z=2.24, and a p value=0.025 in the multivariate analysis. The discriminative capacity was of auROC=0.84, Chi 2=4.2 and p=0.013. Results for sensibility (73.3%), specificity (83.8%), positive predictive value (76.4%) and negative predictive value (91.7%) were also calculated. Conclusions: Significant depressive symptoms are associated with a 6 to7-fold increase in loss of functionality in patients diagnosed with major neurocognitive disorders. Behavioral disturbances can also generate the same degree of burden over functional outcome.

DESCRIPTIVE EPIDEMIOLOGY OF ANHEDONIA IN A LARGE SAMPLE OF DEPRESSED PATIENTS IN GENERAL PRACTICE

Lead Author: Pierre Michel Llorca
Co-Author(s): David Gourion, M.D.

SUMMARY:

Background: A loss of interest or pleasure is one of the two symptoms, along with depressed mood, used for the diagnosis of major depressive disorder in the DSM-5. This nosological aspect underlines the importance of anhedonia in depression. Yet anhedonia in depressed patients is infrequently explored in clinical trials in terms of prevalence or correlation with other clinical features. The frequency of anhedonia in major depressive disorder varies from 36.7% to 81% depending on how it is evaluated (1, 2, 3). One methodological issue is that in everyday practice clinicians may have difficulty identifying and quantifying anhedonia, and consequently considering it as an important therapeutic target. In order to shed light on the epidemiology of anhedonia in major depressive disorder, we used specific tools in a cross-sectional study (Hedonie) to describe the clinical characteristicsï‚¾and more specifically anhedoniaï‚¾of a large sample of depressed patients in general practice in France.
Methods: Using DSM-IV criteria, general practitioners recruited depressed patients consecutively and evaluated them using the Quick Inventory of Depressive Symptomatology (QIDS-SR), the Clinical Global Impression (CGI), and the Snaith-Hamilton Pleasure Scale (SHAPS).
Results: 2212 patients (63.4% women and 36.6% men) of average age 49.6 (SD=13) years were included by 636 general practitioners. The current episode was of average duration 6.2 weeks (SD=6.2) and was the first for 64.4% of the patients. 8.3% were on sick leave. The average QIDS-SR score was 15.8 (SD=4.3) and the average CGI 4.7 (SD=0.8). The SHAPS average score was 9.6 (SD=3.1), and in 90.24% of the patients anhedonia was considered severe (score above 5). Patients with severe anhedonia had a higher QIDS-SR score than patients with a SHAPS score <5 (16.2 Â± 4.2 vs 12.9 Â± 3.8, P<0.0001). The QIDS-SR and SHAPS scores were correlated (r=0.357, P<0.0001).
Conclusion: In our population, the percentage of patients with severe anhedonia was very high and above previous literature values. This can probably be related to the specificity of our sample (depressed patients in general practice) and also to its larger size compared with other studies. This result emphasizes the importance of screening for and evaluating anhedonia, given its consequences in terms of social interaction and functionality (2).

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LONG-TERM WORK CONTINUATION RATES IN PATIENTS ON DEPRESSION-RELATED SICK LEAVE FOLLOWING COMPLETION OF A FARM-BASED RETURN-TO-WORK PROGRAM

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SUMMARY:
BACKGROUND
The Need for Inclusive Return-to-Work (RTW) Programs
Social dysfunction often remains even after symptoms of depression subside following conventional treatment. This may hinder the ability of those on depression-related sick leave from returning to work. To bridge this gap between symptom reduction and functional recovery for those affected by lingering social dysfunction, there are an increasing number of return-to-work (RTW) programs, called "rework programs" in Japan. However, most benefactors of these rework programs are office workers in large companies situated in big cities, while services available for non-clerical workers in suburban areas are scarce. It is important to be aware of and to act against this disparity in service delivery.
The Development of a Farm-based RTW Programs
We developed an RTW program aimed at offering an effective service to workers of all backgrounds. The program consists primarily of outdoor farming activities, such as plowing, planting, and harvesting, which take place on a 360-m2 (approx. 3,900 ft2) field. Some farm-related indoor activities, such as packing, pricing, selling, accounting, and planning for next season, are also incorporated. Participants join this program four days a week for a period of several weeks to months until full functional recovery. The program is run by an occupational therapist under the supervision of a qualified psychiatrist.
OBJECTIVE The objective of this study was to investigate the outcome of the aforementioned farm-based rework program.
METHODS In this retrospective case series analysis, we examined the files of 48 outpatients who were on sick leave due to either clinically diagnosed major depressive disorder or bipolar disorder, between January 1, 2011, and August 31, 2014, who had participated in our farm-based RTW program. Kaplan Meier plots were used to examine work continuation rates following completion of the RTW program.
RESULTS Of the 48 outpatients included, 14 were clerical workers, 29 were non-clerical workers, and 5 were unemployed. Five had bipolar disorder and 43 had major depressive disorder. In total, 30 patients completed the RTW program and returned to work. Among those who successfully completed the program, the work continuation rates after one year, two years, and three years were estimated to be 81%, 81%, and 71%, respectively. No significant differences were found in work continuation rates between clerical and non-clerical workers.
CONCLUSIONS Workers who completed the farm-based RTW program demonstrated a high continuation rate 3 years after the RTW, regardless of their job type. The farm-based RTW program is

effective and can be considered a promising option of psychiatric rehabilitation for those on sick leave due to mood disorders. Further qualitative and quantitative study will be needed to understand all the benefits afforded by this approach.

THYROID STIMULATING HORMONE (TSH) AND SERUM, PLASMA, AND PLATELET BRAIN-DERIVED NEUROTROPHIC FACTORS (BDNF) DURING A THREE MONTH FOLLOW-UP IN PATIENT

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SUMMARY:
Background: Thyroid dysfunction and elevated thyroid stimulating hormone (TSH) are commonly in patients with depression. Blood brain-derived neurotrophic factor (BDNF) decreases during depressed state and recovers after treatment. The association between TSH and BDNF in patients with major depressive disorder (MDD) is unknown.
Methods: The 105 subjects with MDD â‰¥18 years of age were evaluated by the Mini International Neuropsychiatric Interview and the Hamilton Depression Rating Scale and Anxiety. Serum, plasma, and platelet BDNF were evaluated at baseline, 1 month and 3 months during antidepressant treatment. Other baseline measurements were hypothalamic-pituitary-thyroid axis hormones including TSH, triiodothyronine (T3) and thyroxine (T4); hypothalamic-pituitary-adrenal (HPA) axis hormones including cortisol, adrenocorticotrophic hormone (ACTH); and hypothalamic-pituitary-gonadal (HPG) axis hormones including luteinizing hormone, follicle stimulating hormone, estradiol, and progesterone, and prolactin.
Results: Linear mixed model effect analyses revealed that baseline TSH level was negatively associated with changes of serum BDNF from baseline to 3 months ($F = 7.58$, $p = 0.007$) after adjusting for age, sex, and body mass index, but was not associated with plasma and platelet BDNF. In contrast, T3 and T4, HPA axis hormones, HPG axis hormones, and prolactin were not associated with serum, plasma, and platelet BDNF levels. Patients with the highest quartile of TSH showed significantly lower serum BDNF level than other quartiles ($F = 4.54$, $p = 0.038$), but no significant differences were found depending on T3 and T4 levels.
Conclusions: Higher TSH is associated with lower baseline and reduced increase of serum BDNF levels during antidepressant treatment in patients with MDD.

ASSESSMENT OF DEPRESSION AND ANXIETY SYMPTOMS IN A SAMPLE OF FEMALE BREAST CANCER SURVIVORS

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SUMMARY:
Background: In Egypt, breast cancer is the most common cancer among women, representing 18.9% of total cancer cases with an age-adjusted rate of 49.6 per 100 000 population. Long-term cancer survivors have identified high rates of psychiatric disorders related to the disease and its long-term treatment besides the physical consequences, psycho-social and economic challenges surrounding the diagnosis of cancer and it's treatment.

Objectives: To assess prevalence and severity of depression and anxiety disorders in female breast cancer survivors.

Methods: A case control study included 37 female breast cancer survivors â‰¥1 year after finishing different treatment modules matched with a control group recruited from the outpatient oncology clinic, Suez Canal University Hospital. All participants were subjected to clinical interview to collect socio-demographic data , Beck Depression Inventory (BDI- II) to assess depression and Hamilton Anxiety Rating scale (HAM-A) to assess anxiety.

Results: There was a significant difference between survivors and controls regarding mean BDI- II score (P valueâ‰¤ 0.038); also, survivors showed obvious higher percent of severe depression (27%) compared to controls (10.8%). Regarding HAM-A scale there was an increase in the mean score among survivors (19.14 Â± 9.93 vs. 15.08 Â± 10.07). Cases reported greater percent of moderate (29.7%) & very severe anxiety (10.8) while 62.2% of controls reported mild anxiety. Short time treatment duration (1-5 years) was associated with "4 times" risk for developing anxiety compared to those of > 5 years duration of treatment.

Conclusion: Psychological co-morbidity is still high in breast cancer patients even many years after finishing treatment; this is related to perceiving cancer as life-threatening disease. Our findings provides the rationale for developing a program that facilitates early recognition and management of psychiatric morbidity among such group and recommend further research to be held including larger sample size to enhance generalization of the results and better identification of correlation between factors.

BDNF GENE POLYMORPHISM (VAL66MET) IS ASSOCIATED WITH RESPONSE TO ESCITALOPRAM IN SEVERE DEPRESSION

Lead Author: Wissam El-Hage, M.D., Ph.D.

SUMMARY:

The Brain-derived neurotrophic factor (BDNF) gene is a candidate gene for influencing the clinical response to treatment with antidepressants. The aim of the study was to determine the effects of 3 and 6 weeks of escitalopram treatment in depressed patients subdivided according to the treatment response.
We included 188 French subjects with depression, 153 completed a 6-week treatment with escitalopram (10-20 mg/d). Clinical evaluation was performed using the Montgomery and Asberg Depression Rating Scale (MADRS) before treatment and after 3 and 6 weeks of treatment.
At 3 weeks of escitalopram treatment, the Met carriers had increased antidepressant response in comparison to Val/Val homozygotes. No significant clinical difference between genotype groups remained at 6 weeks of escitalopram treatment.
Our findings further support that the Brain-Derived Neurotrophic Factor gene polymorphism (Val66Met) may play a role in antidepressant treatment response phenotypes in severe mood depressive episode.

CORTISOL LEVELS BEFORE AND AFTER ANTIDEPRESSANT FLUOXETINE TREATMENT IN CHILEAN PATIENTS WITH MAJOR DEPRESSIVE DISORDER

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SUMMARY:
Background. Increased cortisol levels have been related to both major depressive disorder and antidepressant treatment outcome. The aim of this study is to evaluate the relationship between circadian salivary cortisol levels and cortisol suppression by dexamethasone previous

and subsequent fluoxetine treatment in depressed patients.

Methods. The diagnosis and severity of depression were evaluated using the Mini International Neuropsychiatric Interview (M.I.N.I.) and Hamilton depression scale (HAM-D17), respectively. Euthyroid patients were treated with fluoxetine (20mg) (two months). Severity of depression was re-evaluated after three weeks, to adjust doses, and two months of fluoxetine treatments. Antidepressant response was defined as a reduction of at least 50% after three weeks and two months, and remission with ï‚£ 7 after two months of treatment. Circadian salivary cortisol levels and cortisol suppression by dexamethasone were evaluated before and after fluoxetine treatment. Hamilton scores and cortisol levels were compared by general linear model for repeated measures.

Results. 166 euthyroid patients were treated with fluoxetine. Out of the 122 that did not respond to placebo, 67 responded after two months of treatment and 48 remitted..These groups showed a significantly lower circadian cortisol levels than those who did not respond (p-values of 0.008 and 0.021 respectively). Patients who abandoned (N=20) treatment before the third week also exhibited a trend to low cortisol levels (p=0.057). Cortisol leves did not change after fluoxetine treatment in spite of the outcome.

Conclusions. These results support the clinical relevance of low basal salivary cortisol levels as a predictor of antidepressant response or remission to fluoxetine, even though they themselves did not change by the end of the treatment. Other factors may be involved in antidepressant response and further studies are needed to identify them.

DEPRESSIVE STATES IN SYSTEMIC LUPUS ERYTHEMATOSUS

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SUMMARY:
This is a double control study of the depressive states in Systemic Lupus Erythematosus with 78 patiants. Evaluation instruments: Schedules for Clinical Assesment in Neuropsychiatry (SCAN), Hamilton Depression Scale with Melancholia Scale (HAM-MES), Mini Mental State Examination (MMSE), and SLE activity using Systemic Lupus Erythematosus Disease Activity Index (SLEDAI). Complementary exams: Electroencephalograms (EEG), Computed Tomography, Presence of antiribossomal P antibody. The patients were distributed in three groups: Group I, patients with SLE; Group II SLE and depression and Group III, patients with depressive disorder. The group II, in comparison with Group I, showed lack of life satisfaction, loss of sexual interes, fatigue, pain and insomnia; they didnÂ´t show diferences in relation to biological markers. The Group II, compared with Group III, did not show diferences on the depression symptomatology, but it showed less frequently a previous psychiatric history and there was a trend to less depressive episodes. The Group II showed more tomographic changes in relation to Group III. There was a positive association between the diagnosis of Organic Depression (SCAN) and severe SLE activity on SLE patients. There was no difference between Groups I and II in relation to the presence of antiribossomal P antibody.

DUTCH TEA (AYAHUASCA)-INDUCED PSYCHOSIS

Lead Author: Muhammad W. Khan, M.D.

Co-Author(s): FAIZ CHEEMA, M.D, HOSSAIN ASGHAR, M.D

REHAN

SUMMARY:

ABSTRACT:

INTRODUCTION:

DUTCH TEA Ayahuasca is an Amazonian psychoactive plant beverage containing the serotonergic 5-HT(2A) agonist N,N-dimethyltryptamine (DMT) and monoamine oxidase-inhibiting alkaloids (harmine, harmaline and tetrahydroharmine) that render it orally active. DMT is structurally analogue to the neurotransmitter serotonin(5-HT) and the harmone melatonin, and further more functionally analogue to other psychedelic tryptamines. This was, first described academically in the early 1950s by Harvard ethnobotanist Richard Evans Schultes, who found it employed for divinatory and healing purposes by the native peoples of Amazonian Peru.

CASE DESCRIPTION:
We report a single-case study in which 43 y/o CM, was admitted to acute inpatient psychiatric unit with no significant past psychiatric history, who presented with prolonged psychosis (auditory and visual hallucinations & aggressive behavior) over 72 hours after ingestion of ayahausca containing tea. The patient reportedly has a history of multiple ayahausca uses, but on this occasion it was the combined usage of a monoamine oxidase inhibitor with ingestion of the beverage. Patient was provisionally diagnosed as "Substance induced psychotic d/o with hallucinations, onset during intoxication, Hallucinogen abuse". Pt's symptoms resolved after treatment with anti-psychotics. He was subsequently discharged to follow up at out patient clinic.

OBJECTIVE:

1- To study the link between Ingestion(abuse) of combination of Ayahuasca plus MAO inhibitors containing beverages and psychosis.
2- to find about the ease of availability, legal status and prevalence of the use of Dutch Tea or similar compounds in USA.

DISCUSSION:
Review of current literature provided insight on the components of the plant beverage â€“ Banisteriopsis caapi and Psychotria viridis. The vine, B. caapi, contains monoamine oxidase inhibiting alkaloids (harmine, harmaline and tetrahydroharmine), while P. viridis leaves contain the serotonergic agonist DMT. The combination serves to render DMT orally active.
As published literature on DMT has demonstrated no long term psychological effects with the tea alone, the instance of combining an additional monoamine oxidase inhibitor with beverage use and its impact needs further detailed research which we are trying to explore.The research of available literature has established that there were multiple case reports like one we are presenting and that the combined effects result in an undesired prolonged neuropsychosis.

We will also like to add a brief note in detailed case report later of affects of using Ductch tea on those already on SSRI.

RAPID TRANQUILLISATION AND CLINICIAN PREFERENCES: A TRANS-ATLANTIC COMPARISON

Lead Author: Pallavi S. Nadkarni, M.B.B.S., M.D.
Co-Author(s): Sarah Penfold, MD., Dianne Groll, PhD

SUMMARY:
Background
Aggression is the most common psychiatric emergency.It causes physical and

psychological consequences to all and also accounts for staff absenteeism.Management of dangerous behaviours poses a challenge to treatment teams.Chemical restraint is a last-line resort after other methods have failed.Rapid tranquillisation entails administering psychotropic drugs to control these behaviours.Inquiries into the deaths of Blackwood and Bennett have revived interest in rapid tranquillisation.The literature on this topic is sparse and varied.

Aims

-To survey clinician preferences on rapid tranquillisation in Kingston, Canada

-To compare results to an earlier survey from Leeds, UK

Methodology

A survey questionnaire based on a clionical vignette,was electronically disseminated amongst 100 psychiatrists working in the department of psychiatry in Kingston,Canada.It was adapted from a similar survey conducted by the primary author in Leeds, UK in 2008, which in turn was based on Cunnane's survey in Oxford in 1994.Respondents were emailed the link to the online survey and sent two reminders at fortnightly intervals.This data was analysed for the first and second drugs of choice, route of administration and estimated time to achieve a favourable outcome. Ethics approval from the local committee was sought. Results were compared to the 2008-survey from the UK.

Results and Conclusion

41% clinicians responded compared to 54% in the UK. The composition of respondents was strikingly different- only one-third comprised of trainees in Canada as compared to nearly two thirds in the UK. More consultants in Canada (69%) were receptive to this survey.Olanzapine(63%) was commoner than haloperidol(15%) and lorazepam (2%).20% opted for other medications. Lorazepam was chosen over olanzapine and haloperidol in that order in the UK with only a minority opting for 'other'.68% preferred oral route to parenteral options with none opting for IV route in Canada.78% in the UK chose the oral route with almost an equal numbers choosing for IM (12%) or IV(10%).Dissolvable tablets were preferred in Canada (76%) three times more than in the UK.Quicker results within 60 minutes were expected in both surveys.In Canada, 80% were willing to be persistent with the same drug in the event of the desired outcome not being achieved as opposed to only 33% in the UK. A greater number of clinicians preferred patients to be calm but awake with rapid tranquillisation as opposed to being sedated, which is in keeping with the guidelines (78% in Canada, 92% in the UK). A high compliance with local guidelines was seen in both surveys.

Discussion

The difference in the choices reflects evidence based practice in the two countries.It is intriguing that despite using the same evidence pool the two guidelines differ in their selection of medications.

Limitations

-Closed questions can limit responses

-Selection bias limits generalisation

-Ideal responses may not reflect actual practice

RISK MANAGEMENT OF FREQUENT ACCIDENT AND EMERGENCY ATTENDERS WITH SUSPECTED MENTAL HEALTH CONDITIONS

Lead Author: Itoro I. Udo, M.B.B.S.

Co-Author(s): Dr. Richard Arthur, Dr. Katsiaryna Andreichanka, Dr. Sagrika Nag, Kristie Wilson-Stonestreet, Dr. Zeid Mohammed, Dr. Amanda Gash, Mr. Kayode Adeboye, Dr. Gillian Wallace, Lorraine Ferrier.

SUMMARY:

Aims: People who attend Accident & Emergency Departments more frequently are often complex. They are thought to have a higher standardized mortality rate compared to other users of these services. They may receive support and care from multiple agencies at the same time.

Services targeted at this complex group are sporadic in the UK. Through the development of a collaborative, multiagency care pathway, it may be possible to gain a shared understanding of risks and manage these safely.

Methods: The principles underpinning the pathway include ethical values of beneficence and non-maleficence; identification and application of relevant guidelines and evidences; time lining of patient history or presentations; collaborative care; person centred care; care planning; active risk management; multiagency consultations/consensus and reduction of stigma.

Results: The stages are Case Identification; Initial Administrative Process; Timelining; Review of Current Presentation; Multiagency Meeting with Psychological Formulation; Care Planning and Action Planning.

Discussion: Case Identification is usually via Accident & Emergency administrative processes that electronically identifies frequent attendances. This information is shared with Liaison Psychiatry who fix and agree on meeting dates and professionals to be invited. A comprehensive detailing of the history and presentation of the patient is prepared prior to the meetings. During the multiagency meeting, a psychological formulation is attempted and shared. From this, a care plan is agreed and a plan is put in place for securing missing or desired information and information of relevant others. Care plan is usually shared with patients before it is formally adopted. This care pathway has been reported to be practical and achievable by patients, acute hospitals and agencies. Challenges in delivering this approach include logistics of fixing meetings at times suitable for various agencies/ professionals; identification of all relevant contemporaneous and historical clinical notes. Also, this pathway works well for self-harm presentation, but may be less optimal for frequent attendances due to somatoform illnesses.

Conclusion: The safe delivery of care by multiple organisations to complex patients can be optimised through multiagency collaboration. This illustrates how named principles are integrated to achieve safe clinical management of complex patients who frequently attend Accident & Emergency.

PREVALENCE AND RISK FACTORS FOR DEPRESSION IN OLDER PEOPLE IN GREECE AND CYPRUS

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SUMMARY:

Introduction

Depression in older adults is a common mental health disorder, leading to serious functional impairment and reduced quality of life.

Hypothesis

The aim of the present study was to estimate the prevalence of depressive symptoms in late life. Moreover, to investigate the association of depression with socio-demographic variables and chronic diseases in elderly of an urban area in Greece and in a community sample of older people in Cyprus.

Method

A cross-sectional study was conducted among the 239 members of three day care centers for older people (KAPI) in the municipality of Patras, West-Greece and in 206 older adults (110 in the community, 65 in outpatient clinics, 31 in nursing homes) in Cyprus, aged >60 years. A structured questionnaire was administered to the 445 participants including socio-demographic characteristics, chronic diseases and three questions from the European Health Interview Survey (EHIS) questionnaire,

regarding self-reported and/or by a physician diagnosed depression. Depression was assessed using the Greek version of the Geriatric Depression Scale (GDS-15). The scores of the GDS were compared to the corresponding answers of the EHIS questions and associated with the various recorded basic parameters. Statistical analysis was conducted using the SPSS v. 17.0.
Results
The overall prevalence of depression according to GDS-15 was 33% (28% moderate, 5% severe type). Depressive symptoms were more frequent in women compared to men (41.6% vs 28.3%, p<0.001) and in not married, including divorced and widowed, compared to married (43.0% vs. 29.3%, p<0.001). Moreover, depressive symptoms were more frequent in elderly with chronic diseases compared to elderly without co-morbidity (36.8% vs 25.0%, p=0.007), in older people dwellers of urban areas compared to rural (36.3% vs. 26.4%, p=0.028) and in ages between 70 to 80 years old (38.7% vs. 31.6%, p=0.038). Last but not least, higher prevalence of depression was measured in Greeks compared to Cypriots (44.3% vs 20.6%, p<0.001). In a univariate analysis, the following variables were signiï¬ cantly associated with depression: female gender (p<0.001), co-morbidity (p=0.004), higher age group (p=0.018), place of living (p=0.022) and Greek nationality (p<0.001).
Conclusions
According to GDS, 33% of older adults in the community sample of the studied area in Cyprus and in active members of KAPI in Patras, W-Greece, have depression symptoms. Several risk factors were strongly associated with depression whereas Greeks are in higher danger of developing depressive symptoms than Cypriots.
Discussion
Detection and management of older adults with depression should be a high priority when designing prevention programs in the community, including the systematic use of the GDS-15 in primary care practices.

ASSOCIATION BETWEEN EARLY ADVERSITIES AND SUICIDALITY DURING CHILDHOOD AND ADOLESCENCE

Lead Author: Bruno M. MendonÃ§a CoÃªlho, M.D.
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SUMMARY:
Background:
Childhood adversities (CA) are a group of negative experiences, that can occur throughout development, and implicated in several long-term outcomes. Among them, CA have been hypothesized to be associated with suicidality through life.
We analyze the effect of CA on the lifetime risk of suicidal behavior and cognitions (SBC) during childhood and adolescence.

Method:
The WHO World Mental Health Composite International Diagnostic Interview (WMH-CIDI) was used in a stratified, multistage area probability sample of 5,037 individuals aged 18 or more to assess sociodemographic variables, and the presence of suicidal behavior and cognitions, childhood adversities and their ages of onset was assessed retrospectively. Bivariate and multivariate discrete-time survival models with person-years as the unit of analysis were performed to estimate the relationship between several childhood adversities and subsequent suicidal behavior and cognitions onset in childhood and adolescence. Data are from the SaÌƒo Paulo Megacity Mental Health Survey, the Brazilian branch of World Mental Health Survey Initiative.

Results:

Female teens have an increased likelihood of presenting suicide attempts, suicide ideation, and among those with suicide ideation, higher likelihood of presenting attempts (but not plans). In multivariate analysis, suicide ideation was predicted, in children (4 to 13 years old), by all CA, nevertheless sexual abuse (OR=958.1, 95% CI 165.7-5539.7), parental divorced (OR=54.2, 95% CI 2050.3), and physical abuse (OR=108.6, 95% CI 14.9-790.7) presented the higher OR among all CA. In this group, none of the CA was predictor of suicide ideation.
In of adolescents (13 to 19 years old), among CA, only physical abuse predicts suicide attempt (OR=2.5, 95% CI 1.1-5.7) and suicide ideation (OR=2.4, 95% CI 1.3-4.3). Moreover, in this group, the presence of 2 adversities increase the likelihood of attempts (OR=30.1, 95% CI 4.9-184.9).

Conclusions:
Childhood adversities were differently associated with suicidal cognitions and behaviors in children and in adolescents. While in children CA as a group was associated with suicide attempts, in adolescents, this association occurs only with physical abuse.

THE INFLUENCE OF PARENTAL PSYCHOPATHOLOGY ON OFFSPRING SUICIDAL BEHAVIOR ACROSS THE LIFESPAN

Lead Author: Geilson L. Santana Jr., M.D.
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SUMMARY:

Introduction: Suicide and suicidal behavior are a major public health concern, and understanding the predictors of progression along the suicide continuum may help reduce their incidence and burden. Suicidality tends to occur in families, and parental mental disorders may predict distinct stages in the pathway to suicide. This study aims to explore the associations between parental psychopathology and offspring suicidality across the lifespan.

Methods: Data are from the Sao Paulo Megacity Mental Health Survey, a cross-sectional household study with a representative sample of 5,037 adults living in the Sao Paulo Metropolitan Area, Brazil. We used survival models to examine bivariate and multivariate associations between a range of parental disorders and offspring suicidal ideation, plans and attempts.

Results: After controlling for comorbidity, number of mental disorders and offspring psychopathology, generalized anxiety disorder (GAD) and antisocial personality predicted offspring lifetime suicidal ideation (OR 1.8 and 1.9); panic and GAD predicted lifetime suicidal attempts (OR 2.3 and 2.7); and panic predicted the transition from ideation to attempts (OR 2.7). Parental GAD was the main predictor of suicidal attempts across the lifespan, and the influence of parental psychopathology was most evident during childhood and adolescence.

Discussion: Parental disorders characterized by impulsive-aggression (antisocial personality) and anxiety-agitation (generalized anxiety and panic disorder) are the main predictors of offspring suicidal behaviors across the lifespan. This intergenerational transmission of suicide risk is independent of offspring mental disorders and may be related to the transmission of endophenotypes, such as subclinical psychopathological traits, and to environmental mechanisms.

PREVALENCE OF PSYCHIATRIC DISEASE OF ADULTS UNDER PROBATION IN KOREA

Lead Author: Junseok Ahn, M.D.
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SUMMARY:

Background
High prevalence of psychiatric diseases among prisoners and people under probation has been frequently reported worldwide as well as in Korea. Since psychiatric morbidity of criminals is known to be a significant element of repeat offending, managing their psychiatric disease is crucial for their social rehabilitation. Some previous studies revealed common psychiatric problems of prisoners by using basic screening or self-reporting tools. Yet detailed researches of epidemiology using structured diagnostic interview of people under probation have never been done in Korea.

Objective
Figuring out prevalence of psychiatric disorders, psychiatric problem, and correlation between diagnosis and types of crimination among people under probation.

Method
Total of 183 adults under probation were participated. Prior to structured interview, participants completed self-report questionnaires of Adult Attention deficit hyperactivity disease Self-report scale-v1.1. Following interview was based on Mini international Neuropsychiatric Interview (MINI), 5.0.0 version, diagnostic criteria in accordance with International Classification of Disease (ICD-10) and DSM-IV for screening major psychiatric disorder. Especially, gambling disorder and internet gaming disorder was based on proposed research criteria of DSM-5. All analyses were done using SAS enterprise 4.2 and $p < .05$ was considered statistically significant.

Results
People under probation had more psychiatric prevalence than normal population of previous nationwide study (47.54% vs 10.2%). Alcohol abuse was the most common disease (26.23%), followed by alcohol dependence (16.39%), major depressive disorder (16.39%), hypomanic episode (4.92%), gambling disorder (4.92%), antisocial personality (3.83%), and ADHD (3.28%).
Regarding correlation between diagnosis and types of crimination, resisting arrest crime was highly correlated with people under probation with psychiatric disorder ($p<.05$). Resisting arrest crime was highly correlated with alcohol abuse ($p<.05$) and alcohol dependence ($p<.05$).
Repeat offending was significantly correlated with people under probation with psychiatric disorder ($p=.003$). Alcohol use disorder and alcohol abuse were most significantly correlated with repeat offending ($p<.05$) followed by major depressive disease ($p=.01$).

Conclusions
Adults under probation had high prevalence of psychiatric disease compared to general population. Psychiatric disorder might have a significant role in offending and repeat offending of adults under probation. Comparing to other psychiatric disorders, alcohol dependence and alcohol abuse could be the most problematic cause of offending and repeat offending.

PHYSICIANS' ATTITUDE TOWARDS INTERACTION WITH THE PHARMACEUTICAL INDUSTRY

Lead Author: Fahad D. Alosaimi, M.D.
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SUMMARY:
Introduction: The relationship between physicians and pharmaceutical industry can be harmful to patients due to conflicting interests. This study aimed to examine association of knowledge and attitudes towards pharmaceutical industry with behavior, including interactions with industry and acceptance of pharmaceutical gifts. Methods: A cross-sectional study was

conducted in Saudi Arabia in 2012.A 100-point score was created from 17 5-point Likert scale questions. Results: The overall knowledge and attitude score of 659 participants was 63.1Â±8.5, with majority of participants holding a generally positive attitude. Higher (i.e., better) scores were significantly associated with a lack of interactions with pharmaceutical industry and with refusal of pharmaceutical gifts but not with ethical education. In the multivariate analysis, refusing gifts, additional income, and Saudi nationality remained independently associated with higher scores after adjusting for potential confounding variables. Conclusion: Overall, we report suboptimal knowledge and a generally positive attitude towards pharmaceutical industry among a group of physicians in Saudi Arabia

HEALTHCARE BEHAVIORS AND PSYCHOSOCIAL ADJUSTMENTS AMONG INDIVIDUALS WITH PRIMARY TRANSSEXUALISM: A 17-YEAR EXPERIENCE FROM TAIWAN

Lead Author: Han-Ting Wei, M.D.
Co-Author(s): Lee, Ying-Chiao. M.D., Ku, Hsiao-Lun, M.D., Chao, Hsiang-Tai, M.D., Su, Tung-Ping, M.D.

SUMMARY:
Background: Primary transsexualism is the most extreme form of gender dysphoria. Individuals with primary transsexualism strongly believe that they do not belong to their biological sex and ask for an anatomical-surgical intervention for their preferred sex. Individuals with primary transsexualism usually suffer from great social stigma. Healthcare for the individuals with primary transsexualism were full of clinical complicity.

Method: This is a hospital-based retrospective cohort study focusing on the 447 individuals with primary transsexualism who have visited the Psychiatric Department of Taipei Veterans General Hospital, a medical center in the Northern Taiwan, within the 17-year period from 1996 to 2012. Evaluations over the demographic data, health care behaviors, and the psycho-social adjustments over Sexual Reassignment Surgery (SRS) and Hormone Therapy (HT) were made.

Results: 100 individuals (64 Male-to-Female (MTF) and 36 Female-to-Male (FTM)) were successfully followed up. The MTFs (oriented to preferred sex 16.6%, orientated to the non-preferred sex 56.3%, bisexuality 18.8%, asexuality 9.4%) demonstrated stronger diversity over sexual orientation than the FTMs (orientated to the preferred sex 2.7%, orientated to the non-preferred sex 91.7%, bisexuality 2.7%, asexuality 2.7%). 43 individuals had completed SRS and 97.1% of them were satisfactory over the treatment outcome of the SRS. 67 individuals had completed HT while 76.1% of them were satisfactory over the treatment outcome of the HT. Comparing with those who have not received SRS or HT, individuals, especially the MTFs, who have completed either treatments were significant more socially well-adjusted and had lower levels of depression.

Discussion: There are still ample challenges over the healthcare of individuals with primary transsexualism in Taiwan. We expect a more multi-disciplinary and collaborative clinical approach to be developed in the future.

THE UNDERSTANDING OF THE DEMENTIA CAREGIVER

Lead Author: Hetal Acharya, M.B.B.S.
Co-Author(s): Manoj George, M.Sc., MRCPysch

SUMMARY:
Introduction
It is estimated that the incidence of Dementia in the UK is in the range of 800,000 people, partly due to a progressively aging population. The caregivers, sometimes known as the invisible second patient encompasses a

challenging role that can be all-consuming for better or worse. Therefore, it is ever more important that caregivers within the community are well-informed and understand the prognosis of dementia, better arming them with psychological tools and community services to create a healthier home environment.

Objectives

Our aim is to draw an insight into the experience of those caring for patients living with Dementia, and identify gaps within their knowledge in regards to the prognosis of condition. We aim to see the role additional community services in supporting families and patients living with Dementia. Finally, based on the results we aim to make relevant and useful recommendations that can provide a better standard of care.

Methods

This was a qualitative analysis of a survey consisting of 9 questions. The questions were in-depth and structured. This was in accordance with the NICE guidelines on the care and special considerations of managing patients with dementia and The Alzheimers Association UK. The survey had an emphasis on the carer experience, any support services the carer had come into contact with such as a chaplain and understanding of their relatives' diagnosis, symptomatology and prognosis. The interview conducted was straightforward in comprehension and completion. The survey also gave the opportunity for carers to express any other relevant information within two free text boxes.

Results

Eight primary carers were spouses and five stated they received support from a medical team only. Six carers felt the diagnosis and progression of Dementia had not been explained. Most understand that severe dementia constituted a variety of symptoms; mostly "difficulty recognizing family" and "difficulty finding words". Half of the carers stated they received support from a medical team and a third ticked that they had received help from the general practitioner. One carer stated they had received support from a number of multidisciplinary team members. Two carers gave powerful statements to describe their hardship; "Its a big job, I never realized how much a job it was. To see them go downhill so quickly it really gets to you" and "I have to do everything for her, it's difficult. She can't do anything, any household duties, finances and shopping".

Conclusions

This evaluation has highlighted the importance to work through a relationship-centered approach, to nurture the care giver, raise awareness and positively enhance the experiences for both them and the patient living with Dementia. With the ageing population, it is time to be not only an advocate for the patient but for the invisible caregiver, to build on capacity and eventually promote understanding, exploration, involvement and support.

PRADER WILLI SYNDROME WITH PSYCHOSIS: A CASE REPORT

Lead Author: Muhammed Puri, M.D., M.P.H.
Co-Author(s): Mary Bapana, MD

SUMMARY:

Introduction:

Prader Willi syndrome (PWS) is also known as Prader-Willi-Labhart Syndrome and is named after Prader, Labhart and Willi. They presented a series of cases in 1956 with similar phenotype as presented by Langdon Down in 1887. He described an adolescent girl with mental impairment, short stature, hypogonadism and obesity and termed it Polysarcia, an antiquated term meaning excess fat. In 1981 Ledbetter et al determined and identified the microdeletions between 15q11 and 15q13 as the site of Prader Willi syndrome [1].

The most common cause of syndromic obesity is Prader Willi Syndrome and is seen in approximately 1 in 25,000 live births

in the United States of America. PWS is caused because of the absence of expression or deletion or disruption of paternally active genes on the proximal long arm of Chromosome 15 or by maternal disomy. The expression of the phenotype that is dependent on the gender of the parent is known as genomic imprinting. The primary clinical features are decreased fetal activity, hyperphagia and obesity, hypotonia, short stature, mental retardation, and hypogonadotropic hypogonadism in both children and adults [1, 2]. Behavioral phenotype associated with PWS has been extensively studied and recorded. However another aspect of PWS is the neuropsychiatric co morbidity associated with it. In this article we aim to review some documented facts associated with psychosis in PWS patients.

Objective:

The aim of this article is to report a case of Psychosis in a person with Prader Willi Syndrome, and review literature on neuropsychiatric co morbidity associated with PWS especially Psychotic illness.

Method:

We report a case of Psychosis in a patient with Prader Willi syndrome. By reviewing available literature in regards to neuropsychiatric comorbidity especially Psychosis associated with Prader Willi syndrome obtained through PubMed, PMC, Medscape, Google and UpToDate.

Discussion:

Prader Willi Syndrome (PWS) is a complex genetic disorder characterized by neurologic, behavioral, cognitive and endocrine abnormalities. atients with Prader Willi syndrome often exhibit cognitive impairment and maladaptive behavioral problems. Young children exhibit, stubbornness, temper tantrums, obsessive compulsive behaviors. Larson et al(2013) in their study followed up 57.1% patients from a study conducted by Soni et al in 2007 and 2008, who met the criteria for psychosis.

Conclusion:

In conclusion, PWS is associated with psychiatric comorbidities like obsessive compulsive disorders, mood disorders and psychotic disorders. A strong correlation is observed between mUPD and Psychosis as compared to deletions and imprinting defect or other mechanisms of genetic defects in PWS but also that the existence of PWS in the patient makes them vulnerable to psychotic illness.

WITHDRAWN CAPGRAS SYNDROME IN ELDERLY: REPORT OF A CASE

Lead Author: Carmen Moreno Menguiano
Co-Author(s): Marta GutiÃ©rrez RodrÃguez, Fernando GarcÃa SÃ¡nchez

SUMMARY:
Introduction: Capgras syndrome is the most frequent delusional misidentification syndrome (DMS) which was first described in 1923 by Capgras and Reboul-Lachaux as 'L'illusion des sosies'. Consists in believe that close relatives have been replaced by nearly identical impostors. It can occur in the context of psychiatric disorders (schizophrenia, major depression) such organic, in which onset of delirium is usually later coinciding with neurological damage or neurodegenerative disease such as Lewy body dementia, Alzheimer's or Parkinson's disease .

Methods: We performed a review of literature about Capgras Syndrome in elderly by searching of articles in the PubMed database of the last five years to illustrate the exposure of a single case report.

Case report: woman 73 years old diagnosed of Schizophrenia since more than thirty years ago. Her family talk about

general impairment of the patient in the last two years. She needed a couple of psychiatric hospitalizations because of her psychiatric disease, and probably onset of cognitive impairment. In this context, we objectified the presence of a Capgras Syndrome.

Conclusions: The etiology of this syndrome is not yet well understood. Advanced age is frequently found Capgras syndrome with or without the concomitant presence of an obvious cognitive impairment. Since it is a complex process an etiological model that combines cognitive and perceptual deficits, organic impairment and psychodynamic factors should be proposed. And it is important to make a correct differential diagnosis that allows us to carry out the best possible treatment.

WITHDRAWN EKBOMÂ´S SYNDROME IN ELDERLY PATIENTS

Lead Author: Marta Gutierrez Rodriguez
Co-Author(s): Carmen Moreno Menguiano, Fernando Garcia Sanchez

SUMMARY:
Introduction: Delusional of parasitosis or EkbomÂ´s syndrome is a psychiatric disorder in which the patient has a fixed and false belief that small organisms infest the body. The belief is often accompanied by hallucinations. It is an uncommon condition that was initially studied by dermatologists. About 40% of the cases may be classified as a primary delusional, but a variety of patients show concomitant psychotic or affective disorders, dementia and other brain disorders, somatic illness and substance-induced psychosis. It is more prevalent in advanced age and itÂ´s typically observed in women over the age of 50 although isolated cases among men have been reported.

Methods: We performed a literature search using electronic manuscripts available in PubMed database published during the last five years, following the description and discussion of a clinical case. We report a case of an 85-year old man who presented a delusional parasitosis as a primary disorder.

Discussion: In this paper we analyze the etiology, demographic characteristics, clinical features and treatment in geriatric patients with delusional parasitosis.

KEYWORDS: dermatozoic delusion; Ekbom syndrome; infestation; parasitosis

WHAT ARE THE BENEFITS OF A MBSR-INSPIRED, MIINDFULLNESS-BASED PSYCHOTHERAPEUTIC INTERVENTION AMONG MULTIPLE SCLEROSIS PATIENTS?

Lead Author: Maria Fe Bravo Ortiz, M.D.
Co-Author(s): Ainoa MuÃ±oz San JosÃ©, M.D., Lidia Carrillo Notario, Ph.D., InÃ©s GonzÃ¡lez SuÃ¡rez, M.D., Carmen BayÃ³n PÃ©rez, M.D., Beatriz RodrÃguez Vega, M.D., Victoria LÃ³pez de Velasco, N.P., Celia Oreja Guevara, M.D., MÂª FÃ© Bravo Ortiz, M.D., Ph.D.

SUMMARY:
Introduction: Recent researches support than behaviour interventions for stress management, including mindfulness, might produce significant reductions in depression, anxiety and fatigue, and quality of life improvements among sclerosis multiple patients. The aim of this study is comparing the effectivity of a MBSR inspired mindfulness- based psychotherapeutic intervention to a psychoeducative program, with relaxation techniques, among sclerosis multiple patients. Both interventions are taught in group over 8 weekly 1.5 hour sessions.
Material and methods: a randomized clinical trial has been designed for studying the effect of both interventions on anxiety and depression (measured by HADS questionnaire), quality of life (measured by SF-36 questionnaire) and fatigue (measured by visual analogic scale), at the beginning of the study (pre-intervention), at the

moment of ending both interventions (post-intervention, 8 weeks), and 24 weeks after the ending of both programs. The sample is comprised of 41 patients with relapsing-remitting multiple sclerosis, 21 of then randomized to mindfulness intervention and the other 20 to educative program. No differences in sociodemographical characteristics has been found between the groups.
Results: In HADS questionnaire, patients randomized to mindfulness intervention show a mean score of 22.1 (SD 8.3) in basal measures, while the mean score at 8 weeks was 9.1 (SD 5.5); patients randomized to psychoeducative program, obtained a mean score of 18 (SD 8.6) in basal measures, and 7 (SD 5.5) at 8 weeks. In fatigue scale, the mean score in mindfulness group was 4.1 over 6 in pre-intervention measures, and 3.8 at 8 weeks, post-intervention; in psychoeducative group, the mean score pre-intervention was 4.1 and 3.4 post-intervention.
Conclusions: the results support the beneficial effects, in terms of improvements in depression, anxiety and fatigue, of mindfulness and psychoeducative interventions in patients with multiple sclerosis.

A NEW APPROACH TO AN OLD PROBLEM: AN INTEGRATED REHABILITATION UNIT FOR CHALLENGING BEHAVIOURS

Lead Author: Jeremy Goldberg, M.D.
Co-Author(s): Jennifer Sansalonei, MN
Susan Strong, PhD, MSc, BSc(OT)

SUMMARY:

Challenging behaviours pose a significant barrier to social inclusion, recovery and successful community integration. Despite obtaining optimal benefit from traditional best practice interventions, a subgroup of inpatients with schizophrenia continue with socially inappropriate, bizarre, aggressive or self-harming behaviours. As a group, these individuals proportionally utilize a significant amount of resources to manage risks and provide daily care. Furthermore, they are often subjectively distressed with poor quality of life due to environmental responses to challenging behaviours (restricted movement, staff burnout, denial of access to community resources and extended hospital stays).

In response, the Schizophrenia Integrated Rehabilitation Unit (SIRU), a specialized 7-bed unit, was created at St. Joseph's Healthcare Hamilton new West 5th Campus. Barriers to community participation and social exclusion are directly addressed by targeting underlying issues related to both the individual and living environments (inpatient and community). An innovative model of care integrates a cognitive-behavioural-environmental approach supported by a unique flexible staffing arrangement of a core inpatient team and extended auxiliary staff in a partially controlled environment. Starting with a detailed review and case formulation based on multiple perspectives, the team articulates specific behaviours, risks and outcomes to form a shared understanding. Therapeutic engagement combined with trauma- and psychologically-informed behavioural approaches is used by staff to implement an individually tailored, person-centred behavioural plan. Collaborating closely with caregivers, transitional plans incorporate capacity-building of living environments and continued follow-up support. Goal attainment scaling was begun as a strategy to support clear team communication, consistency in delivery, provide on-going relevant feedback sensitive to change and to measure the extent individual rehabilitation goals were achieved. Expected outcomes include: (i) positive changes in problematic behaviours, (ii) risk minimization, (iii) an increase in social inclusion, (iv) a reduction in patient and caregiver distress and (v) a removal of barriers to access community living resources, including housing, healthcare.

This poster presentation describes the Schizophrenia Integrated Rehabilitation Unit (SIRU)'s development and patient experiences as an exemplar of one setting's response to restricted community participation for a complex inpatient group living with schizophrenia and challenging behaviours. A program logic model will portray the translation of an innovative approach into this novel program's inputs, activities, outputs and outcomes. Composite case examples will illustrate the success, challenges and strategies employed. Key lessons learned are offered for reflection and discussion.

CHARACTERIZATION OF PRIMARY CARE-MENTAL HEALTH INTEGRATION PROGRAM IMPLEMENTATION

Lead Author: Chelsea Rothschild, Ph.D.
Co-Author(s): Chelsea Rothschild, Ph.D, Ashley Barroquillo, PsyD, R. Jill Pate, M.D., and Sharon Gordon, PsyD

SUMMARY:
The primary objective of this study was to gain preliminary data about veterans who present to the PC-MHI clinic. Referral information and data regarding patient sex, age, race, ethnicity, marital status, and number of psychiatric/medical diagnoses was also collected. This information provides descriptive data about the patient population within PC-MHI clinics at Alvin C. York VAMC to assist with providing specific training and education to the Patient Aligned Care Team (PACT) regarding psychiatric and behavioral health initiatives. Data from a random sampling of 230 primary care patients seen over the course of one year in PC-MHI were included. Descriptive analyses were conducted to categorize patients based on presenting problems/concerns and demographic variables. Results suggest complex patient referrals: a large variety of complex, multidimensional presenting concerns evidenced by primary encounter diagnosis are referred and seen in PC-MHI. There were no exclusionary criteria. Data revealed a primarily male (N=201), Caucasian (N=192), Married (56.5%) veterans. The mean age of this sample is 58, mean # of medical diagnoses 7.98, (range 0-25), mean number of psychiatric conditions was 2; however 97% of veterans referred had a significant psychiatric diagnosis. Results Suggest a wide range of type and severity of psychiatric conditions are referred to PC-MHI. Results also suggest co-location is a key element to integrating mental health into the primary care setting, 71.7% of patient referrals received from clinics with an embedded mental health provider. Future directions include ongoing data collection regarding patient population to provide evidence driven education efforts regarding highly comorbid psychiatric and medical diagnoses, assessing provider/patient satisfaction with integrated care services through both provider and patient satisfaction self-report measures, and implementation of an E-Consult to provide Pharmacological Support to the Primary Care Physician to assist with medication intervention for mild to moderate psychiatric co-morbidities in primary care.

INTERNATIONAL POSTER SESSION 2

Volunteer Moderators: Heena Desai, M.D., Shirwan Kukha-Mohamad, M.D.

PROFILE OF MENTAL HEALTH LAWS IN THE UNITED ARAB EMIRATES

Lead Author: Ghanem Al Hassani, **M.B.B.S., M.Sc.**
Co-Author(s): Ossama T. Osman, M.D.

SUMMARY:
This presentation aims at providing a comprehensive overview of the mental health laws and related professional psychiatric codes of conduct in this relatively young but progressive country of the United Arab Emirates (UAE). Methods: We reviewed the literature, the UAE federal laws and the reports from relevant international organizations for data on the

topic. RESULTS: We identified two Federal laws in the UAE from 1981 that are specific to people with mental illnesses and with handicaps. It is considered among the oldest mental health laws in the region. Several regulations were later developed with relevance to mental health though being part of the general Medical Code of Ethics for health services. In 2008 an updated Federal law on Medical Responsibility dealt with medical malpractice legal issues. CONCLUSION: There is a noticeable effort to develop other laws addressing the protection of the vulnerable population including women, children and the elderly. A new updated Mental Health Act is underway to keep in tandem with the major leaps achieved in the UAE health care over the past 42 years. Future laws need to restrict police responsibilities for detention of psychiatric patients to be based on medical psychiatric grounds or a court order. The requirements to compel admission should be revised and broadened. The English terminologies need to be updated to be consistent with the ones currently in use internationally.

RADIOLOGIC FINDINGS AMONG PSYCHIATRIC INPATIENTS IN THE UNITED ARAB EMIRATES

Lead Author: Ossama T. Osman, M.D.
Co-Author(s): Amir Mufaddel, M.D., Shakhboot Al-Bedwawi, M.D., Ghanem Al-Hassani, M.D., MSc

SUMMARY:
Aim: In this study we aimed to review the electronic records for all patients admitted for 3 years (2011 - 2014) to the Behavioral Sciences Institute at Alain Hospital in order to identify abnormal radiologic findings and its clinical and laboratory correlates among psychiatric inpatients. SUBJECTS AND METHODS: We reviewed the electronic records for all psychiatric admissions to Alain Hospital for three years 2011-2014 for presence of abnormal findings. The patients included in the study (n=295) were given serial numbers for anonymity Patients with multiple admissions were identified and only one serial number was given for each patient. RESULTS: A total of (n= 1586) admission records were examined for presence of brain CT and/or MRI studies. Initial review identified a total of 295 brain CT/ MRI studies. A total of (n= 1586) who were admitted for the three year period. The frequency of positive findings was n= 94 (32%) and basal ganglia calcifications were found in 15 (16%) of positive cases. Correlations of the latter with laboratory data revealed lower mean calcium levels (2.2) p=0.05, and higher CRP (28.3) p=0.049 compared with those with negative radiologic findings. Correlations with diagnostic categories and anatomic site were also identified and will be presented. CONCLUSIONS: Brain radiologic abnormalities are common among psychiatric patients. Longitudinal studies are needed to identify correlations between our positive findings with the long term outcomes of our patients.

ADDING FIFTY PRIVATE BEDS FOR A YEAR: WHAT DIFFERENCE HAS IT MADE TO PUBLIC SERVICE DELIVERY?

Lead Author: Nagesh Pai, M.D.

SUMMARY:
In recent years, there has been a considerable growth in private mental health facilities in Australia. While the private and public hospitals are likely to cater different sets of clients, establishment of a first new private hospital is likely to reduce the burden of providing care in public setting.
An audit to get some preliminary insights on the factors affecting impact of a 50 bedded private psychiatric hospital on various public health delivery measures a regional area of new South wales over one year period
No differences in demographic profiles and statistical measures. These two services catering different clientele in terms of diagnosis, severity and socioeconomic groups, criteria for admission, geographical

catchments area restrictions as well as smoking policy

CONTRACEPTIVE INTENTIONS AMONG CHRISTIAN WOMEN IN INDIA IN: A MULTI-STAGE LOGIT MODEL ANALYSIS

Lead Author: Mahesh N. Singh, Ph.D.
Co-Author(s): Niyati Joshi, PhD
Deputy Director

SUMMARY:
End level service providers of contraceptives meet problems in identifying specific non-users at different stages of service delivery. To understand its mechanism, a Multi-Stage-logit model is developed from NFHS-3 (2005-06) data for Christian women in India. The initial model is selected by Brown screening technique and for the final model, likelihood ratio statistic and Akaike information criterion is used. The study variables are age, number of living children, unmet need, infecundity, side effects of contraceptive use, education and place of residence, SLI and cash earning. Though spatial factors affect both Christian and non-Christian women, SLI directly affects Christian womens' intention while it operates through education for non-christian women. The study finds two different paths of causation affecting future contraceptive intentions of Christian and non-christian women with separate policy concerns and also suggests that paths to future contraceptive intentions of Christian women may act as a social learning for non-Christian women through diffusion process.

ACUTE HYPOTHYROIDISM INDUCED BY LITHIUM: A CASE REPORT AND REVIEW

Lead Author: Ana Luisa Almada
Co-Author(s): Joana SÃ¡ Ferreira, M.D., Paula Casquinha, M.D., Maria JoÃ£o Heitor, M.D.

SUMMARY:
Objectives: To explore, report and discuss a case of Acute Hypothyroidism induced by lithium. Review the literature of early stage hypothyroidism with lithium and how to manage the clinical situation.
Methods: Clinical report of Acute Hypothyroidism induced by lithium in Bipolar Disorder Type I, severe maniac episode. A multidisciplinary discussion with Endocrinology about the case was performed and the investigation was started. An Update review of the literature namely in PubMed data base and Google Scholar with the key words "acute hypothyroidism lithium" was conducted to allow a better understanding of the case and to perform the best evidence-based patient care.
Results: Case study of a 49-year-old woman admitted compulsively in the Beatriz Ã‚ngelo Hospital psychiatric ward with maniac symptoms, aggressiveness, lack of insight for her condition and need of treatment. She presented history of a maniac episode 2 years before and family history of goiter. No record of depressive episodes, and no personal history of thyroid disorders were detected. Blood tests with TSH before treatment had no significant changes. It was initially medicated with sodium valproate and atypical antipsychotics. During her stay in the ward, mood elation and disorganized behavior were reluctant to remit. It was introduced lithium carbonate with mood improvement. Due to a mild inversion of the mood with depressive symptoms and family history of thyroid disorders, 2 weeks after the introduction of lithium, a TSH new blood test was requested. It was registered an increase from 1,11 to 5,43mIU/L in TSH levels and a freeT4 of 11,1pmol/L. Lithium was in therapeutic levels (0,73mEq/L).
Thyroid antibodies and thyroid ultrasonography were also requested. Although the development of thyroid dysfunction does not typically require discontinuation of lithium, after a clinical discussion of the case it was decided to reduce lithium and increase sodium valproate. Levothyroxine replacement therapy was introduced.

Conclusion: The average duration of hypothyroidism diagnosis with lithium administration is 18 months, although it can occur within the first few months. Patients with normal thyroid dysfunction should be initially reevaluated every 6 to 12 months. Usually thyroid assessments are more frequent in patients with risk factors, at least every 3-4 months. As thyroid dysfunction should be treated if diagnosed, this case alerts for an eventual earlier analytical review in patients with risk factors.

***WITHDRAWN* TELOMERE LENGTH UNRELATED WITH DEPRESSION: A COHORT STUDY, A META-ANALYSIS, AND A MENDELIAN RANDOMIZATION STUDY**

Lead Author: Marie K. Wium-Andersen, M.D.

SUMMARY:

In cross-sectional studies, depression has been associated with short telomeres as a measure of biological age with conflicting results. We tested the hypothesis that short telomeres observationally and genetically are associated with depression. We included 67,306 individuals aged 20-100 years from the Danish general population. First, we examined whether short telomeres were associated cross-sectional with risk of hospitalization/death with depression or with prescription antidepressant medication use. Second, we included these results in a meta-analysis. Third and fourth, we tested whether short telomeres prospectively and genetically were associated with risk of depression; the latter was examined using TERT, TERC and OBFC1 polymorphisms combined coding for a 229 base pair shorter telomere length. Cross-sectional, the multivariable adjusted odds ratio (OR) for shortest versus longest telomere length quartiles were 1.05 (95% confidence interval 0.90-1.24) for hospitalization/death with depression and 1.00 (0.93-1.08) for antidepressant medication use. Meta-analysis fixed effect OR for risk of depression in those with short versus long telomeres were 0.99 (0.99-1.00) for all 18 studies combined, with evidence of publication bias toward positive results for small studies, and 0.99 (0.99-1.00) for the 4 studies with > 1000 participants. Prospective, the multivariable adjusted hazard ratio for shortest versus longest telomere length quartiles were 0.99 (0.82-1.19) for hospitalization/death with depression and 1.05 (0.94-1.17) for antidepressant medication use. For hospitalization/death with depression, instrumental variable analysis yielded a genetic OR of 0.97 (0.83-1.14) for a 200 base pair shorter telomere length estimated from the allele score, while the corresponding multivariable adjusted OR was 1.01 (0.99-1.02). For antidepressant medication use, corresponding ORs were 1.01 (0.94-1.09) genetically and 1.00 (1.00-1.01) observationally. In conclusion, in 67,306 individuals from the general population short telomeres were not associated with depression, observationally or genetically.

CORRELATION BETWEEN THE SERUM S100B PROTEIN AND THE OXIDATIVE STRESS IN THE FIRST-EPISODE CHINESE NAIVE DRUG PATIENTS WITH SCHIZOPHRENIA

Lead Author: Yun Bian, M.S.
Co-Author(s): Yunlong Tan,M.D.

SUMMARY:

More and more evidences indicate that the pathological mechanism of the schizophrenia involves multiple biological markers in different systems.Among a variety of the biological markers, some are primary, some are secondary, some are homogeneous, some are not homogeneous, so it is particularly important to explore the relationships between various substances. This study is intended to investigate the relationship between the S100B and the oxidative stress, which is helpful to understand the pathological process of the schizophrenia. 58 first-

episode naive drug patients with schizophrenia were recruited in BeijingHuilongguan hospital. General information about each subject was collected, with 5 ml of venous blood sample taken from the nticubital vein of each subject. The analysis of the Spearman correlation was made to examine the association between the oxidative stress parameters and S100B,a calcium-binding protein produced by astroglial cells. The patients have a mean age of 27.1Â±7.5 years (range: 16â€“45 year), a mean duration of illness of 38.1Â±33.5 months , a mean age of onset 24.0Â±6.4 years. A strong positive correlation was found between the S100B and the total oxidant status (TOC) (r =0.361,P=0.005),the same as that between the S100B and the malonaldehyde(MDA) (r= 0.284, p=0.031).

There are three possible reasons:(a) The oxidative stress leads to the increase of S100B. Oxidative stress is not only responsible for the neuron apoptosis, but also can provoke the astroglial cell death, thereby affecting the synthesis and the secretion of S100B. (b)S100B leads to the increase in the oxidative stress. It has been reported that the astroglial cells are the most important source of the free radicals in the central nervous system. The increased S100B may be a source of the oxidative stress, or a compensatory response to the oxidative stress. (c) There is no direct interaction of the Oxidative stress with the S100B , but they are all associated with the neurodegenerative process. Many studies suggest that the schizophrenia is a neurodegenerative disease. We also see the oxidative stress in both the schizophrenia and the aging, thus offering further evident basis for the ''accelerated aging'' in the schizophrenia. Age-related impairment of ATP released by the cortical astrocytes can cause a decrease in the extent of the astroglial modulation of synaptic transmission in the neocortex and can therefore contribute to the age-related impairment of the synaptic plasticity and the cognitive decline.

Too complex a relationship between various biomarkers makes it difficult to explain the pathophysiology of the schizophrenia using a single mechanism. So we should treat biological markers of schizophrenia from the perspective of the overall.

IS HEAD SIZE NUISANCE IN THE CORTICAL THICKNESS STUDY FOR ALCOHOL DEPENDENCE WITH KOREAN MIDDLE-AGED MALE POPULATION?

Lead Author: Siekyeong Kim, M.D., Ph.D.
Co-Author(s): Jeonghwan Lee, M.D., Sungjin Im, M.D., Jung-Woo Son, M.D., Chul-Jin Shin, M.D., Sang-Ick Lee, M.D.

SUMMARY:
Adjustment for head size is a routine procedure in volumetric neuroimaging studies. Meanwhile, the data of cortical surface from packages like FreeSurfer increasingly are being used in researches of psychiatry and neuroscience. However, it is not established whether head size standardization is necessary to estimate cortical thickness because there were mixed results about their relationship possibly due to differences of subjects' characteristics, methodology etc. We conducted this study to prove the relationship in Korean middle-aged male population.
We collected T1-weighted MPRAGE scans with Philips 3 T Achieva scanner in a single session to average in 26 Korean middle-aged male inpatients (age ranged 40-65) with alcohol dependence and 28 age-matched healthy controls and processed with FreeSurfer (version 5.3.0) with default setting. Mean cortical thickness globally and in each lobes including frontal, parietal, temporal, occipital, cingulate and insula were calculated (McDonald et al. 2008) and head size was estimated using Atlas Scaling Factor method for deriving total intracranial volume (TIV) (Buckner et al. 2004). Authors assessed the relationship between head size and mean cortical thicknesses by scatter plot examination

and Pearson correlation test. Tests for linear relationship were conducted using multivariable hierarchical linear regression models. Finally, we tested following regression model with null hypothesis Î²i=0 or whether Î²I depends on other covariates such as age and group. Y = Î²0 + Î²1*(age) + Î²2*(TIV) + Î²2*(alcohol dependence) + Îµ, where Y is the observed cortical thickness. To confirm and visualize the effects seen in the regression analysis, we assessed the independent or partial effects of each predictor with general linear model analysis using FreeSurfer's mri_glmfit procedure.
Age affected negatively on thicknesses of global, cingulate, frontal, occipital and insula cortices. Having alcohol dependence had negative effect on thicknesses of all cortical areas except cingulate cortex. The 2-factor regression model with age and alcohol dependence as covariates accounted for 20~30% of the explained variance in cortical thicknesses. However, There were no associations between TIV and cortical thickness in all cortical areas. The 3-factor regression model with age, TIV and alcohol dependence as covariates did not have additional significant power of explanation comparing with 2-factor model. We concluded that there is no association between head size and cortical thickness in Korean middle-aged male population with or without alcohol-related problem. Therefore, TIV cannot be nuisance in thickness study with such group. But the relationship between head size and cortical thickness would be changed depend on specific factors such as developmental stage of brain. Considering previous reports showing positive or negative associations in specific demographic population, further studies for diverse populations are needed.

REDUCING THE SYMPTOMATOLOGY OF PANIC DISORDER: THE EFFECTS OF A YOGA PROGRAM ALONE AND IN COMBINATION WITH COGNITIVE BEHAVIORAL THERAPY

Lead Author: Camila F. Vorkapic, Ph.D.

Co-Author(s): Camila Vorkapic, Ph.D., Bernard RangÃ©, Ph.D.

SUMMARY:
Introduction: Yoga is a holistic system of different mind body practices that can be used to improve mental and physical health. Yoga has been shown to reduce perceived stress and anxiety as well as improve mood and quality of life. Research documenting the therapeutic benefits of yoga has grown progressively for the past decades and now includes controlled trials on a variety of mental health conditions. Objectives: The primary goal of this study was to investigate the effects of yoga in patients suffering from panic disorder. We aimed at observing the efficacy of yoga techniques on reducing the symptomatology of panic disorder, compared to a combined intervention of yoga and psychotherapy. Method: Twenty subjects previously diagnosed with panic disorder were selected. Subjects were randomly assigned to both experimental groups: Group 1 (G1-Yoga) attended yoga classes and Group 2 (G2-CBT + Yoga) participated in a combined intervention of yoga practice followed by a cognitive behavioral therapy session. Both interventions occurred weekly for 100 minutes and lasted two months. Subjects were evaluated two times during the study: pre-test and post-test. Psychometric tools included the Beck Anxiety Inventory (BAI), Hamilton Anxiety Rating Scale (HAM-A), The Panic Beliefs Inventory (PBI) and Body Sensations Questionnaire (BSQ).
Results: Statistical analysis showed significant reductions in anxiety levels associated with panic disorder (G1: BAI â€“ p=0.035, HAM-A â€“ p=0.000; G2: BAI â€“ p=0.002, HAM-A â€“ p=0.000), panic-related beliefs (G1: PBI â€“ p=0.000; G2: PBI â€“ p= 0.000) and panic-related body sensations (G1: BSQ â€“ p=0.000; G2: BSQ â€“ p=0.000) both in G1 and G2. However, the combination of yoga and cognitive behavioral therapy (G2) showed even further reductions in all observed

parameters (mean values). Conclusion: This study observed significant improvement in panic symptomatology following both the practice of yoga and the combination of yoga and psychotherapy. The greater effectiveness of such combination might be due to the fact that CBT and yoga have similar concepts, although exposed in a different way. While contemplative techniques such as yoga promote a general change in dealing with private events, CBT teaches how to modify irrational beliefs and specific cognitive distortions. The results observed in G2 might indicate that the techniques complemented each other, increasing the intervention efficacy. These findings are in agreement with many investigations found in the literature which observed improvements in different mental health parameters after the practice of contemplative techniques alone or combined to psychotherapy. Future research joining psychological and physiological variables could help better elucidate the mechanisms through which mind body practices work to improve mental health.

BEYOND THE WOUNDS OF WAR: â€œA ONE STOP,â€ UNIQUE SERVICES APPROACH FOR CARING FOR MILITARY WOUNDED WARRIORS' FAMILIES AND CHILDREN

Lead Author: Ryo Sook Chun, M.D.
Co-Author(s): Ann Stomkin, LCSW

SUMMARY:

This poster will highlight the unique innovative services provided by the Operation BRAVE Families program to families and children of Wounded Warriors at Walter Reed National Military Medical Center.

Since 2001, over 49,000 Service Members have been injured and 5225 have been killed in combat (Source, http://www.defense.gov/news/casualty.pdf) . Nearly 44% of active duty members have children and 42% of all children are 5 years of age and younger. Families have little time to prepare for sudden combat injuries and decisions are made at a time of crisis, uncertainty and intense emotional distress. The injury necessitates a relocation of the Wounded Warrior spouse which involves the decision as to whether children will be uprooted from home and school. The younger children often move to the Washington DC area while the older children sometimes stay with friends or relatives and make weekend visits.

The impact on the Warrior Family is often devastating and presents new found challenges for clinicians and care providers who assess and respond to complex developmental needs of children impacted by the physical and psychological combat injuries of their parents (i.e. loss of prior functioning due to amputation, paralysis, PTSD, and TBI). The Wounded Warrior Families treated at Walter Reed have relocated abruptly under conditions of catastrophic stress. Gone are daily routines, schools, friends, and all that is familiar to the child, who must often adapt to a new cultural milieu and new demands throughout their stay in the National capital Area until they transition to their home base. In this context, the practitioner's role is fluid and at times ambiguous; clinicians assess and become champions of each Wounded Warrior Family and provide a multidisciplinary, multisystem plan of care that is highly individualized. Our approach is non-traditional and requires that we offer a multitude of coordinated services, resources, and available providers to meet the unique medical, psychological, educational, social and educational needs of these children. We will focus on a yearlong group for children and individual work with parents as an example of our interventions.

Throughout our work with the family and children, we monitor the mental health, educational, social and physical needs of the children and refer as needed for more

targeted outpatient intervention with our staff psychiatrists and psychotherapists and other specialties. Through working with families, we facilitate a new perspective on parenting and foster healing within the families. This model emphasizes the continuum of care from the bedside psychological first aid, anticipatory guidance, resilience building and transition of care to the civilian communities.

IDENTIFICATION OF GENES FOR AUTOSOMAL RECESSIVE INTELLECTUAL DISABILITY OR AUTISM IN CONSANGUINEOUS FAMILIES

Lead Author: John B. Vincent, Ph.D.
Co-Author(s): Nasim Vasli, Ph.D., Kirti Mittal, Ph.D., Xudong Liu, Ph.D., Ricardo Harripaul, M.Sc., Asif Mir, Ph.D., Muhammad Ansar, Ph.D., Muhammad Arshad Rafiq, Ph.D., Peter John, Ph.D., Iltaf Ahmed, Ph.D., Abolfazl Heidari, Ph.D., Bita Bozorgmehr, M.D., Laila Al Ayadhi, M.D., Hader Mansour, Ph.D., Roksana Sasanfar, M.D., Farooq Naeem, Ph.D., Muhammad Ayub, M.D.

SUMMARY:
The main aim of this project is to identify genetic causes of intellectual disability (ID) and autism spectrum disorder (ASD), using families from populations where endogamy is common, and focussing primarily on autosomal recessive (AR) genes. To this end, we have recruited >200 multiplex ID families, and ~350 ASD trios or small families. To date we have used microarray genotyping to map regions of homozygosity-by-descent for 135 ID families, and next generation sequence data (whole exome) for 81 families. Analysis of this data has led to the identification of new genes for non-syndromic ID, including TRAPPC9, MAN1B1, METTL23, FBXO31, DCPS, HNMT, FMN2, also two new genes for Joubert syndrome, CC2D2A and TCTN2. In one ASD family mutation in NS-ARID ene CC2D1A was found. Mutations were also found in known syndromic ID genes, such as LRP2, but in families where ID or ASD was non-syndromic. Mutations were also found in known syndromic ID genes VPS13B/COH1 (2 families), ASPM1, PMM2, TG, TPO, PEX7, BBS7, and ECCR8. Currently, we have identified the likely genetic cause in >20% of the families genotyped to date. Functional analysis of the genes identified shows a variety of functions, implicating seemingly implicating diverse neurobiological pathways, including protein glycosylation, mRNA decapping, protein transport, and protein degradation. We will also present the latest exome sequence analysis from ID families and ASD trios. In summary, the methods used have proven highly successful and efficient in identifying new disease genes for ASD and ID, however improved analysis may increase the etiologic yield.

REFRACTORY PSYCHOSIS IN A YOUNG MALE PATIENT WITH MEGA-CISTERNA MAGNA

Lead Author: Mehmet Ak, M.D.
Co-Author(s): Dilara Cari Gungor, M.D., Faruk Uguz, M.D., Ali Ulvi Uca, M.D.

SUMMARY:
Mega-cisterna magna (MSM) is a developmental formation of posterior fossa. There are rare case reports that present psychotic disorders associated with MSM in the literature. In the current report, we present a similar case.
A 20 years-old man was admitted to the inpatient Clinic of a University Hospital due to symptoms such as inappropriate and labil affect, afraid of humans, aggressive behavior, persecutory delusions, visual hallucinations, distractibility, and severe anxiety. The symptoms suddenly occurred following a period with confusion. The patient was unresponsive to classic antipsychotic medications. Electroencephalography was normal. Cranial magnetic resonance imaging indicated findings of MSM.
Previously, some case reports suggesting that a possible connecting between psychiatric disorders and MSM have been

published in the literature. The mechanism underlying the association in our case is unclear. According to Andreasan's unitary model, there is a neurodevelopmental disconnection including cortico-cerebellar-talamic-cortical circuit in schizophrenia. This case report suggests that an acute onset of psychotic symptoms including treatment-resistant severe anxiety and disturbances in cognitive functions may be related to MSM.

INTERACTIVE EFFECTS OF EARLY ONSET CANNABIS AND STRESS ON CORTICAL THICKNESS

Lead Author: Francesca Filbey, Ph.D.
Co-Author(s): Tim McQueeny

SUMMARY:
Studies in normative populations suggest that cortical thinning during neurodevelopment is a maturational process that is correlated with cognitive functioning. Given the known long-lasting and deleterious cognitive effects of early onset cannabis use, we examined whether similar alterations in cortical thickness are associated with early exposure to cannabis in 40 regular adult cannabis users (M age = 30.69; 40% females; M age of onset = 14.87). FreeSurfer's surface-based image analysis pipeline calculated whole-brain cortical thickness from MRI images. Regression analyses determined the effects of age of onset of cannabis use on cortical thickness, taking into account modulatory effects of early life stress, current alcohol use, current age and gender. We found that cortical thickness varied by age of onset, and was influenced by early life stress in the left insula and parahippocampal gyrus, and, right inferior frontal gyrus, such that early onset users with more early life stress had thicker cortex in these areas (cluster-corrected p<.01). Because we controlled for current age, the observed effects of early life cannabis use cannot be entirely due to the aging process â€“ i.e., neuronal loss. We speculate that these effects may be due to changes in cortical thickness during neurodevelopment that can be attributed to abnormal pruning. Taken together, early exposure to cannabis along with stress may cause perturbations to the brain that disrupt cortical maturation, making the brain less plastic during critical neurodevelopment.

ADAPTING GAME THEORY TO MODEL RESOURCE MANAGEMENT BEHAVIORS: CLINICAL IMPLICATIONS

Lead Author: Robert Rogers, Ph.D.
Co-Author(s): Amy C. Bilderbeck, B.Sc, Ph.D.
Judi Read, BSc.

SUMMARY:
Psychiatric illnesses frequently involve disrupted inter-personal relationships and social isolation; these features being important predictors of relapse and poor clinical outcomes. By contrast, sustained involvement with social groups in either occupational or recreational settings tends to be associated with better outcomes. Recently, we have adapted game-theoretic models to explore how serotonin activity mediates the way that individuals work with others to achieve a group-based objective; namely, the preservation of valuable but depletable resources for the longer-term. Diminished serotonin activity is associated with aggressive resource-harvesting behaviours and disrupted use of the social norms that constrain resource usage (Bilderbeck et al, 2014; http://pss.sagepub.com/content/25/7/1303) . Here, we describe clinical extensions of this research suggesting that individuals who are vulnerable to depression exhibit broad problems managing resources as part of social groups and as individuals. Our results can inform our understanding of the neurobiological and clinical aspects of social exchanges within groups; in addition, they offer ways to model the difficulties patients face when trying to manage social and financial resources to stay well.

ALLOCATION OF ATTENTIONAL RESOURCES DURING COGNITIVELY DEMANDING TASKS IS ALTERED IN JOB BURNOUT

Lead Author: Laura Sokka, M.A.
Co-Author(s): Marianne Leinikka, M.Sc., Jussi Korpela, M.Sc., Andreas Henelius, M.Sc., Lauri Ahonen, M.Sc., Claude Alain, Dr., Kimmo Alho, Prof., Minna Huotilainen, Prof.

SUMMARY:
Job burnout is a significant cause of work absenteeism, concerning over 25% of working people. Behavioral studies and patient reports suggest it is associated with impairments of attention and decreased mental and physical working capacity. However, studies on cognition and burnout are scarce, and those using electrophysiological measurements are almost absent. Here, we studied the electrophysiological correlates of involuntary capture of attention to novel task-irrelevant auditory stimuli while performing a visual working memory task in job burnout. As a method, we used scalp recordings of event-related potentials (ERP). Participants (N=66) were working people from two groups: burnout (N=40), and non-burnout controls (N=26). The groups were matched on age, gender, education, and working experience. Participants performed a series of visual n-back tasks (0-, 1-, and 2-back). During the tasks, they were presented with 96 novel environmental sounds, 32 in each condition, once every 10-16 seconds. They were instructed to concentrate on the n-back task, and not to pay any attention to the auditory stimuli. Behavioral results showed that the groups did not differ in relation to task performance. Auditory ERP waveforms revealed that novel sounds elicited a positive P3a response with two phases, indicating involuntary capture of attention towards the novel sounds. The early P3a amplitudes and latencies were comparable between groups. Further, the amplitudes of later phase of the auditory P3a decreased in both groups as the cognitive load of the visual task increased. Interestingly, the late P3a amplitudes for the burnout group were smaller in all conditions than for the control group. The late P3a latencies were longer for the burnout group but only when the cognitive load was low (0-back). The results suggest that although task performance is comparable between burnout and control groups, attentional resources in job burnout are more intensively allocated to the ongoing, cognitively demanding visual task, resulting in decreased attentional resources in detecting auditory novelty. The present results are of assistance in characterizing this subject group with various work-related burnout symptoms.

CLINICAL TRANSCRANIAL MAGNETIC STIMULATION (TMS) FOR MAJOR DEPRESSION WITH MELANCHOLIA IN AN INPATIENT SETTING â€“ THE BRISBANE EXPERIENCE

Lead Author: Chinna Samy, M.D.
Co-Author(s): Sameer Hassamal, M.D., Gregory King, L.C.S.W., Antony Fernandez, M.D., Anand Pandurangi, M.D.

SUMMARY:
BACKGROUND: Few studies have examined the effectiveness of Transcranial Magnetic Stimulation (TMS) in inpatient settings. We are reporting on our experience with clinical TMS as an open label add-on therapy for 37-patients with major depression and melancholia. The treatment was conducted at Pine Rivers Private Hospital, Brisbane, Australia. METHODS: Pine Rivers Psychiatric Hospital is a private psychiatric facility in Brisbane, Australia with 80-inpatient beds, average LOS of 3-weeks and provides services to adult patients with various psychiatric conditions. Patients reported here were admitted to the hospital after a consultant psychiatrist confirmed the diagnosis of Major Depression using DSM IV-TR criteria. 37 patients with Major Depressive Disorder (MDD), and persistent symptoms despite at

least two antidepressant trials were offered treatment with TMS using the Mag Pro X100 an advanced, high performance magnetic stimulator approved for treatment in Australia. The device has stimulation rates up to 100 pps and the possibility to combine waveforms and pulse modes. The hospital ethical committee approved the project. Treatment protocol was based on the labeled procedures of the approved TMS device. Each patient received a minimum of 20-sessions, while some were given up to 36- treatments. Clinical assessments were performed at baseline, after TMS session 10 and TMS session 20. Site of stimulation was always left dorso-lateral pre-frontal cortex (DLPFC). Power was set at 120% of motor threshold. Frequency was 10 Hz, each train with 45 pulses and inter-train interval being 15.5 seconds. Total number of trains was 125 in all and each treatment lasted 41 minutes and 12 seconds. The primary outcome measure was change in the MADRS score from baseline to end of TMS treatment. Secondary outcomes were change in Beck Anxiety Inventory (BAI) and Quality of Life scale (QOLS).
RESULTS: Patient Age (mean Â± SD) = 45.5 Â± 9.77 years. 70 % were female. Patients had previously received between 2 and 6 adequate antidepressant trials with a median of 5.5 without satisfactory improvement in this episode. There was a significant change in MADRS from baseline to end of treatment (- 28.41 Â± 8.97 P < .00004). There were 35 "Responders" (=>50% reduction in MADRS score) and 25 "Remitters" (=>50% reduction in MADRS score AND MADRS score <10. DISCUSSION: TMS therapy was highly effective in this population of moderately severe depressed inpatients with melancholic features. Most patients exhibited a strong trend towards improvement by the end of 15-sessions. As an open-label add-on therapy, we believe hospital stay, auxiliary therapies and continued medications all contributed to the high response rate. However, very likely TMS made a critical contribution the improvement as patients had previously received other therapies including many antidepressants. CONCLUSION: TMS adds significant value to the clinical treatment plan of patients resistant to antidepressants.

DIFFERENCES IN ECT APPLICATION RATES AMONG THE DIFFERENT REGIONS AND PROVINCES IN SPAIN. RESULTS OF A NATIONAL SURVEY (2013-2014)

Lead Author: Ernesto J. Verdura VizcaÃno, M.Psy., Ph.D.

INDICATION CRITERIA OF ECT IN SPAIN (AGE AND SEX). RESULTS OF A NATIONAL SURVEY (2013-2014).

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SUMMARY:

ECT is a non pharmacological treatment that approximately 1 million people in the world receive every year. Leiknes et al. 2012 recently conducted a systematic review on the use of ECT in the world reviewing a total of 70 epidemiological studies published between 1990 and 2010. Leiknes et al. 2012 concluded that, in general, exist 2 world patterns of administration of ECT. In Western countries, the ECT would apply, mostly women and elderly population being employed mainly in affective disorders while in developing countries and the Third World would be used primarily in men and in young people and more frequency in schizophrenia and other psychotic disorders. The practice of ECT in developing countries today would resemble

the practice of ECT in Europe in the past, although there would be a progressive trend worldwide towards an increasing use in women and the elderly in close relation with further indication affective disorders. The first study about ECT in Spain was conducted in 1993 (Bernardo et al. 1993), it was a regional survey, focused specifically on the province of Barcelona (Catalonia). After this, Bertolin et al 2001 conducted the first national survey on the practice of ECT in Spain (BertolÃn-GuillÃ©n et al. 2006). Now our group have conducted a National Survey on ECT (2013-2014). The study comprised any hospital included in the National Hospitals Catalogue (N=622) (official registry from the Spanish Ministry of Health). Included only hospitals with a psychiatric unit in Spain in 2012 (N=222). 84.2% (187) of Spanish hospital with psychiatric unit used ECT: 54.9% (122) prescribed and applied and 29.3% (65) prescribed and derived to another facility for its implementation. In Spain 3,090 patients received ECT in 2012 which represents an application rate of 6.60 per 100,000 patients. Among the 172 respondents centers for 80.2% (138) the main indication for ECT was depression in 11.6% (20) catatonia and 8.7% (15) of schizophrenia and / or schizoaffective disorders. 39.5% (68) of the centers have used ECT at some point in the neuroleptic malignant syndrome, 22.1% (38) in Parkinson's disease, 14.5% (25) in the delirium, 14% (24) in psychiatric disorders by medical illness, 13.4% (23) in anxiety disorders, 10.5% (18) in epilepsy, 8.7% (15) in dissociative disorders and 7% (12) at the dyskinesias. 61.9% (95% CI 57.6 to 66.2) of the indications of ECT occurred in patients 18 to 64 years and 38.2% (33.9 to 42.5) in over 65 years. 44.4% (95% CI 41.1-47,8) were performed in males and 55.7% (52.3 to 59.1) in women. ECT is indicated in pregnant in 84.8% (39) of the centers in this clinical situation arose. The decision to finalize the ECT was based exclusively on observation of clinical improvement in 89.4% (101) of the centers and relied on the use of psychometric scales at 10.6% (12) of the cases. There has been an improvement in clinical indications for the administration of ECT.

CHALLENGES AND MANAGMENT ALTERNATIVES IN SEVERE OBSESSIVE-COMPLUSIVE DIISORDER RESISTANT TO CONVENTIONAL GUIDELINES OF TREATMENT: A CASE REPORT

Lead Author: Suhey G. Franco Cadet, M.D.
Co-Author(s): Muhammad Anees, M.D., Edward Hall, M.D., Vandana Kathini, M.D.

SUMMARY:

Obsessive compulsive disorder is a mental health disorder that can often be quite disabling and is characterized by the presence of obsession and/or compulsions. Obsessions are recurrent and persistent thoughts, urges, or images that are experienced as intrusive and unwanted, whereas compulsions are repetitive behaviors or mental acts that an individual feels driven to perform in response to an obsession or according to rules that must be applied rigidly. Some other obsessive-compulsive and related disorders are also characterized by preoccupations and repetitive behaviors or mental acts in response to the preoccupations. The 12-month prevalence of OCD in the United States is 1.2 % with similar prevalence internationally (1/1%-1.8%). Females are affected at a slightly higher rate than males in adulthood, although males are more commonly affected in childhood. The mean age of onset is 19.5 years, and 25% of the cases start by age 14 years. If untreated, the course is usually chronic, often with waxing and waning symptoms. Onset in childhood or adolescence can lead to a lifetime of OCD; however 40% of individuals with childhood/adolescent onset may experience remission by early adulthood. Treatment alternatives include SSRI/CBT as first line treatment; some augmentation strategies include clomipramine, buspirone, pindolol, riluzole or once a week oral morphine sulfate.

This is the case of a 17 y/o Asian male who approximately 3 years ago started to exhibit obsessive behavior; the first obsession of the patient was playing with video games and subsequently developed mouth washing and lengthy showering rituals that he needed to perform multiple times a day. He started to be isolated, not leaving home, constantly playing with video games and was not attending school due to the constant need to use the restrooms. He was also exhibiting changes in behavior; he was very irritable and defiant, refused to follow rules at school or home, and was verbally and sometimes physically abusive with the mother. Patient was hospitalized originally four months prior this present admission; after initiation of treatment and stabilization, he was discharged home with plan to follow up with a psychiatrist as an outpatient. Patient could not comply with the treatment and was again hospitalized after becoming physically aggressive with the mother. This time, level of anxiety when prohibited to complete his rituals was increasingly out of proportion despite many different approaches in management. Obsessions escalated to constant spitting due to "dirty" saliva, dust/hair avoidance, washing his clothes/sheets multiple times, among others. Multiple security codes were called several times a week just to take the patient out of the shower. Despite multiple treatment approaches over the course of several months, minimal improvement has been observed.

SYMPTOM PROFILES OF PATIENTS WITH SCHIZOPHRENIA AND OBSESSIVE COMPULSIVE DISORDER AND PATIENTS WITH PURE OBSESSIVE COMPULSIVE DISORDER

Lead Author: Oguz Karamustafalioglu, M.D.
Co-Author(s): Nesrin KaramustafalÄ±oÄŸlu,M.D.

SUMMARY:
Patients diagnosed as schizophrenia (100) and obsessive compulsive disorder(50) according DSM-IV criteria taken into the study.SCID I is used to diagnose patients.16 patients with schizophrenia had comorbid obsessive compulsive disorder.The mean Yale Brown Obsessive Compulsive Scale Score (Y-BOCS) for the group was 26.6.The most common obsessions in the SZ-OCD group found be being contaminated (62.5 %)and others(62.5 %) and the common compulsion were found to be others in the Y-BOCS (68.8 %) The mean Y-BOCS total score was 28.2 in the pure OCD group. The most common obsession in this group was being contaminated (80 %) and the most common compulsion was cleaning (78 %) . When the obsession and compulsion subscales which evaluated the intensity of symptoms was compared in between groups, no statistically significant group was found between patients with pure OCD and SZ-OCD.No statistically significant difference between the groups for total Y-BOCS score.However , when obsessive and compulsive content was compared,statistically significant differences emerged for religious obsessions (p:0.002) and compulsions of bathing/cleaning (p:0.009) and controlling compulsions (p:0.008) which were hiher in the pure OCD group.

INCIDENCE AND SEVERITY OF PSYCHOTIC SYMPTOMS IN THE CONTEXT OF A PRECEDING TRAUMATIC EVENT

Lead Author: Suhey G. Franco Cadet, M.D.
Co-Author(s): EDWARD HALL, M.D.

SUMMARY:
In examining the relationship between trauma and psychosis, many theorists have drawn attention to the similarities in the symptom profiles of acute stress disorder/PTSD and psychosis. It was hypothesized the PTSD mediates the negative effects of trauma on the course of serious mental illness. It is suggested that PTSD influences psychosis both directly, through the effects of specific PTSD symptoms including avoidance, over

arousal and re-experiencing the trauma, and indirectly, through the effects of common consequences of PTSD such as re-traumatization, substance abuse, and difficulties with interpersonal relationships. Consistent with the idea that psychosis lies on a continuum with "normal" human experiences, the view that psychosis can be trauma-induced is supported by several strands of research that highlights, for example: that childhood trauma is a risk factor for psychotic experiences in the general population; that there are high levels of trauma in the histories of psychotic population; and the striking similarities between themes expressed in delusions and auditory hallucinations and the characteristics of traumatic events experienced before onset. Despite the increasing evidence to support the association between traumatic life experiences and psychotic states or symptoms, there is a demand for research that addresses the question of how these two phenomena are linked. It has been hypothesized that trauma may produce a psychological and/or biological vulnerability for the development of psychotic experiences.

This will be a research project based on a case report of a 16 Y/O Hispanic female who exhibited psychosis after a traumatic event with no previous history of any similar episodes. Patient reported being in her usual state of health until approximately 4 weeks prior evaluation when she went to a high school graduation retreat with some friends for a weekend. During this trip, patient was sexually abused by several individuals under the influence of drugs. After returning home, she started to be very anxious, withdrawn, religiously preoccupied and was attending school once or twice a week until she eventually stopped going to school. Patient was also exhibiting disorganized thoughts, auditory/visual hallucinations together with paranoid delusions. She was observed by parents to be isolated, internally preoccupied, responding to internal stimuli; very aggressive and combative. After some time patient started to talk about what happened that weekend but due to the severity of her symptoms, she was hospitalized. Patient was very challenging, symptoms were worsening and it took three weeks to stabilize her.

EXAMINATION OF BURDEN, DEPRESSION, AND ANXIETY LEVEL IN THE CAREGIVERS OF PATIENTS WITH SCHIZOPHRENIA AND BIPOLAR DISORDER

Lead Author: Fatma Barlas, M.D.
Co-Author(s): Fulya Maner, Assoc. Prof. Dr.

SUMMARY:
In this study, we examined whether and how the severity of schizophrenia and bipolar disorders could be related to or affect the caregivers' burden, depression, and anxiety levels. Schizophrenia and bipolar patient groups and their primary caregivers were recruited from Psychiatry, Neurology and Neurosurgery department of BakÄ±rkÃ¶y Prof. Dr. Mazhar Osman Research and Training Hospital. Both groups of patients completed Sociodemographic and Clinical data forms. In addition, we obtained Positive and Negative Syndrome Scale (PANSS) from the group of schizophrenia patients and Beck Depression Scale (BDS) and Young Mania Rating Scale (YMRS) from the group of bipolar patients. All caregivers completed the Sociodemographic data form, Zarit Caregiver Burden Scale (ZCBS), BDS, and Beck Anxiety Scale (BAS). The results showed that both groups' caregivers reported to have high levels of burden. 72% of the caregivers of schizophrenia patients and 62% of the caregivers of bipolar disorder patients are found to exhibit the symptoms of depression. The anxiety level of the caregivers of the bipolar disorder patients is found to be significantly higher than that of the schizophrenia patients' caregivers. We found a significant and positive correlation

between the scores of the ZCBS in the caregivers of schizophrenia patients and PANSS positive, negative, and general psychopathology scores. We also found a positive correlation between the depression levels of bipolar disorder patients and their caregivers' burden, depression and anxiety levels. Our results indicate that the caregivers of both schizophrenia and bipolar groups might have to cope with a significant level of burden, depression, and anxiety based on the severity of the disorder. Considering the importance of caregivers' role in the treatment of these patients, we suggest that intervention of schizophrenia and bipolar disorders should also involve a careful observation of the caregivers' psychological state and provide help to improve their conditions.

REORGANIZING A PSYCHIATRIC SERVICE: THE SNAKES AND THE LADDERS

Lead Author: Ankur Gupta, M.B.A., M.B.B.S.

SUMMARY:

This poster describes the process and experience of reorganising a General Adult Psychiatry service in the UK. The service caters to approximately 117,000 adults of working age and includes 48 inpatient beds (two mixed sex acute wards and one male intensive care unit), four (now two) community mental health teams, general hospital liaison team, a crisis resolution and home treatment team, community assertive and rehabilitation team and a day hospital. It had been struggling for years with a number of issues such as overspend, vacant posts, use of temporary (locum) doctors, disengaged psychiatrists, and interpersonal problems. For example, there was no psychiatrist available to the crisis resolution and home treatment team which meant that patients who were at risk and most vulnerable could not get timely medical intervention whilst on the inpatients wards, there were more psychiatrists coming in then could be reasonably accommodated by the staff. There were significant differences between psychiatrists and managers and the two groups were unable to work together, to the detriment of patient care. The global financial crisis was having an impact on the availability of resources as well. Such problems were not only detrimental to employee morale and quality of care but were also putting patients at risk particularly owing to a lack of progress with recruitment. By using theoretical frameworks from service management and organizational behavior literature, a robust process was developed to overcome these significant challenges. The process lasted over 18 months from end of 2012 and involved negotiations, discussions, listening & working with a range of stakeholders including psychiatrists, nurses, allied health professionals, managers, administrators, primary care physicians, patients and carers. With this process, our entire service was reorganized to make it safer, more efficient and responsive. Quality of care has improved with permanently employed consultants providing bulk of the care. We have been successful with recruitment and are able to provide dedicated medical input to all parts of the service. Not only that, we have been able to reduce our total expenditure on medical staff by Â£200,000 per annum. By reducing the number of consultants in the wards, continuity of care has reduced to an extent but the service is much more streamlined and has enabled the nurses to spend longer with the patients. Whilst it is too early review the impact of the reorganization, anecdotal evidence suggests that patients are much more satisfied with the new arrangement.

Such problems are not unique to a service and a lot many organizations can gain valuable insights from our experience.

BARRIERS FOR PSYCHIATRISTS SEEKING MENTAL HEALTH CARE

Lead Author: Tariq Hassan, M.B.B.S.

Co-Author(s): Mir Nadeem Mazhar, M.D., Tariq Munshi, M.D., Niall Galbraith, PhD,

SUMMARY:
Aims

Doctors are at increased risk of developing a mental illness and at increased risk of suicide compared to the general population. Medical students when faced with psychological stress and are more likely to avoid help. This study attempts to assess Canadian consultant psychiatrists' attitudes to disclosure and treatment preference if they were to become mentally ill.

Method

Data was collected through a postal survey from all consultant psychiatrists registered in the province of Ontario in Canada. The survey package contained a covering letter, a 2 page questionnaire, and return stamped addressed envelope. Respondents were separated into 3 groups in order of experience as a consultant psychiatrist.

Results

487 out of 1231 questionnaires were returned (response rate of 40%). Respondents would be most likely to disclose their mental illness to family and friends (204, 41.9%). Those who would choose to disclose to their family physician or to family/friends were more likely to cite stigma as a factor influencing their choice than those who would choose to disclose to colleagues. Nearly a third of respondents (151, 31.0%) claimed to have experienced a mental illness. There was no association between choice of whom to disclose and previous experience of mental illness (Ï‡Â²=1.22; DF=2; p=.545; Cramer's V=.05).

Conclusions

Stigma continues to play a role in how consultant psychiatrists decide the course of disclosure and treatment. Consultant psychiatrists with less than 5 years of such experience when deciding treatment for themselves are more concerned with confidentiality than their quality of care. Senior consultant psychiatrists are more likely to seek professional help than informal professional advice out the outset of a mental illness.

WITHDRAWN SKIN AND THICKNESS: THE CONTAINING FUNCTION IN OBESITY

Lead Author: Luiza Schmidt-Heberle, M.D.
Co-Author(s): Juliana T. Azevedo, M.D., Carolina C. Meneghetti M.D., Gabriela Pavan M.D., Laura C. Marostica, M.D., Rafael Mondrzak, M.D., Luciano B. Luiz, M.D., Alberto F. Kerber, Psychology Student, Marina B. Lemieszek, Medical Student, Denise P. Bystronski, Psychologist, Fernanda Perrenoud Raabe, Psychologist, CÃ©sar L. S. Brito, Ph.D.

SUMMARY:
OBJECTIVE: The skin plays a key role in the primary organization of the psyche. The purpose of this study is to review the following concepts: setting-up of inner versus outer space, contact boundary, excitability boundary and containing function.
METHODS: In weekly meetings at PUCR's Centro de Obesidade e SÃndrome MetabÃ³lica (Center of Obesity and Metabolic Syndrome of Pontifical Catholic University of Rio Grande do Sul), our group conducted a literature review and discussed the approaches of Freud, Esther Bick, Didier Anzieu and Winnicott on the experiences of the baby with its skin while developing archaic object relationship. In doing so, we sought to reflect on the correlation between the process of gaining weight and the need to develop a second-skin.
RESULTS: We managed to understand the importance of the skin in the development

of the functions related with containing, excitation screen, supportability and that of sustaining the parts of the self, according to the aforementioned authors. We also regarded the significance of the maternal envelope, including the touch, as the founding element of the thinking ego (moi-pensant), which contains parts of the self and enables the development of the symbolizing capacity. Through this understanding, we were able to evaluate the role played by the thickness of the skin in obese patients â€“ that of a need to contain parts of a poorly integrated self, which was not able to develop a notion of containing object that would allow a self-other differentiation and proper identity conformation.
CONCLUSIONS: The need of the obese to increase the thickness of their skin (fat layer) is so often the bodily expression of their need to create a protective and restraining cover, so as to keep splitted the emotional contents from inside and outside of their emotional lives. Thus, psychotherapy aims to amplify the patients' need to connect with the loved objects, introjecting and enhancing continence functions, as if developing a new skin.

METABOLIC PARAMETERS IN MAJOR DEPRESSION PATIENTS TREATED WITH ESCITALOPRAM

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SUMMARY:
Aim: The aim of this study is to determine the change in metabolic parameters of patients with major depression treated with escitalopram

Method: The height, body weight, waist circumference, blood pressure, lipid profile (total cholesterol, low density lipoprotein [LDL], high density lipoprotein [HDL], triglycerides [TG]), fasting blood glucose (FBG), thyroid stimulating hormone (TSH) and Hamilton Depression Scale (HamD) of 41 consecutively selected patients with major depression were measured before treatment and in the 3rd month of treatment, for whom a decision to start treatment with escitalopram was decided. The relationship between treatment and changes in these metabolic parameters were evaluated at the end of this period.
Results: The mean age of patients was 30,24 Â± 9.96 (18-62) years. Eleven (27%) patients were male and 30 (73%) were female. Twelve (24,5%) patients were treated with 10 mg/day escitalopram, and 29 patients (59,2) 20 mg/day. Significant increases were detected in body weight (p=0,0004), body mass index (p=0,0007), waist circumference (p<0,0001), and systolic blood pressures (p=0,0093) of all patients from initiation of treatment to 3 months. A significant increase was found in the waist circumference of male patients after 3 months of treatment (p<0,05). Body weight (p<0,01), body mass index (p<0,01), waist circumference (p<0,001), triglycerides (p<0,05), systolic blood pressure (p<0,05) were found to be significantly increased after 3 months of treatment in female patients (n = 30) who were treated with

escitalopram. HamD scores were found to be significantly decreased after 3 months in patients treated with escitalopram (p<0,0001).
Conclusion: Escitalopram caused an increase in especially body weight and waist circumference in patients with major depression.
Key Words: Major Depression, Metabolic Syndrome, Metabolic Parameters, Selective Serotonin Reuptake Inhibitors, Escitalopram

EFFICACY OF HALOPERIDOL VERSUS LEVOSULPIRIDE INJECTION IN PATIENTS WITH ACUTE PSYCHOSIS: A RANDOMIZED DOUBLE-BLIND STUDY

Lead Author: Sagar Lavania, D.P.M., M.D.
Co-Author(s): Samir Kumar Praharaj, M.D., Harinder Singh Bains, MRCPsych, Vishal Sinha,M.D., Abhinav Srivastava, M.D.

SUMMARY:

BACKGROUND: Typical antipsychotics remain the first choice in treating acute psychotic symptoms, whereas atypical ones are considered alternatives. The present study was designed to compare the efficacy of Haloperidol with Levosulpiride in patients with acute psychosis.
METHODS: This was a prospective, double-blind, parallel-group clinical study, involving 60 drug-naive acute psychotic patients. Patients were randomly assigned into two groups, 'A' and 'B', of 30 patients each, and received either intramuscular Haloperidol injection (10-20 mg/day) or Levosulpride injection (25-50 mg/day), for initial 5 days. A blinded rater assessed the subjects using socio-demographic pro-forma, Brief Psychiatric Rating Scale (BPRS), Overt Agitation Severity Scale (OASS), Overt Aggression scale â€“ Modified (OAS-M), Simpson Angus Scale (SAS) and Barnes Akathisia Rating Scale (BARS) at baseline and daily for next 5 days.
RESULTS: Repeated measures ANOVA for BPRS scores showed significant effects of time (F=79.2, df=1.62/93.97, p<.001, Î·2=0.577, Greenhouse-Geisser corrected), and a trend towards greater reduction in scores in Haloperidol group as shown by group Ã— time interaction (F=2.81, df=1.62/93.97, p=.076, Greenhouse-Geisser corrected) with small effect size (Î·2=0.046). For OASS, repeated measures ANOVA showed significant effects of time (F=43.87, df=1.64/95.16, p<.001, Î·2=0.431), but no group Ã— time interaction. Repeated measures ANOVA for OAS-M scores showed significant effects of time (F=66.01, df=1/58, p<.001, Î·2=0.532, Greenhouse-Geisser corrected), and greater reduction in scores in Haloperidol group as shown by group Ã— time interaction (F=4.83, df=1/58, p=.032, Greenhouse-Geisser corrected) with small effect size (Î·2=0.077).
Conclusion: Both Haloperidol and Levosulpride injection were equally efficacious for controlling severity of agitation in acute psychosis; whereas Haloperidol was found to be superior for overt aggression, and possibly for psychotic symptoms.

DEVELOPMENT OF ACUTE PSYCHOSIS AFTER THE REMISSION OF TUBERCULOSIS MENINGITIS: A CASE REPORT

Lead Author: Ayse F. Maner, M.D.
Co-Author(s): Fulya Maner, Assos Prof., Ozlem Cetinkaya, M.D., Derya Ipekcioglu, M.D., Ismet Ustun, M.D.

SUMMARY:

We report a case of 31- year- old male tuberculosis patient who was admitted to our psychiatry department with the complaints of insomnia, verbal aggression, cursing, talking to himself. He did not eat anything due to thoughts of being poisoned by his family for nearly 4 we department with the complaints of insomnia, verbal aggression, cursing, talking to himself. He did not eat anything due to thoughts of being poisoned by his family for nearly 4 weeks. He had jealous

delusions about his wife. He was diagnosed as tuberculosis due to hemoptysis at the age of 24. When he was 28, pleuritis developed. He suffered from back pain and operated for Pott's abces on his medulla spinalis at the age of 29. When he was 30 he suffered from severe nausea. and vomiting and disorientation. He was treated for tuberculosis meningitis and parenchymatous infection. He was treated at the intensive care unit. Neurological examination, lumber punction, cytological examination, BT and MR revealed no pathology including acute hydrocephalus. His general examination revealed no significant abnormality except mild anemia, mild increases in liver enzymes due to antituberculosis medication. After remission of tuberculosis meningitis, psychiatric consultation was needed for depressive state and insomnia. He was prescribed olanzapine 5 mg/day PO, mirtazapine 15 mg/day PO in addition to antituberculosis medication. He was hospitalized due to developing psychotic symptoms. Psychiatric examination revealed that he was oriented, self care was poor, aggressive to the interviewer. He was in decreased psychomotor activation. He avoided eye contact, he had depressive affect, irritable mood, emotional instability, incoherant speech, jealous and persecutory delusions . He had no hallusinations and no insight. He had auditory deficiency due to autotoxicity, of long term streptomisin use. Cooperation was with writing. He was not in the acute phase of tuberculosis. We planned the control cerebral BT of the patient a tuberculosis meningitis and parenchymatous infiltration were shown after one year. Granulomas were disappeared with medication and hypodense areas which remained as sequels (Figure 3). He was prescribed haloperidol 20 mg/day PO, biperidene 2 mg/day PO and quetiapine 600mg/day PO. In a short time confusion developed and psychiatric medication stopped. Hydration and antituberculosis medication were continued and he was oriented again. EEG was within normal limits. Then quetiapine 200mg/day was prescribed and he was in remission in a short time.

We suggest that the psychosis might be related to the tuberculosis meningitis and parenchymatous infection which were well cured at the intensive care unit. This case report is interesting because of late onset of acute psychosis in a tuberculosis patient.

CASE REPORT: CLOZAPINE-INDUCED MYOCARDITIS, IS MANDATORY MONITORING WARRANTED FOR ITS EARLY RECOGNITION?

Lead Author: Tariq Munshi, M.B.B.S.
Co-Author(s): Dr T.A.Munshi, Dr. D.Volochniouk, Dr.T.Hassan, Dr.N.Mazhar.

SUMMARY:

We are presenting a case report of a 21 year old schizophrenic male who developed myocarditis within 3 weeks of starting on clozapine for his treatment resistant psychosis.

Cardiac side effects, including myocarditis, are perceived to be a more rare complication and there are currently no monitoring protocols. According to reports, more than 85% of the cases occur in the first 2 months, and up to 75% within 3 weeks.

Little is known about the pathophysiology of clozapine-induced myocarditis, but the mechanism is postulated to be a type 1 hypersensitivity reaction.However, there is no "classical" presentation of clozapine-induced myocarditis. Mortality rates as high as 50% have been associated with clozapine-induced myocarditis , a delayed diagnosis resulting in poorer outcomes.

The first case report of clozapine induced myocarditis was published in 1980 . Since then, a few more publications have looked into this problem, mostly from Australia . Literature and case reports from other countries remain scarce.

The rates of occurrence appear to range from 0.015% to 0.188%.

Indeed, the high variability of presenting symptoms, along with the high mortality rate, and the absence of known predisposing factors, make it imperative, in our view, to raise more awareness among clinicians. We also suggest an approach to diagnosis and monitoring, based on our review of literature.

Our patient is a 21 year old male diagnosed with schizophrenia following the onset of psychotic symptoms at age 19.

For symptoms control, he was initially tried on Risperidone, then on Quetiapine XR, on Olanzapine, and finally on Aripiprazole. About a year into his illness, he experienced racing thoughts and irritability, and Valproic acid was added. He continued to experience the same psychotic symptoms and Clozapine was initiated, starting at 12.5mg, with view to titrate to 300mg over the course of several weeks while monitoring for side effects.

On day 23 following initiation of Clozapine, the patient presented to the ER with complaints of a throbbing, pleuritic chest pain radiating to the throat, relieved by lying on the side or sitting up. He denied any shortness of breath. He had no nausea, no diaphoresis and no dizziness.

He was diagnosed with myocarditis, clozapine was discontinued immediately, and he remained in the hospital overnight, followed by the cardiology team. He was then discharged on Ibuprofen, with cardiology follow up and a scheduled outpatient transesophageal echocardiogram in 12 days. The results showed normal LVEF, normal systolic and diastolic function,normal valve morphology and no pericardial effusion.

We believe that additional awareness, increased clinical vigilance and patient education, and a more intense monitoring of this condition are warranted. Future directions for research could include validating additional monitoring parameters such as weekly troponins, CRP possibly BNP, to enable earlier detection of this condition.

USE OF EVIDENCE BASED TREATMENT WITH FEW PSYCHOPHARMACOLOGICAL OPTIONS AND FINANCIAL CONSTRAINTS IN THE CHRONICALLY ILL IN A RURAL COMMUNITY IN INDIA

Lead Author: Sabina Rao, M.D.
Co-Author(s): Sydney Moirangthem, MD

SUMMARY:

Introduction: No studies out of India describe the use of low dose Depot Fluphenazine or the use of low doses in severely chronically mentally ill. 80% of people suffering from mental disorders such as schizophrenia, and many other illnesses live in low and middle income countries like India. Recommendations include making mental health care accessible and effective. Improving mental health care in countries such as India, could improve economic outcomes.

Background: The cases were seen under the catchments of a rural satellite clinic of the National Institute of Mental Health and Neurosciences, India, either at home or in a camp setting.

Reasons for presenting these cases: These individuals were significantly ill with chronic psychosis; and were stabilized on low dose depot fluphenazine. The medications used are a part of government supplied "Free Drugs". The list of Free Medications is not exhaustive. Oral fluphenazine is not on the list. The team had very few options in these individuals, who were financially challenged and developed side effects on low doses. Stability helped them live and work in the community.

CASE 1: Ms V- in her 50s, widowed with a three decade history of schizophrenia, intermittently treated with 25mg of depot fluphenazine. She was last treated in 2007.Treatment was restarted in 2012. She was psychotic, inappropriately dressed, wandering away from home frequently, threatening and cursing neighbors. She

was stabilized on 6.25mg of fluphenazine depot but developed significant tremors, stiffness. Injectable Promethazine was used for side effect which helped. Clinical Global Impression (CGI) reduced from 7 to 3. She lives at home, with no disruption in her neighborhood environment.
CASE 2: Mr. A- 58 year old single male, diagnosed with schizophrenia, in 1990.He was lost to follow up for 16 years. In 2012, team found him to be significantly delusional, derailed, and dysfunctional. He was stabilized on 6.25mg of fluphenazine decanoate but developed stiffness and tremors. Injectable promethazine was used for the side effects which helped. CGI dropped from 6 to 2. He is working now.
Case3: Ms. S: 35 year old separated female, diagnosed with schizophrenia, untreated for several years. She lives in a shelter for abandoned women. In 2013, she was found to have derailed and illogical thought processes with hallucinations. Stabilized on 6.25mg of fluphenazine but developed tremors and stiffness on it. Injectable promethazine used for side effects. CGI dropped from 7 to 3.She helps in chores at the shelter.
Discussion: These individuals were very ill and low doses of fluphenazine helped. These patients needed depot injections, given the history of noncompliance. Challenging was the lack of pharmacological options, especially when patients developed side effects. The financial cost of reaching these patients was high but was offset by the stability achieved by the patients, the improvement in their environments.

LITHIUM TOXICITY - INICDENCE, CLINICAL COURSE AND ASSOCIATED RISK FACTORS

Lead Author: Ursula Werneke
Co-Author(s): Michael Ott, M.D., Fariba Jamshidi, M.D.

SUMMARY:
Background: In many countries, lithium remains a first choice for maintenance treatment of bipolar affective disorder (BPAD). Yet in other countries, such the US, anticonvulsants and second-generation antipsychotics (SGRs) have virtually replaced lithium. This trend away from lithium may have occurred due to concerns about the potential for serious adverse effects. Some of these concerns relate to its relatively low therapeutic index and the risk of lithium toxicity. Here we report the incidence of a historical cohort of patients exposed to lithium over a 16 year period.

Method: Review of all patients with BPAD in Norrbotten County in Sweden who had been exposed to lithium since 1997 and determination of the incidence of lithium intoxication per patient and per patient year. Patient years were derived from routine prescribing data yielding number of patients per year exposed to lithium.

Results: We identified 1436 patients who had been exposed to lithium. Of these, 96 had experienced at least one episode of lithium levels of at least 1.5 mmol/l. This translated into an incidence of 0.8/1000 patients and 0.09/1000 patient years. 75% patients agreed to have their records reviewed.

Intoxication was double as common in women, although they were only prescribed lithium 30% more often. Patients aged 65 years or above also had more episodes of intoxications. Yet, older patients had been less likely to take an overdose. 22% of intoxications were picked up only through routine monitoring of lithium levels and 47% were due to intentional overdoses.

Tremor (21%), confusion (18%), ataxia (17%) and fatigue (13%) were the most common symptoms, but most patients were relatively symptom free. Rigidity and muscle weakness occurred in six percent each. Most intoxications were mild with 78% under a level of 2.5 mmol/l. The highest plasma level reported, in the context of an overdose, was 9.26 mmol/l.

11% required dialysis. There were no fatalities.

Infection was the likely cause of interactions in 10% and drug interactions with NSAID, diuretics or ACE inhibitors in 9%. Decreased renal function at the time of the intoxication was present in 26% of all episodes.

Discussion: Lithium has a narrow therapeutic index. Yet, intoxications are relatively rare. The incidence increases with age and somatic co-morbidities. Despite potentially serious and life-threatening consequences, most episodes of intoxications only present with mild or unspecific symptoms. Thus, lithium toxicity may easily be overlooked.

Conclusion: Physicians should not withhold lithium in patients who benefit from it for fear of lithium intoxications. But they must always be alert to the possibility of lithium toxicity in patients, who have or may have access to lithium, even in the absence of major alterations of mental and physical state.

DYSREGULATION OF HYPOTHALAMIC MODULATION IN ANTIPSYCHOTICS INDUCED WEIGHT GAIN IN RATS

Lead Author: Tulin Yanik, Ph.D.
Co-Author(s): Mehmet Ak, M.D. Gizem Kurt, M.S.

SUMMARY:

The mechanism of weight gain due to treatment with antipsychotics treatments; olanzapine and aripiprazole have not been fully understood. Weight gain and food intake are under the control of neuropeptides/hormones, POMC (proopiomelanocortin), CART (cocaine and amphetamine regulated transcript), AgRP (Agouti-related peptide) and NPY (neuropeptide Y) that are synthesized and secreted from the arcuate nucleus (ARC) of hypothalamus. In this study, the alteration of the ARC neuropeptide/hormone levels in rats were determined as one of the weight gain mechanisms. To understand the underlying mechanism of both olanzapine as a serotonin antagonist to induce weight gain and aripiprazole as partial dopamine agonist were orally administrated to healthy male Wistar rats to analyze both the hypothalamic gene expression and peripheral levels of those candidate neuropeptides. In rats food consumption was increased and hypothalamic mRNA levels of NPY, AgRP and POMC were decreased while CART levels did not show any alteration. Consistent with the expression data, circulating levels of NPY, AgRP and Î±-MSH decreased significantly but CART levels were also reduced unexpectedly. In conclusion, it may be presumed that the antagonistic effect of olanzapine on the ARC neurons might be the basis for a dysregulation of the neurohormones secretion which may cause weight gain during treatment. The preliminary studies showed that aripirazole treated rats did not gain weight and increase food consumption.

ASSOCIATIONS OF HELP-SEEKING BEHAVIOUR WITH DEPRESSION AND ANXIETY DISORDERS AMONG GASTROENTEROLOGICAL PATIENTS IN RIYADH, SAUDI ARABIA

Lead Author: Fahad D. Alosaimi, M.D.
Co-Author(s): Fahad D. Alosaimi, M.D., Omar Al-sultaN, Qusay Alghamdi, Ibrahim Almohaimeed, Sulaiman Alqannas

SUMMARY:

ABSTRACT
BACKGROUND: Gastroenterological outpatients have a high prevalence of depression and anxiety disorders. A relatively few research was done on help-seeking behavior among those who suffer from gastrointestinal symptoms with or without psychiatric disorders. OBJECTIVES: To characterize the help-seeking behavior of gastroenterological outpatients and to evaluate if this behavior is linked to the presence of depression and

anxiety. METHODS: A cross-sectional study was carried out in gastroenterology clinics in four hospitals in Riyadh between February and September 2013. Self-administrated questionnaire was developed and administered to patients. Patient Health Questionnaire (PHQ-9) and Generalized Anxiety Disorder (GAD-7) questionnaires were used to diagnose depression and anxiety, respectively. RESULTS: A total of 440 patients completed the study questionnaire. The average age was 36.0Â±12.8 years and 69% of the patients were males. Complaints included abdominal pain (58%), heartburn (29%), diarrhea or constipation (25%), appetite or weight changes (22%), and nausea or vomiting (16%). Depression was diagnosed in 36% while anxiety was diagnosed in 28% of the patients. The first intervention was use of medications (68%) and undergoing endoscopy (16%) while few patients initially used herbs or Islamic incantation (7.5%). This first intervention was done primarily (59%) in private sector rather than government sector (36%). The rates of depression and anxiety in our patients were higher among those who suffered from multiple complaints for longer durations, with less satisfaction with the offered services. CONCLUSION: Depression and anxiety are common comorbidities in gastroenterological outpatient population, especially those who have chronic course of multiple gastrointestinal

WITHDRAWN USE OF ATYPICAL ANTIPSYCHOTICS IN DELIRIUM

Lead Author: Fernando Garcia Sanchez
Co-Author(s): Marta Gutierrez Rodriguez Carmen Moreno Menguiano

SUMMARY:

Introduction:
Delirium is a generally abrupt clinical onset in which an impairment of attention and other brain functions occurs . May occur in up to 40 % of patients admitted to intensive care unit

Clinical manifestations fluctuate throughout the day. Very different symptoms such as disorientation , agitation , drowsiness , hallucinations may occur.
It is particularly common in hospitals and the elderly or patients with pre-existing disease .
It should first rule out systemic causes : infectious, metabolic , toxic and drug .
Methods :
The literature sources Were Obtained through Electronic search of articles in PubMed data base of the last five years .Besides a series of ten cases in our center
Discussion:
It was found atypical antipsychotic That are Effective and safe in treating.
Haloperidol compared showed similar efficacy.
On the effectiveness of preventive treatment of this condition in patients with risk factors the results are inconclusive.

ACUTE MANIA ASSOCIATED WITH ECTOPIC ADRENOCORTICOTROPIC HORMONE SECRETING SMALL CELL LUNG CARCINOMA: A CASE REPORT AND LITERATURE REVIEW

Lead Author: Nuria J. Thusius, M.D.
Co-Author(s): Scott Schmidt, D.O, Tamara Dolenc, M.D., Kemuel Philbrick, M.D.

SUMMARY:

Hypercortisolism has been associated with multiple psychiatric disturbances including affective episodes such as major depression, mania, and hypomania. Causes of hypercortisolism include diseases or hyperplasia of the pituitary or adrenal glands, ectopic adrenocorticotropin hormone (ACTH)-secreting tumors, and exogenous glucocorticosteroid.
We describe a unique patient with known history of bipolar disorder, type 1, who presented with mania and psychotic features but was subsequently diagnosed with an ectopic ACTH-secreting metastatic small cell lung carcinoma. The patient is a 61-year-old female with an 18-year history of bipolar disorder, type I, who presented to

the emergency department (ED) after her son noticed a 10-day change in her behavior which was characterized by irritable mood, increased energy, insomnia, spending money, bizarre behaviors, and paranoid thoughts. Her house had become disorganized and she was observed crawling on the floor, defecating in her bathtub, and storing her feces to fertilize her garden.

Ms. R. had five prior psychiatric hospitalizations for episodes of mania. Previously, when manic, she experienced auditory hallucinations. Her last psychiatric hospitalization was 12 year ago. Medical evaluation revealed hypokalemia and hyperglycemia, which required general medical admission. Due to suspicion of Crohn's disease contributing to her hypokalemia, she underwent an endoscopic gastroduodenoscopy which was unremarkable, and colonoscopy which showed no evidence of active Crohn's disease. She was treated with clonazepam 1 MG, olanzapine 5 mg, and lithium carbonate (900 mg/day). Ms. R continued to have hypokalemia despite potassium replacement and began reporting abdominal pain. Computerized tomography (CT) of the abdomen and pelvis revealed multiple new low-attenuation masses throughout her liver. Ultrasound-guided liver biopsy showed tumor cells consistent with metastatic small cell carcinoma, CT scan of the chest showed fin

Our patient offers the unique example of an established diagnosis of bipolar disorder with recurrent episodes of mania with auditory hallucinations, but interestingly, her psychotic features were qualitatively different during her hypercortisolemia-related mania as she presented with paranoid delusions.

Our patient reminds the clinician of the broad differential diagnosis in medically-complicated patients who present with mania and psychosis. She also illustrates that presenting with patient-unique psychotic features may signal the clinician's suspicion to a different etiology for the patient's presentation, further underscoring the importance of a thorough medical evaluation when a patient with bipolar disorder presents with distinctive psychotic features.

CAUSES AND OUTCOMES OF ACETAMINOPHEN OVERDOSES: THE MAYO CLINIC EXPERIENCE, 2004-2010

Lead Author: Nuria J. Thusius, M.D.
Co-Author(s): J.M. Bostwick, M.D.

SUMMARY:

Background: In the U.S., acetaminophen is the most common self-poisoning agent, the top reason for emergency department visits from overdose, and a leading cause of fatal hepatotoxicity.

Methods: Retrospective analysis of 207 patients treated at a tertiary medical center for excessive acetaminophen exposure.

Results: Both intentional and unintentional acetaminophen overdoses occurred in a background of psychiatric disorder or alcohol dependence, most commonly of major depression (52%) or alcohol dependence (42%). Â½ overdoses -- 71% in patients with pain disorders -- were unintentional. Alcohol complicated intentional (21%) and unintentional (13%) overdoses, requiring hospitalization or liver transplantation more commonly in alcohol-using patients (p value 0.014). When alcohol was involved, less amount of acetaminophen tablets was tended to be taken (p <0.0001). 65% received acetylcysteine (33% - within 8 hours). Overdose outcomes were benign: 5 (3%) were listed for liver transplant, 3 (2%) were transplanted and 2 (1%) died before receiving a liver.

CLINICAL COURSE AND PROGNOSIS OF DEPRESSION BY PATIENTS WITH LUNG CANCER: A 1-YEAR, FOLLOW-UP STUDY

Lead Author: Zehra S. Ustunsoy Cobanoglu, Ph.D.

SUMMARY:
AIM: The objective of the study to monitor the clinical course and prognosis of the depression detected by lung cancer patinets for a period of one year.
METHOD: Between 01 june 2010 and 31 december 2012 at Dr.Suat Seren Chest Diseases and Surgery Training and Research Hospital in Izmir, by 125 patients depresive disorder has been identified, out the patients who were referred to psychiatry clinics. The sociodemographic form, the Hospital Anxiety and Depression Scale (HADS), Hamilton Depression Rating Scale (HAM-D) have been applied to these 125 patients, whereafter the patients are evalueted on 1. 4. 8. and 12. month in accordance with the Hospital Anxiety and Depression Scale (HAD), Hamilton Depression Rating Scale t(HAM-D) scale were evaluated.
RESULTS: Only 81 patients out of the 125 were able to complete the 1 year follow-up study. The observed results for the severity of depressions are as follow: 14,8% (N=12) major depression; 56,7% (N=46) moderate depression; 28,32% (N=23) mild depression. The respons to the applied pharmacological treatment was better in the first 4 months but after sixth month an increase in the the depresive symptoms was observed and on the 12. month an increase in the severity of the depression was observed. Furthermore on the 12. month next to the depresive symtoms psychotic symtoms (18,5% - N=15) and delirium (13,5% - N=11) were observed. Interestingly by none of these patients suicidal toughts and / or attempts were found. A significant relationship between the severity of depression and gender, social support, life stressors and / or type of treatment was not found.

RELIABILITY AND VALIDITY OF THE KOREAN VERSION OF THE MODIFIED ADULT ATTACHMENT ACALE (ECR-M36) FOR THE USE IN BREAST CANCER PATIENTS

Lead Author: Jungmin Woo, M.D., Ph.D.

Co-Author(s): Byunggu Jang, M.D.

SUMMARY:
Objective: Modified Experiences in Close Relationships(ECR-M36) scale was developed for medically ill, older individuals in 2008 (Toronto, Canada, department of psychosocial oncology and palliative care, Princess Margaret Hospital). It showed satisfactory reliability and validity already. This study aimed to analyze of the Korean version of Modified Experiences in Close Relationships (K- ECR-M36) questionnaire.

Methods: 216 post operative breast cancer patients from a Kyungpook National University Hospital (KNUH) and Kyungpook National University Medical Center (KNUMC) were recruited to fulfill the Korea ECR-M36. A variety of scales were used to analyze reliability and validity of Korea ECR-M36. Anxiety and Depression scale, Quality of life scale and another attachment scale were used. A retest of the Korea ECR-M36 was conducted at six-months intervals.

Results: The Korea ECR-M36 showed good internal consistency and reasonable test-retest reliability. The avoidance and anxiety subscales demonstrated a convergent validity with the Revised Adult Atachment Scale(RAAS), World Health Organization Quality of Life Scale Abbreviated Version (WHOQOL-BREF) and Hospital Anxiety and Depression Scale (HADS). Korea ECR-M36 shows a proper discriminant validity with Hospital Anxiety and Depression Scale (HADS) which is divided into a low score group(HADS <13) and a high score group (HADS >=13).

Conclusion: The total psychometric properties of the Korea ECR-M36 were adequate. In order to render it more congruent with Korea culture, an emendation of some items should be considered.

COMMUNICATION IN HEALTH CARE: FACTORS THAT INTERFERE IN THE MEDICAL-PATIENT RELATIONSHIP

Lead Author: Guillermo Rivera Arroyo, M.D., M.P.H., Ph.D.

SUMMARY:

Starting from a critical discussion of the concept "difficult patients to help": to identifying factors that perturbs the communication and the relationship between medical â€“ patient, which can be reflect in "difficult to help" (A statement developed by Sharp, Myou and Seagroatt in 1994 and agreed by Hahn in 2001). Method: In a test at random to 74 patients was applied in the Hospital Anxiety and Depression Scale (HADS), Confusion Assessment Method (CAM) and Karnofsky Performance Scale; the questionnaire difficult to help (DTH), the HADS and the CAM (both about to patient) was applied to professional. The association study, between difficult of the medical and other variables, was did using the test t to the numerical variables and the test chi-square (Ï‡2), and when were necessary, the exact test of Fischer an the analyze of variance (ANOVA), to the categorical variables. To get which factors show first the mayor difficult of the medical help patient, was developed logistical regression model, which variable dependent was the category: difficult to help, and variables of control was: physical dependence grade for organic sickness, source from the medical, all the questions of DTH, psychopathological symptoms of the patients perceived for the medical and the rate of success / errors diagnostic of the medical. Results: The difficult of the medical to help to patient presented a rate of 38.3%; relating to the characteristics of the patient the unique characteristic statistical significant ($p < .05$), for the hardly difficult to help, was with patients with big physical problems. Relating to perceptions of the medical, were presented association statistical significant ($p < .05$), with hardly difficult the following perceptions: that social psychological aspects were affective the sickness of the patient (88.9%), to have lower adherence to therapeutic recommendations (27.8%) after that to consider the presence of depressive symptoms (61.1%) and anxious (72.2%) in the patient. The multivariate analysis of the difficult to help to patient, like independent variables, those which presented with difficult (medical source not form Santa Cruz, the medical considers that the social psychological factors affect to the sickness, that the patient have lower adherence to treatment, that the patients has depressive and anxious symptoms) showed when the medical considered when the patients was anxiety symptoms difficult to help increased in 19 times more the possibility to have difficult to help this patient, in relationship not to consider the medical that the symptoms ($p < .05$) and the medical not to be from Santa Cruz de la Sierra increased in 15 times more the difficult to help this patient, comparing with a medical to be from the city ($p < .05$).

PROPOSAL FOR A NEW (ANXIETY) DISORDER TO THE DSM-6 TASK FORCE: RELIGIOUS FUNDAMENTALISM

Lead Author: Jean-Marie Decuypere, M.D.

SUMMARY:

Religious fundamentalism is a dangerous plague causing death and destruction worldwide. Health professionals cannot afford to disengage when a disease is spreading. The very essence of the problem is an erroneous form of idealism that must be challenged. Curing a restricted mindset is a hard nut to crack but a rational approach flavored with humor might be a helpful start.

In this presentation religious fundamentalism is half-jokingly considered as a mental disorder. By using the DSM as a template to define the signs and symptoms of the disorder, both the DSM and religious fundamentalism are ridiculed.

The end result, however, is a description that makes sense.
Since religious fundamentalism is bound to be recognized as a mental disorder, it is unavoidable that one day it will find its place in the DSM. This proposal is a preview of the coming debate.

CAN INTRINSIC RELIGIOSITY IMPACT BRAIN NEUROPLASTICITY IN DEPRESSED INPATIENTS?

Lead Author: Bruno Paz Mosqueiro, M.D.
Co-Author(s): Marcelo Pio de Almeida Fleck, Ph.D., Neusa Sica da Rocha, Ph.D.

SUMMARY:

Introduction
Depression is a chronic and recurrent psychiatric disorder with serious impact in mental health. Epidemiological studies mainly report inverse associations of religiosity to depression. Nonetheless, few empirical data evaluates biological correlates that may mediate this relationship.
Brain-Derived Neurotrophic Factor (BDNF) is a neurotrophin associated with brain neuroplasticity. BDNF is thought to be a potential biological marker in depressive disorders and may predict antidepressant treatment response in depression. BDNF is associated stress resilience and represent a potential target in neurobiology research.
Our aim is to evaluate weather BDNF serum measures are associated with intrinsic religiosity in depressed inpatients. Our hypothesis is that higher intrinsic religiosity may be associated with higher BDNF reflecting a possible biological pathway linking benefits of intrinsic religiosity and mental health.

Methods
analysis of BDNF serum measures was performed in a subgroup of 64 of 143 depressed patients in a prospective cohort study in a psychiatry unit in South Brazil. BDNF serum levels were evaluated in the first 72 h of admission and 24 h before discharge. Informed consent was assigned according to Ethical Committee. Diagnostic of depressive episode was performed by MINI. Additional protocols include socio-demographic and clinical data, Duke University Religion Index and Resilience Scale. Kolmogorov-Smirnov and Shapiro-Wilk, T-Student, Chi-Square and Mann-Whitney tests were performed with SPSS 20.0 in statistical analysis. BDNF serum levels were compared in High intrinsic religiosity (HIR) and Low intrinsic religiosity (LIR) groups of depressed inpatients. D-Cohen test evaluated the effect size difference in BDNF serum levels in the groups.

Results
Comparing depressed patients with HIR and LIR, analysis showed no statistically significant difference in age, gender, ethnicity, marital status, occupation and socioeconomic level between groups. Patients with LIR statistically present higher educational levels, and lower admission HAM-D, BPRS, GAF and CGI scores. Those with higher intrinsic religiosity reported more social support, fewer suicide attempts and higher resilience, with a large effect size difference between groups (1.02). There was no difference in BDNF scores in admission between HIR and LIR groups. At discharge, depressed inpatients with HIR presented higher mean BDNF serum levels (51.04 vs. 39.5, p=0.03, M.W.) with a D-Cohen effect size of 0.62.

Conclusion
In the present study it has been identified an association of BDNF, a biological marker of brain neuroplasticity, with intrinsic religiosity, suggesting a possible pathway linking religiosity and benefits in mental health. The comprehension of neurobiological correlates of religiosity and mental health may address new search routes for research and more effective prevention and treatment strategies to depression.

PSYCHIATRIC MORBIDITY IN CHURCHES: A COMPARATIVE STUDY OF SYNCRETIC AND PENTECOSTAL CONGREGATIONS IN ILUPEJU, LAGOS, NIGERIA

Lead Author: Mbong A. Tangban, M.B.B.S.
Co-Author(s): UDOFIA OWOIDOHO, M.B.B.S., F.W.A.C.P., AINA FRANCIS, M.B.B.S., F.W.A.C.P., BELLO- MOJEED M.A., M.B.B.S., F.W.A.C.P..

SUMMARY:

Background: The syncretic and pentecostal churches are two Christian protestant congregations that have different modes of worship though both of them use the Bible as a book of reference for their teachings. These churches sometimes serve as informal referral systems to psychiatric hospitals. Previous studies in West Africa, have examined the psychiatric morbidity in syncretic churches among those going through difficulties but there is paucity of studies on the psychiatric morbidity of the regular congregation of pentecostal and syncretic churches.

Objectives: The present study was designed to compare the prevalence of psychiatric morbidity between members of syncretic and pentecostal congregations in Ilupeju, Lagos, Nigeria.

Methodology: A random sample of study participants who met the inclusion criteria were selected. Socio-demographic questionnaire, GHQ-12 (General Health Questionnaire - 12 item version) and DSES (Daily Spiritual Experience Scale) were administered to them. Those that had a GHQ score of 3 or greater than 3 and 20% of those that had a GHQ score less than 3 had the modules of depression, anxiety, alcohol abuse and dependence of the SCID-P administered to them. The data was analyzed with the Statistical Package for Social Sciences, 16th edition (SPSS-16).

Results: The weighted prevalence of psychiatric morbidity in the syncretic church and pentecostal churches were 31.4% and 29.6% respectively, the difference was not statistically significant (X2= 0.158, p=0.691). The prevalence of psychological distress in the syncretic church (13.2%) was less than the pentecostal church (24.2%) and the difference was statistically significant(X2= 7.234, p= 0.007). The prevalence of psychiatric disorders in the syncretic churches (16.4%) was also less than that of the pentecostal churches (21.3%) but the difference was not statistically significant (X2=1.473, p=0.225).

When binary logistic regression was used, the independent variables that were significantly associated with psychological distress in all participants were the church type, low monthly income and less frequent daily spiritual experiences. There was an association between the total daily spiritual experience scale (DSES) score and psychological distress (p= 0.041).

The clinical variable that was associated with psychiatric disorders in all the participants was having a history of chronic illness (p=0.051). In the syncretic church, having moderate to low spiritual experiences was associated with psychiatric disorders (p=0.0465) while for the pentecostal church having a chronic medical illness (p=0.014) and not changing their church (p=0.0404) were associated with psychiatric disorders.

Conclusion: There was no significant difference in the prevalence of psychiatric morbidity in the two church congregations.

TWITTER ADDICTION AND PERSONALITY TRAITS IN MEDICAL STUDENTS

Lead Author: Ahmad Alhadi, M.D.
Co-Author(s): Shomoukh AlNashmi, M.S., Reem Basalasel, M.S., Abrar AlTurki, M.S., Eman AlShahrani, M.S., Alaa AlJamili, M.S.,

SUMMARY:

Introduction:

Social networking sites are virtual communities where users can create and share many things. Twitter is a free online social networking service where users can send and read short messages (140-

character). It has grown in popularity within the last few years. In 2013, Saudi Arabia has the highest percentage of Internet users who are active on Twitter worldwide. Also, Saudi Arabia has the highest number in the Middle East with 2.4 million active Twitter users. Some studies show that the addiction of social networking services has increased.
Due to insufficient studies on Twitter and increasing number of users in our region, this study focused on the prevalence of Twitter addiction among King Saud University (KSU) medical students in Riyadh. Also, we want to know if there is a relationship between Twitter addiction and personality traits.
Methodology:
Our study was carried out in KSU in Riyadh. We included all medical students in the sample. It was conducted in April 2014. This is a cross-sectional study. Due to the lack of valid Twitter addiction scale in Arabic, We designed one. We used a Facebook addiction scale as a reference where we translated the same items and we changed the word Facebook to Twitter with back translation to guarantee the accuracy of translation. We included big five factors personality scale to assess personality traits. We build an online questionnaire that includes: demographic data with Twitter use, Twitter addiction scale and big five factors personality scale. Pilot study was conducted on 20 female students from all academic years to make sure that questionnaire is OK. We sent an email with the link to all medical students--about 1,400 students. Sample power is found to be 165 participants. We got ethical approval from Community Medicine Department IRB committee for this study.
Result:
Total number of participants is 170 students. The result shows that the prevalence of Twitter addiction among medical students in KSU in both genders is very high (94% in males and 92% in females). There were no significant correlations between Twitter addiction and personality traits in male. While in female, neuroticism was negatively correlated to Twitter addiction.
Conclusion:
In conclusion, the prevalence of Twitter addiction in medical students in KSU is high, indicating a problem that needs to be addressed. Our study could be considered as a foundation to future researches that can be conducted among larger population in the society. We can generalize our results among medical students in all medical schools in Saudi Arabia.

WORKFORCE MIGRATION ACROSS EUROPE - VIEW FROM THE TRAINEES

Lead Author: Mariana Pinto da Costa, M.D.

SUMMARY:
Workforce migration of health professionals is influencing countries' health services. In this new global context it is worthwhile to look for actual and future migration by recognizing the push factors that pressure people to leave the donor country, the pull factors that make the recipient country seem attractive, while confirming patterns and duration of migration.
Despite the concern for migration has moved to the forefront agendas raising questions, there is lack of data of migration flows.
As an attempt to explore migration among psychiatry trainees, the European Federation of Psychiatry Trainees (EFPT) has done a cross-sectional European multicentre study, collecting data from 2281 psychiatric trainees across 33 countries, assessing opinions and experiences of international migration.
The results provided by this study bring an overview of migration among psychiatric trainees. The majority of the trainees had not had a short-mobility experience in their lifetime, but those that went abroad were satisfied with their experiences, reporting that these influenced their attitude towards migration positively.
"Pull factors" for migration were mostly academic and personal reasons, whereas

"push factors" were mainly academic and financial reasons.
This data presentation will permit to have a notion of the migration flows and the different cultural challenges faced on the way to a psychiatry career, raising awareness on the current trends and possible systems of support.

UTI AS A CAUSE OF WORSENING PSYCHOSIS: PROMPT DIAGNOSIS AND TREATMENT MAY REDUCE THE LENGTH OF HOSPITALIZATION AND SCREENING MAY PREVENT READMISSION

Lead Author: Muhammad Asif, M.D.
Co-Author(s): Mehr Iqbal, M.D, Mubeena Naeem, M.D, Justin Pratt, MS4, Asghar Hossain, M.D

SUMMARY:
Objective: Acute psychosis is affiliated with urinary tract infection (UTI). We found several research article including prevalence study , showed close relation between these two entities. The aim of our study is to explore the further relationship between UTI and Psychosis. We also want to see how this relationship can be effectively manage to reduce the hospital stay & to screen at the time of outpatient visit.
Methods: We conducted literature search of PubMed and other research articles for UTI and Psychosis. We focused on articles that are strongly affiliated with our research topic. In a prevalence study conducted from January 2010 to April 2012 at Georgia Health Sciences University Medical Center, Augusta, recruited 136 adult subjects (mean age = 42.8 years): 57 inpatients with an acute relapse of DSM-IV schizophrenia, 40 stable outpatients with DSM-IV schizophrenia, and 39 healthy controls from the community.
In another study , using chart review subjects aged 18â€“64 years who were hospitalized between January 2010 and April 2012 for an acute episode of DSM-IV nonaffective psychosis (schizophrenia, schizoaffective disorder, psychosis not otherwise specified, or delusional disorder; n = 134), affective psychosis (bipolar or major depressive disorder with psychotic features; n = 101), or alcohol detoxification (n = 105), and we recruited healthy controls (n = 39). We also have 7-8 case studies in our Psychiatric ward who have admitted with worsening of psychosis with UTI.
Results:
Urinary tract infection was defined as positive leukocyte esterase and/or positive nitrites on urinalysis and â‰¥ 5â€“10 leukocytes/high-powered field on urine microscopy. In 1st study , 35% of acutely relapsed subjects, versus 5% of stable outpatients and 3% of controls, had a UTI ($P < .001$). Only 40% of subjects in the acute relapse group classified as having a UTI were treated with antibiotics during hospitalization. After analyses were controlled for gender and smoking status, subjects in the acute relapse group were almost 29 times more
likely to have a UTI than controls. In the 2nd study , The prevalence of UTI was 21% in nonaffective psychosis, 18% in affective psychosis, 12% in alcohol use disorders, and 3% in controls. After controlling for potential confounders, UTI was almost 11 times more likely in subjects with nonaffective psychosis than controls.
In our case studies of psychotic patient who were admitted in acute psychiatric unit due to psychosis, one of the patient hospitalized 9 times due o and UTI was positive in 3 times at the time of admission.
Conclusion: Based on our selected research studies review and case studies , there is association between UTI and psychosis. And prompt diagnosis in inpatient at the time of admission will reduced the hospital stay and screening for UTI during regular visit of patient suffering from chronic psychotic condition like schizophrenia and schizoaffective would reduce the readmission rate.

GENETIC SUSCEPTIBILITY FOR SCHIZOPHRENIA IN TURNER SYNDROME: A CASE REPORT

Lead Author: Eduarda Batista, M.D.
Co-Author(s): Clarissa R Dantas, M.D, Ph.D

SUMMARY:
Turner syndrome is a sex chromosomal disorder characterized by 45X0 monosomy or 45X0/46XX mosaic karyotype. Individuals with Turner syndrome and Schizophrenia are rare, nevertheless Turner syndrome occurs approximately threefold more frequently in female schizophrenics compared to the general female population. There are a few case reports of concomitant both illness worldwide and there are several studies suggest that the X-chromosome may contain a susceptibility gene for this disorder. Moreover, the majority of those case reports have a mosaic karyotype, however we present a case of a 44 years old woman with Turner Syndrome, 45X0 monosomy, and schizophrenia. Our case discuss the genetic susceptibility for Schizophrenia in Turner syndrome and remind us a potential involvement of X chromosome in develop schizophrenia.

THE ROLE OF NOVEL ALLOSTERIC MODULATOR, PAOPA, IN PREVENTING AND REVERSING ATTENTIONAL IMPAIRMENTS IN AN ANIMAL MODEL OF SCHIZOPHRENIA

Lead Author: Jay Bhandari, B.Sc.
Co-Author(s): Ritesh Daya, B.Sc., Edwin Wong, Aaron Edward, Rodney Johnson, Ph.D., Ram K. Mishra, Ph.D.

SUMMARY:
Schizophrenia is a disease whose present treatment is not completely effective and devoid of side effects. As it is a major disease burden and poses a significant economic and health care cost, research into new and improved treatment for schizophrenia remains necessary. While current drugs block the binding of agonists to receptors, allosteric modulators are also being studied for their therapeutic potential for various disorders. These compounds bind to a site separate from the orthosteric site and modulate the binding of agonists by inducing a conformational change in the receptor. Thus, where antipsychotics act as blockers, allosteric modulators act as fine-tuners of the endogenous response of the receptors, and additionally have no functional activity in the absence of agonists. We have previously studied an allosteric modulator, PAOPA, which is derived from an endogenous brain peptide (L-prolyl-L-leucyl-glycinamide, PLG), for its ability to ameliorate schizophrenia-like symptoms in pre-clinical animal models. Our published reports demonstrated that PAOPA is able to prevent positive- and negative-like symptoms and impairments in pre-pulse inhibition. However, aside from the positive and negative symptoms, cognitive deficits are also a core feature of the disease that predict functional outcome. Since PAOPA's effects on schizophrenia-like cognitive symptoms have not yet been studied, the present study investigated the ability of PAOPA to ameliorate impairments in one such cognitive domain, attention, in a pre-clinical animal model using the rodent 5-choice serial reaction time task.

NEUROPSYCHOLOGICAL ASSESSMENT IN PATIENTS WITH SCHIZOPHRENIA AND IT'S CORRELATION WITH FUNCTIONALITY PRELIMINARY RESULTS

Lead Author: Juliana S. Cunha, M.D.
Co-Author(s): Simone M. Felipe, Priscila M. Mundim, Lucas G. Jr., Fabiana B. de Araujo, Flavia C. da Mata Leite, M.D. , Lourenco T.T.G.M.V.

SUMMARY:
Introduction: Cognitive impairment is considered a core feature of schizophrenia. It is reported since Kraepelin (1896), who has named it "Dementia Praecox". Since then, it has been the focus of several studies that indicate as main altered

processes: executive function, attention and memory. These impairments have been linked to a major impact on the functionality and quality of life of these patients. Objectives: Assess cognitive domains in schizophrenia patients and correlate them with functionality and quality of life. Method: The sample consisted of ten outpatients diagnosed with schizophrenia, which were submitted to a battery of neuropsychological tests. Their records were researched to support the data. We also evaluated the quality of life through the Portuguese version of WHOQOL-Bref (Vaz-Serra et al., 2006). Results and conclusion: Impairments were found in several domains of cognition among the evaluated patients, including executive deficits, attention disturbances and processing speed. We have noticed significant negative correlations between them and the quality of life. Therefore, our results seem to emphasize that neurocognitive constructs should be potential targets for intervention to promote improvement of psychosocial functions.

TREATMENT RETENTION AND CLINICAL AND REHABILITATION OUTCOMES OF PATIENTS WITH SEVERE SCHIZOPHRENIA: A 6-YEAR FOLLOW UP

Lead Author: Juan J. Fernandez-Miranda, M.D., Ph.D.
Co-Author(s): Sylvia DÃaz-FernÃ¡ndez, MHN., Eva TubÃo-Arcos, MHN.

SUMMARY:
Background: to increase treatment compliance is important to reach clinical and rehabilitation goals in people with severe schizophrenia.

Objectives: To know the retention in treatment (and reasons for discharge) of people with severe schizophrenia enrolled in a specific programme for them and factors related, and also treatment (clinical and functional) outcomes.

Methods: A 6-year prospective, observational, open-label and not randomized study of patients with severe schizophrenia (IDC 10: F 20; CGI=>5) undergoing specific severe mental illness programme. The study was conducted from January 2008 to January 2014 in GijÃ³n (Spain) (N=200; average age=43.1+/-10.6 years old; 58% men and 42% women). Assessment included the Clinical Global Impression severity scale (CGI-S), the Camberwell Assessment of Needs (CAN) and the WHO Disability Assessment Schedule (WHO-DAS). Time in treatment and reasons of discharge were measured. Laboratory tests (haematology, biochemistry and prolactin levels), weight, medications prescribed and adverse effects were reported.

Results: CGI at baseline was 5.86+/-0.7. After six years 48% of patients continued under treatment (CGI= 4.31+/-0.8; $p<0.01$); 31% were medical discharged (CGI=3.62+/-1.6; $p<0.001$) and continued non intensive treatment in mental health units; DAS decreased in the four areas (self-care and employment $p<0.01$; family and social $p<0.005$) and also CAN (17.2+/-2.8 vs. 9.1+/-3.2; $p<0.01$); 7% had moved to other places, continuing treatment there; 8% were voluntary discharges. Eight patients dead during the follow up; three of them committed suicide (1.5%). 45% of all of them were treated with atypical long-acting antipsychotics, with good tolerability and few side effects or relevant biological parameters alterations (among them, only 4% were voluntary discharges).

Conclusions: Retention of severe mentally ill patients with schizophrenia in a specific programme was really high, getting remarkable clinical and functional improvement. Long-acting medication seemed to be useful in improving treatment adherence.

DIFFERENTIAL BIOMARKERS IN SCHIZOPHRENIA

Lead Author: Leticia GarcÃa-Ã Ivarez, Ph.D., Psy.D.
Co-Author(s): MÂª Paz GarcÃa-Portilla, M.D., Patricia BurÃ³n-FernÃ¡ndez, Psy., Eva DÃaz-Mesa, Psy., Susana Al-Halabi, Ph.D, Pilar SÃ¡iz, M.D., Julio Bobes, M.D.

SUMMARY:
Introduction: Schizophrenia is not only a mental disorder but also has other components affecting the physical part of the body (1). Several studies have suggested that neuroinflammatory processes may play a role in schizophrenia pathogenesis, at least in a subgroup of patients (2).
Aims: This poster reported the preliminary results of a project aiming to find schizophrenia biomarkers. We present the biological parameters of patients with schizophrenia and controls according to the lab results.
Methods: Cross-sectional, naturalistic study. Inclusion criteria: DSM-IV diagnosis of schizophrenia; age >17 years; and written informed consent given.
Results: 123 patients with schizophrenia and 80 controls. Patients with schizophrenia: 26% normoweight, 34.1% overweight and 39.8% obesity; 57.4% abdominal obesity; 11.5% high blood pressure; 14.5% metabolic syndrome. Lab results: high glucose = 10.2% schizophrenia, 1.3% control (chi-square = 6.09, p = 0.01); high triglycerides = 25.8% schizophrenia, 3.8% control (chi-square = 16.07, p < 0.0001); low HDL cholesterol = 22.5% schizophrenia, 6.5% control (chi-square = 8.83, p = 0.003); high C-reactive protein = 24.1% schizophrenia, 10.3% control (chi-square = 5.95, p = 0.015);
homocysteine = 62.6% schizophrenia, 37.7% control (chi-square = 11.51, p = 0.001).
Conclusion: There are differences in biological parameters between patients with schizophrenia and controls, so biological biomarkers may play a role in schizophrenia pathogenesis.
References:

1. Kirkpatrick B. The concept of schizophrenia. Rev. Psiquiatr. Salud. Ment. 2009;2:105â€“107.
2. Tomasik J, Rahmoune H, Guest PC, Bahn S. Neuroimmune biomarkers in schizophrenia. Schizophr Res. In press.

SEVERE MENTAL DISORDERS (SCHIZOPHRENIA AND BIPOLAR DISORDER) CAN BE VIEWED AS MULTI-SYSTEM INFLAMMATORY DISEASE

Lead Author: MarÃa Paz GarcÃa-Portilla, M.D., Ph.D.
Co-Author(s): Leticia GarcÃa-Ã Ivarez, Ph.D.,Psy.D., Patricia BurÃ³n-FernÃ¡ndez, Psy., Eva DÃaz-Mesa, Psy., Susana Al-Halabi, Ph.D, Pilar SÃ¡iz, M.D., Julio Bobes, M.D

SUMMARY:
Introduction: Schizophrenia and bipolar disorder are not only mental disorders but also have other components affecting the physical part of the body (1). Several studies have suggested that neuroinflammatory processes may play a role in severe mental disorders pathogenesis, at least in a subgroup of patients (2, 3).
Aims: This poster reported the preliminary results of a project aiming to find schizophrenia and bipolar disorder biomarkers. We present the biological parameters of patients with schizophrenia and patients with bipolar disorder according to the lab results.
Methods: Cross-sectional, naturalistic study. Inclusion criteria: DSM-IV diagnosis of schizophrenia and bipolar disorder; age >17 years; and written informed consent given.
Results: 123 patients with schizophrenia and 102 patients with bipolar disorder.
Body mass index (BMI): patients with schizophrenia: 26% normoweight, 34.1% overweight and 39.8% obesity vs patients with bipolar disorder: 20.4% normoweight, 40.9% overweight and 38.7% obesity (n.s.).
Abdominal obesity: 57.4% schizophrenia vs 71.4% bipolar disorder (chi-square = 4.43,

p = 0.035); High blood pressure: 11.5% schizophrenia vs 14.9% bipolar disorder (n.s.); Metabolic syndrome: 14.5% schizophrenia vs 23.8% bipolar disorder (n.s.). Lab results: high glucose = 10.2% schizophrenia, 13.7% bipolar disorder (n.s.); high triglycerides = 25.8% schizophrenia, 36.3% bipolar disorder (n.s.); low HDL cholesterol = 22.5% schizophrenia, 21% bipolar disorder (n.s.); high C-reactive protein = 24.1% schizophrenia, 21.1% bipolar disorder (n.s.); homocysteine = 62.6% schizophrenia, 50% bipolar disorder (n.s.).
Conclusion: There are no differences in biological parameters between patients with schizophrenia and bipolar disorder, so biological biomarkers may play a role in the pathogenesis of both disorders. However, patients with bipolar disorder show more commonly abdominal obesity.
References:
1. Kirkpatrick B. The concept of schizophrenia. Rev. Psiquiatr. Salud. Ment. 2009;2:105â€“107.
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3. Leboyer M, Soreca I, Scott J, Frye M, Henry C, Tamouza R, et al. Can bipolar disorder be viewed as a multi-system inflammatory disease? J Affect Disord;141(1):1-10.

COMORBID OBSESSIVE COMPULSIVE DISORDER AND SOCIAL FUNCTION IN PATIENTS WITH CHRONIC SCHIZOPHRENIA

Lead Author: Suk-hoon Kang, M.D.
Co-Author(s): Hae Gyung Chung, M.D. , Jin Hee Choi, M.D. , Tae Yong Kim, M.D., Ph.D. , Hyungseok So, M.D.

SUMMARY:

Objectiveï¼š
Obsessive-compulsive disorder (OCD) is known to be common psychiatric comorbidity associated with poor prognosis in schizophrenia. Prevalence rates for OCD as high as 30% have been reported in schizophrenia populations, as compared to 1.2-2.4% in the normal population. A substantial proportion of individuals with schizophrenia reported clinically significant obsessive or compulsive symptoms, which might appear early in the developmental course of the illness. Comorbid OCD in schizophrenia can lead to a considerable psychosocial dysfunction and can influence significantly quality of life and social functioning in patients. This study aimed to evaluate the prevalence of OCD, and the relationship among obsessive-compulsive symptoms, severity of psychopathology, and social functioning in patients with chronic schizophrenia.

Methodsï¼š
We interviewed 138 symptom-stable inpatients who had been on a constant dose of antipsychotics for at least 1 month prior and diagnosed as chronic schizophrenia. Subsequently, patients were classified according to the existence of OCD as evaluated using the Structured Clinical Interview for DSM-IV Axis I disorders (SCID-I) and the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). Demographic characteristics, the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), Korea-Positive and Negative Symptom Scale (PANSS), Korean Modification of the Scale to Measure Subjective Well-Being under Neuroleptic Treatment (SWN), the Korean Version of the Calgary Depression Scale for Schizophrenia (CDSS) and the Korean Personal and Social Performance (PSP) were performed. Comparison between two groups was done by an independent t-test and Chi-square, and regression analysis was used to evaluate association between social functioning and obsessive-compulsive symptoms in chronic schizophrenia.

Resultsï¼š
The prevalence of OCD in chronic schizophrenia patients was 18.1%. There

was no significant difference in comparison of patients taken atypical antipsychotics between two groups (Ï‡2=2.477, p=0.790). Schizophrenia with comorbid OCD showed significantly earlier onset of schizophrenia disease (t=-2.762, p=0.007), higher PANSS-general psychopathology (t=6.340, p<0.001) and total score (t=3.614, p=0.001), lower measure of PSP (t=-8.741, p<0.001) and SWN scale (t=-2.298, p=0.025) as compared to those without comorbid OCD. Social functioning (PSP) was affected with positive (Î²=-0.339, p<0.001) and negative symptoms (Î²=-0.155, p=0.020) in PANSS scale and Y-BOCS (Î²=-0.526, p<0.001)

Conclusionï¼š
Comorbidity of OCD was relatively more frequent in patients with chronic schizophrenia. Obsessive-compulsive symptoms might impact on personal and social performance as well psychotic symptoms. Longitudinal study will be needed to investigate relation between social functioning and obsessive-compulsive symptoms in schizophrenia with large samples including acute-stage schizophrenia and outpatients.

THE ASSOCIATION OF TRAUMATIC EXPERIENCES WITH ANXIETY SYMPTOMS, HOPELESSNESS AND SUICIDAL IDEATION IN SCHIZOPHRENIA

Lead Author: Nesrin Karamustafalioglu, M.D.
Co-Author(s): Ozgur Deniz Deger, M.D., M.C. Ilnem M.D., Ozgur Onder M.D.,

SUMMARY:
Background: Studies investigating the relationship between trauma and schizophrenia have recently been increasing in number. It has been demonstrated that trauma may either be a direct cause of psychotic disorders or increase the severity of disease symptoms and decline functionality. However, data about the impact of trauma on anxiety symptoms, hopelessness and suicidal thoughts in schizophrenia is limited. Aim: This study aimed to explore the impact of trauma on the severity of anxiety symptoms in schizophrenia patients and to investigate the relation of traumatic experiences with suicidal thoughts and hopelessness. We aim to emphasize the importance of trauma history and anxiety symptoms in schizophrenia. Material and Methods: Initial data concerning all adult patients consecutively admitted to BakÄ±rkÃ¶y Research and Training Hospital for Psychiatry,Neurology and Neurosurgery Psychotic Disorders Treatment and Investigation Center were collected. 48 male and 37 female patients aged between 18-65 years, diagnosed as Schizophrenia according to the DSM-IV TR diagnostic criteria and educated enough to provide written information were included. Verbal informed and written informed consent was obtained from all patients before the study and those who were not volunteers were excluded. Data about patients included in the study was collected with the standard sociodemographic form of the Psychotic Disorders Treatment and Investigation Center. All patients were assessed with the Structured Clinics Interview for DSM-IV Axis I Disorders (SCID-I), Positive and Negative Syndrome Scale (PANSS), Beck Anxiety Inventory (BAI), Beck's Pessimism Scale, Traumatic Experiences Checklist (TEC), Suicidal Ideation Scale (SIS) and BARNES Akathisia Scale. Statistical measurement was performed via SPSS 17.0 and level of statistical significance was measured to be <0.05.
Results: When 85 patients included in the study were evaluated according to sexual distribution 56,5% (n=48) were found to be male while as 43,5% (n=37) were female. 29,4% (n=25) of all patients had a previous suicide attempt. 25,8% (n=22) reported to have no trauma history but 74,12% (n=63) were traumatized any time during their life.
No statistical difference was found among trauma types. Patients with a history of trauma were found to have more severe

anxiety symptoms. Trauma was also associated with highe rates of suicidal thoughts and hopelessness. There was no significant association between trauma and suicide attempts. Anxiety symptoms were related to increased hopelessness and suicidal ideation. Anxiety symptoms were found to be decreasing as the educational status of patients increased. Conclusion: History of trauma in schizophrenia patients leads to worsening of anxiety
symptoms and increases risk of suicide. It should be kept in mind that trauma and anxiety are important issues to be questioned while evaluating a schizophrenia patient.

THYROID HORMONES AND SCHIZOPHRENIA

Lead Author: Sara Malta Vacas
Co-Author(s): Joana SÃ¡ Ferreira, M.D., Miguel Constante, M.D., Maria JoÃ£o Heitor, M.D.

SUMMARY:
Schizophrenia is a severe psychotic disorder affecting approximately 1% of the adult population worldwide over the average lifetime. This debilitating illness is characterized by the presence of delusions and hallucinations (positive symptoms), social withdrawal and loss of motivation (negative symptoms) and cognitive deficits. Schizophrenia is now understood to arise from a complex interplay of genetic and environmental risk factors acting across many stages of brain development. Thyroid hormones are crucial during development and in the adult brain. Fluctuations in the levels of thyroid hormones at various times during development and throughout life can impact on psychiatric disease manifestation and response to treatment. We pretend to review the relationship between thyroid function and Schizophrenia, relating interrelations between the pituitary-thyroid axis and major neurosignaling systems involved in schizophrenia's pathophysiology. The available evidence supports that thyroid hormones deregulation is a common feature in schizophrenia and that the implications of thyroid hormones homeostasis in the fine-tuning of crucial brain networks warrants further research.

PALIPERIDONE PALMITATE IN OUTPATIENTS WITH SCHIZOPHRENIA: A 30 MONTHS STUDY

Lead Author: Samuel Leopoldo Romero Guillena
Co-Author(s): Beatriz Oda Plasencia Garcia de Diego, Beatriz Mata Saenz

SUMMARY:
PURPOSE OF THE STUDY
The evidence available has demonstrated that Paliperidone Palmitate is effective and generally well tolerated in the treatment of schizophrenia.
The aim of this study was to analyze the clinical and functional outcomes of patients with schizophrenia, treated with Paliperidone Palmitate (PP), during 30 months of follow up
METHOD
We included in this study 48 outpatients diagnosed of schizophrenia, divided in three main groups, related to the treatment prescribed:
A: 16 patients treated previously with oral antipsychotics, and 8 of them were switched to Paliperidone Palmitate thereafter.
B: 16 patients treated previously with typical injectable antipsychotic treatment, and 8 of them were switched to PP.
C: 16 patients treated with Risperidone Long acting injectable, and 8 of them were switched to PP as well.
The switching to PP was performed in each group based of: lack of efficacy (group A and B), tolerability issues (group A and B) and requested by the patient (group C)
During a follow up period of 30 months, we performed the following assessments, every three months:
- PANSS scale and Clinical Global scale (severity of illness) CGI-SI

- Remission rate (Dra. N. Andreassen criteria) and responders rate
- Side effects scale (UKU) and Psychotropic-Related Sexual Dysfunction Questionnaire (PRSexDQ-SALSEX).
- Self-well-being neuroleptic scale (SWN-K) and patients and relatives treatment satisfaction.
- Treatment maintenance, concomitant medications taken and hospital admissions

Every six months, the following assessments were performed:

- Personal and Social Performance (PSP) y Screen for Cognitive Impairment in Psychosis (SCIP)
- Anthropometrics measures and laboratory tests

RESULTS

GRUPO A and B

From the second visit onwards until de end of the study, the patients treated with PP showed the following improvements

- Clinical and functional improvement: an increase in number of remission and responders patients ($p<0,05$), final score PSP, SWK-N and patients and family satisfaction scales ($p<0,01$), and also in the number of patients in monotherapyantipsychotic treatment; and a decrease in: final score GCI-SI, SCIP, number of patients with sexual dysfunction and number of hospital admissions ($p<0,05$)

Withdrawal rate: 0% group A and 12,5% group B

GROUP C

Patients treated with PP showed from the second visit until the end of the study the following improvements:

- A similar results in regards clinical and functional evolution, although we have found some statistical differences related to the improvement in : patient and family treatment satisfaction and SCIP ($p<0,05$) and SWK-N (clinical improvement without statistical significance).

A decrease in PANSS-PG ($p<0,05$)

Withdrawal rate: 0%

CONCLUSIONS

The results of this study, based on clinical practice methods, showed that treatment with PP have demonstrated to be effective and safe, and could improve the clinical and function

NICOTINE USE AND COGNITIVE PERFORMANCE IN PATIENTS DIAGNOSED WITH SCHIZOPHRENIA

Lead Author: Pilar A. Saiz, M.D., Ph.D.

Co-Author(s): Sergio FernÃ¡ndez-Artamendi, Ph.D., Susana Al-HalabÃ, Ph.D., Eva DÃaz Mesa, M.S., Leticia GarcÃa-Ã lvarez, Ph.D., Teresa RodrÃguez, B.S.N., Emilia MartÃnez, M.S., LuÃs Nogueiras, M.S., MarÃa Pouso, M.S., RamÃ³n Ramos, M.D., Gerardo FlÃ³rez, M.D., Ph.D., Manuel Arrojo, M.D., Ph.D., Paz GarcÃa-Portilla, M.D., Ph.D., Julio Bobes, M.D, Ph.D.

SUMMARY:

Introduction: Self-medication hypothesis suggests that schizophrenia patients may smoke in an attempt to reduce their cognitive deficits. It has been suggested that nicotine exerts an enhancing effect on the cognitive skills of these patients.

Aim: To determine whether nicotine use and cognitive performance are associated in a sample of outpatients diagnosed with Schizophrenia.

Method: Sample: 61 smoking patients with DSM-IV Schizophrenia from Northern Spain [77.0% males; mean age (SD) = 43.90 (8.72)]. Instruments: (1) Measurement and Treatment Research to Improve Cognition in Schizophrenia (MATRICS). (2) Pattern of tobacco use: nÂº cigarettes/day; Expired carbon monoxide (CO ppm). Design: Quasi-experimental design with three groups. The control group (CG; n = 23) continued their nicotine use smoking cigarettes as usual. A second group received treatment for smoking cessation (12 weeks) supported by nicotine patches (NP; n = 32). A third group received smoking cessation treatment (12 weeks) with non-nicotinic substitutes (Vareniclina; VG; n = 24). Patients were assessed at intake and three months later (week 11), when

treatment groups finished their cessation programs but were still under treatment. Correlations between changes in tobacco use and cognitive performance were calculated for each group. This study was supported by the Instituto de Salud Carlos III grant PI11/01891, and by the Centro de InvestigaciÃ³n BiomÃ©dica en Red de Salud Mental, CIBERSAM.
Results: The average amount of cigarettes use decreased in all groups [mean (SD) change in CG = -7.18 (13.86); NP = -11.71(12.11); VG = -19.88(12.33)] as well as the concentrations of CO [CG = -8(29.03); NP = -6.81(20.56); VG = -16.82(15.49)]. Changes in the amount of cigarettes were significantly correlated with changes in Attention/Vigilance Cognitive Domain in the CG (r = .728; p = .011); and with changes in the Emotion Management subscale of the MSCEIT in the NP (r = -.558; p = .009). No significant correlations were found between number of cigarettes and any cognitive domain in the VG (p > .05). Changes in CO concentrations were not significantly correlated with variations in any of the Cognitive Domains and in any group (p > .05).
Discussion: According to our results, in the CG cigarettes use is associated with higher scores on attention. In the NP group, reductions in cigarettes use were associated with better emotion management. Since nicotine dose remained stable in this group, changes are not attributable to reduction in nicotine use. The group receiving Vareniclina did not show changes in cognitive performance between baseline and follow up. In conclusion, in this study nicotine use did not show a significant effect on the cognitive performance of a sample of outpatient smokers diagnosed with schizophrenia, with the likely exception of attention in CG. Changes in emotion management could be a consequence of treatment success, but further studies should analyse this in more detail

LONG ACTING INJECTABLE ANTIPSYCHOTIC TREATMENTS: ANTIPSYCHOTIC MONOTHERAPY IS MORE PROBABLY WITH THEM?

Lead Author: Selman F. Salonia, M.D.

SUMMARY:

This poster aims to test a response to the question posed in the title from the extracted experience of the present clinical cases treated at a peripheral mental health centre with an area of â€‹â€‹approximately 40,000 inhabitants influence. Percentages of absolute monotherapy, antipsychotic monotherapy and psychopharmacological polypharmacy (three or more psychotropics simultaneously of these groups: antipsychotics, antidepressants, benzodiazepines and mood stabilizers).
The present group of patients analyzed have, at the time of development of this study , diagnoses included in DSM - V under "schizophrenia spectrum and other psychotic disorders."

LACK OF EXPOSURE TO NATURAL LIGHT IS ASSOCIATED TO BAD QUALITY OF SLEEP IN THE WORKSPACE

Lead Author: Maria Paz L. Hidalgo, Ph.D.
Co-Author(s): Francine Harb
Betina Martau, PhD

SUMMARY:

The diurnal light cycle is a crucial influence on all life on earth. Unfortunately, modern society has modified this life-governing cycle by stressing maximum production and by giving insufficient attention to the ecological balance and homeostasis of human metabolism. The aim of this study is to evaluate the effect of being or not exposed to natural light in the rest/activity rhythm, cortisol and melatonin levels, as well as in psychological variables in humans under real-life conditions. Method: This is cross-sectional study. The subjects were allocated into two groups according to their workspace (10 employees "with window" and 10 in "without window"

group). All participants were women and wore the actigraph (Actiwatch 2 -Philips Respironics), which measures activity and ambient light exposure, for seven days. Concentrations of melatonin and cortisol were measured from saliva samples. Participants were instructed to collect saliva during the last day of use of the actigraph at times 08:00 pm, 4:00 pm and 10:00 pm. The subjects answered the Self-Reporting Questionnaire-20 (SRQ-20) to measure minor psychiatric disorders; Montgomery-Asberg (MA) scale was used to measure depression symptoms and Pittsburgh Sleep Quality Index questionnaire (PSQI) to evaluate the quality of sleep. Results: Rayleigh analysis indicates that the two groups, "with window" and "without window", exhibited similar activity and light acrophases. In relation to light exposure, the mesor was significantly higher (t = -2.651, p = 0.023) in the "with window" group (191.04Â±133.36) than in the "without window" group (73.8Â±42.05). Also, the "with window" group presented highest amplitude of light exposure (298.07Â±222.97). Cortisol level was statistically different between groups at 10:00 pm (t = 3.009, p = 0.008; "without window" (4.01Â±0.91) "with window" (3.10Â±0.30)). In terms of melatonin level, the groups differed at two times of day: 08:00 am (t = 2.593, p = 0.018) and 10:00 pm (t = -2.939, p = 0.009). The "with window" group had a lower melatonin level at 08:00 am (3.54Â±0.60), but a higher level at 10:00 pm (24.74Â±4.22) than the "without window" group. Cortisol levels were positively correlated to minor psychiatric disorders and depressive symptoms (MA) at 10:00 pm. Lower melatonin levels at 10:00 pm were correlated to depressive symptoms and bad quality of sleep (PSQI). Conclusion: Our study demonstrated that not only being exposed to light during the night may affect human physiology, but also that not being exposed to natural light is related to high level o cortisol and lower level of melatonine at night and these, in turn, are related to depressive symptoms and bad quality of sleep.

THE SLEEP QUALITY AND OCCUPATIONAL STRESS OF SHIFT-WORKING AND REGULAR-WORKING NURSES

Lead Author: Seung-Chul Hong, M.D., Ph.D.
Co-Author(s): Tae Won Kim, M.D., Jong Hyun Jeong, M.D., Ph.D., Jin Hee Han, M.D., Ph.D.

SUMMARY:

Objectives : The aim of this study is to investigate the sleep quality, depressive symptoms and occupational stress of registered nurses by comparing the shift working and regular working registered nurses.
Methods : 178 shift working registered nurses and 57 regular working registered nurses were recruited at St. Vincent's hospital. All subjects fulfilled the questionnaires about demographic data, sleep quality, daytime sleepiness, mood and occupational stress. We used Pittsburgh Sleep Quality Index, Epworth Sleepiness Scale, Beck Depression Inventory and Korean Occupational Stress Scale.
Results : Results indicated that shift work group showed significantly worse subjective sleep quality, total PSQI core, and more severe daytime sleepiness than regular work group. Depressive symptoms were not significantly different between groups. Shift work group showed significantly higher score in total occupational stress. Occupational stress due to physical environment, due to job demand, due to organizational system, due to occupational climate were significantly higher in Shift work group.
Conclusion: Shift working nurses showed poorer sleep quality, more severe daytime sleepiness, and higher occupational stress than Regular working nurses. Poor sleep quality of shift working nurses would decrease the inner energy and

concentration on work, which might lead them to suffer from higher occupational stress and lower their resilience to the occupational stress.

HOW DO DRUGS OF MISUSE AFFECT OUR SLEEPING PATTERN?

Lead Author: Pardeep S. Kundi, M.D.

SUMMARY:

Introduction: Sleep disturbances have been associated with drug use, drug abuse, and withdrawal from drug abuse. It is a major public health problem with high morbidity and mortality. Sleep disorders in this group of clients often escape the attention of the treating professionals which can worsen the substance abuse in turn. Quite often, these subjects would use substances hoping it will aid their sleep.

Aims & Objectives: The primary objective of this review was to look at how psychoactive substances influence our sleeping patterns.

Methods: A review of the available literature was done to look into the effects of various drugs of misuse on the sleep architecture.

Results: We have discussed a variety of drugs in the poster â€“ Alcohol, Marijuana, Cocaine and Stimulants, Opiates, GBH, MDMA, Caffeine and Nicotine. For each drug, we have discussed the effects they have on sleep structure in the states of intoxication, withdrawal and chronic use. These effects will be discussed in detail in the poster.

Conclusions: There is a high prevalence of sleep disturbances in patients using or abusing psychoactive substances. There is a case of routine screening for sleep problems in subjects using substances. This can help in early identification of the problems and hopefully, better quality of life for these clients. No studies have systematically studied the prevalence and effects of drug misuse and there is an urgent need of some good quality research in this poorly studied area of psychiatry.

PATIENT INVOLVEMENT IN CLINICAL DECISION MAKING IN COMMUNITY OUTPATIENT MENTAL HEALTH CARE. A EUROPEAN, MULTICENTRE STUDY

Lead Author: Malene Krogsgaard Bording
Co-Author(s): Helle Ã¨stermark SÃ¸rensen, M.H.Sc., R.N.
Bernd Puschner, PD Dr. phil. Dipl.-Psych.
Margareta Ã–stman, prof.

SUMMARY:

Background: The patient-clinician encounter is an important aspect of mental health care, and the quality of this encounter impacts on outcome. Studies of clinical communication processes indicate patients and clinicians can have conflicting ways of accounting for the same problem and this affects the clinical decision making. The aim of the study was to investigate whether different staff professions influence patient involvement in clinical decision making, and whether concordance in patient and clinician ratings of level of patient involvement in clinical decisions exists across professions in mental health care.

Methods: Data were collected as part of the European multicentre study 'Clinical decision making and outcome in routine care for people with severe mental illness' (CEDAR), a longitudinal study with bimonthly assessments collected over a 12-month observation in six European countries (Germany, UK, Italy, Hungary, Denmark, Switzerland) (trial registration ISRCTN75841675).

Results: A total of 588 patients and 213 clinicians were recruited. Clinicians were divided into four groups; psychiatrists/medical doctors, psychologists, care coordinators, and other mental health professionals.

Results showed that all other professions compared to psychiatrists/ medical doctors

have significantly greater odds for active involvement according to patients (psychologists OR 2.35, other mental health professionals OR 2.27, care coordinators OR 1.88), while other mental health professionals (OR 3.23) and care coordinators (OR 2.53) rated patient involvement significantly more active compared to psychiatrists/medical doctors.

Conclusion: Often patients are treated by more than one health care professional, and patients are not taken into treatment with different types of health care professionals at random. Contrary to previous assumptions regarding decision making models, this study showed that clinical decision making in different health care professions in mental health cannot be viewed upon as one group. Rather it is a heterogeneous group of clinicians with different approaches to patient involvement in decision making.

CARING FOR THE CAREGIVER: RECOGNITION AND TREATMENT OF MENTAL DISORDERS IN CAREGIVERS

Lead Author: Joshua Okoronkwo
Co-Author(s): Chijioke D. Okoronkwo

SUMMARY:

With the current trend of de-institutionalization, more patients are receiving care at home (Peters & Sellick, 2006; Shaughnessy & Kramer, 1990; Stewart, Pearson, & Horowitz, 1998), hence require a Caregiver.
The burden of caring for these patients mostly falls on their children or other relatives. Studies have associated the chronic burden of caregiving with onset of mental disorders including depression, anxiety, substance abuse, increased suicide risk.

Prevalence of psychiatric disorders in caregivers is estimated at 38.9% (Tomasi et al., 2008).
Some caregivers suddenly find themselves thrust into this role of providing care for their parents or family members, hence are unprepared for the huge emotional toll that may result.
The caregiver might be an adult child who is struggling with other stressors of "middle age". The adult child takes on an additional role of parenting his/her own parent whilst juggling demands of their routine "day job". This caregiver looses any spare time for leisure activities, then develops a low level of life satisfaction, feels left-out and stigmatized.

Caregiver is mostly responsible for ensuring that the individual been cared for, attends medical appointments, takes prescribed medications in a timely manner. If the caregiver has no support in fulfilling these roles, feelings of anger at other siblings for not "pitching in" may develop and further complicate family dynamics.

The individual receiving care might be too ill or mentally impaired to verbalize appreciation to the caregiver. The caregiver then feels unappreciated, undervalued. This can perpetuate a cycle of conflict fuelled by caregiver frustration, ambivalence and burn out. The Caregiver later feels resentment, guilt, then may use alcohol or drugs to numb the guilt(Cowles, 2012).

Some individuals that require a caregiver, may have a progressive illness. Their health continues to deteriorate and they eventually die. This can precipitate in the caregiver, new questions of one's own mortality, questions of life's purpose, as the Caregiver struggles with grief and bereavement.

Some personality-traits and occupations have been identified to be more susceptible to developing a mental disorder while performing their role as a Caregiver. These include individuals who are efficient, organized, unselfish, are sticklers for perfection and take their obligations seriously.

Hospice staff work intimately with terminally ill patients, and reportedly are at increased risk of burn-out. The strain is great for caregivers providing care for patients with psychiatric and neurocognitive disorders.
Burnout manifests as physical and emotional exhaustion. There are feelings of frustration, anger, resentment which results in guilt. If untreated, it can progress to low self-esteem, feelings of worthlessness, low energy, poor concentration, anhedonia, anxiety, suicidal ideation.

SYSTEMATIC OVERVIEW OF NON-PHARMACOLOGICAL INTERVENTIONS FOR DELIBERATE SELF HARM (AND ATTEMPTED SUICIDE) IN ADOLESCENTS AND ADULTS

Lead Author: Ghulam M. Soomro, M.B.B.S., M.Sc.
Co-Author(s): Dr Sara Kakhi MBBS, MRCPsych

SUMMARY:

INTRODUCTION: The lifetime prevalence of deliberate self-harm is about 3% to 5% of the population in Europe and the USA, and has been increasing. Familial, biological, and psychosocial factors may contribute. Risks are higher in women and young adults, people who are socially isolated or deprived, and people with psychiatric or personality disorders. We conducted a systematic overview of efficacy and safety of non-pharmacological treatments in deliberate self harm using the methods developed within BMJ Clinical Evidence.
METHODS: Through this systematic overview we aimed to answer the following clinical question: What are the effects of non-pharmacological treatments for deliberate self-harm in adolescents and adults? The 'PICO' was as follows: Population was of people age 15 or over with recent deliberate self harm as the main selection criteria; Interventions were non-pharmacological (mainly psychotherapeutic or specific service related); Comparison was 'usual care'; and Outcome was reduction in subsequent deliberate self harm. We carried out comprehensive searches of the following: Medline, Embase, The Cochrane Library, DARE, HTA database and other sources up to August 2013. We referred to harms alerts from FDA and MHRA if relevant. We selected only those articles which were systematic reviews including meta-analyses of RCTs (randomized controlled trials) and those RCTs which were not included in the systematic reviews selected. Article selection and data extraction of the selected articles involved more than one person to ensure reliability. The information on interventions was 'GRADE' evaluated for quality, generalizablity and other criteria. Thus using this method we assessed the evidence for the interventions which was available from the systematic reviews including meta-analyses and RCTs and thus we did not carry out our own meta-analyses.
RESULTS: We found 3 systematic reviews and 14 RCTs that met our inclusion criteria. The quality of evidence for most interventions was not good with overall GRADE evaluation mostly being very low to moderate. Many studies were heterogeneous and with limited generalizablity. We found that emergency card and intensive outpatient follow-up plus outreach compared to treatment as usual were not effective in reducing subsequent deliberate self harm. We also found that there was lack of adequate research evidence in relation to the effectiveness of the following interventions compared to usual care (thus being of unknown effectiveness): cognitive therapy, continuity of care, dialectical behavioral therapy, hospital admission, nurse-led case management, problem-solving therapy, psycho-dynamic interpersonal therapy, and telephone contact.
CONCLUSIONS: Thus we concluded that emergency card and intensive outpatient follow-up plus outreach were not effective in reducing deliberate self harm and the rest of the above interventions were of

unknown effectiveness requiring further good quality research.

DSM-V AND WOMEN'S MENTAL HEALTH

Lead Author: Sokratis Karaoulanis, Ph.D.

SUMMARY:

Women's mental health is a particular branch of Psychiatry. Hormonal fluctuations during woman's life play crucial role in the presence of psychopathological entities. Premenstrual dysphoric disorder, postnatal depression and psychosis, perimenopausal depression, involutional psychosis and late onset paraphrenia are the main psychiatric diagnosis in women's mental health. The basic problem is that DSM-V does not include all these disorders. Therefore, it is difficult for a psychiatrist to distinguish between perimenopausal depression and major depression or between late onset paraphrenia and delusional disorder. The correct diagnosis is important for the choice of appropriate treatment. The alleviation of vasomotor symptoms in perimenopausal depression or the elimination of social isolation in paraphrenia may be the main therapeutic targets in these clinical entities. In conclusion, the omission of particular psychiatric disorders in the domain of women's mental health in DSM-V, may lead to serious problems concerning the efficacy of therapeutic interventions.

THE RELATIONSHIP BETWEEN REPRODUCTIVE FACTORS AND DEPRESSION IN KOREAN POSTMENOPAUSAL WOMEN: KOREAN NATIONAL HEALTH AND NUTRITION SURVEY 2012

Lead Author: Beomwoo Nam, M.D., Ph.D.
Co-Author(s): Hui-Yeon Kim, M.D.

SUMMARY:

Objective: Women are roughly twice as likely as men to report depressive disorders across the reproductive lifetime. And transition to menopause seems to be a point of increased vulnerability to depressive mood. Therefore, this study aims to identify reproductive factors associated with depression in postmenopausal women in Korea.

Methods: A total of 1670 postmenopausal women who participated in the 2012 Korean National Health and Nutrition Examination Survey were included. Lifetime sociodemographic and reproductive characteristics were obtained from the study participants. Multivariate logistic regression analysis was performed to estimate the relationship between reproductive factors and depression.

Results: Sociodemographic and medical data of the subjects are analyzed using Ï‡2 and t-test. About 25% (n=418) of postmenopausal women (n=1670) had depression. There was a significant difference between two groups in occupation, subjective health status, alcohol consumption, smoking, some medical illness, stress perception and suicidal ideation. Women with depression were more unoccupied and had more subjective health problem, medical illness, suicidal ideation. Moreover they drank and smoked more than women without depression. It was found via multivariate logistic regression analysis that menstrual disturbance including irregular menstrual cycle was positively associated with depression (OR, 1.786; 95% CI, 1.228-2.596), whereas no experience of premature labor and non-hormone therapy decreased the risk of depression (OR, 0.514; 95% CI, 0.293-0.903 and OR, 0.584; 95% CI, 0.435-0.785, respectively). However, other reproductive factors were not associated with depression.

Conclusion: Our results suggest the difference between women with depression and women without depression in some sociodemographic factors. In the current study, among various reproductive factors, menstrual disturbance, premature labor,

hormone therapy were positively associated with depression in Korean postmenopausal women. We hope that this study would help to improve the depression of postmenopausal women.

MAJOR DEPRESSIVE EPISODE WITH PSYCHOTIC FEATURES FOLLOWING HYSTERECTOMY AND BILATERAL OOPHORECTOMY DURING REPRODUCTIVE STAGE: A CASE REPORT

Lead Author: Faruk Uguz
Co-Author(s): Mine Sahingoz, M.D., Mehmet Ak, M.D.

SUMMARY:
Objective: This report presents a case of attempted suicide after a major depressive episode with psychotic features folowing hysterectomy and bilateral oophorectomy.
Case: A 34 year-old woman with three children was consulted in the Department of Emergency of a University Hospital. The reason for hospitalization was organophosphate intoxication due to a suicide attempt. The patient had no psychological complaints or disorders until four weeks prior to the hospitalization. There was no family history of psychiatric disorders. Additionally, she described no psychosocial distress. Six weeks previously, the patient underwent hysterectomy and bilateral oophorectomy because of myoma uteri with complication of vaginal bleeding with no response to medical treatment. The patient reported that she had been explaned about procedure and reasons for the surgery by the surgical team, and that she accepted the necessity for the surgery voluntarily. Two weeks following the surgery, depressive complaints such as anhedonia, insomnia, hypoactivity, thought of guilt, decrease in appetite and concentration emerged. Two weeks later, she described the presence of suicidal thoughts, and suicide attempt was made by the patient as a result of planning during the last 3 days. The patient had severe depressive mood, anhedonia, psychomotor retardation, decreased concentration, suicidal idea, nihilistic and guilt delusions during the mental examination. The patient had major depressive episode with psychotic features. Venlafaxine 150 mg/day and olanzapine 5 mg/day were administered to the patient. Six weeks later, the severity of depressive symptoms was observed to decrease significantly and the suicidal thoughts were completely resolved.
Conclusion: Following hysterectomy and bilateral oophorectomy at reproductive period, some women may experience severe major depressive episode which may lead to suicide attempt.

ANTIDEPRESSANTS IN PREGNANCY: PRESCRIPTION TRENDS IN WOMEN PRESENTING TO A SPECIALIST AUSTRALIAN PERINATAL PSYCHIATRY SERVICE

Lead Author: Aimee Waegele, B.Sc.
Co-Author(s): Miss Aimee Waegele BBiomedSc
Dr Carolyn Breadon MBBS/BA MP FRANZCP

SUMMARY:
There remains much interest and controversy surrounding the use of antidepressants in pregnant women. Despite this, antidepressants remain recommended for the treatment of moderate to severe depression occurring in the perinatal period. Non-mental health clinicians and patients can be confronted with a vast amount of conflicting information about the safety of these medication in pregnancy. While rates of antidepressants use during pregnancy has increased, there has been an observed trend of women ceasing their antidepressant when discovering their pregnancy or during the course of their pregnancy. In some cases women had not been given the option of continuing their antidepressant. This is worrying as women who cease their antidepressant treatment

during pregnancy are at an increased risk of relapse. Given these observed trends, prescription practices of primary care providers is important in understanding the treatment pregnant women receive when suffering depression. We undertook a naturalist observational study recording medication of women referred to an Australian Specialist Perinatal Mental Health Service. The service is based within a maternity department of an Australian hospital. All women who planned to birth at the hospital and had current psychiatric symptoms or a history of psychiatric illness could be referred. Psychiatric assessment was utilized to describe pregnant women who elected to either continue or discontinue their antidepressant. A discussion of prescription trends and medication is described for an Australian population of pregnant women.

MAY 18, 2015

YOUNG INVESTIGATOR POSTER SESSION 1

Volunteer Moderators: Sadiq Hasan, M.D., Pankaj Manocha, M.D., Shaocheng Wang, M.D., Ph.D.

THE CHRYSALIS PROJECT: IDENTIFYING AND TREATING AT-RISK YOUNG WOMEN AND IMPROVING GRADUATION RATES IN OREGON

Lead Author: Marisol Toliver-Sokol, M.D.
Co-Author(s): Marisol Toliver-Sokol, M.D., M.C.R.; Keith Cheng, M.D.; Erica Weber, L.C.S.W.

SUMMARY:

Title: The Chrysalis Project: Identifying and Treating At-Risk Young Women and Improving Graduation Rates in Oregon

Authors: Toliver-Sokol, Marisol, MD, MCR; Cheng, Keith, MD; Weber, Erica, LCSW

Program: Division of Child and Adolescent Psychiatry, Department of Psychiatry, Doernbecher Children's Hospital, Oregon Health & Science University

Background: The Chrysalis Project is an Oregon school-based group therapy program designed to reduce the negative impact of childhood abuse by addressing the issues and behaviors of young women who have experienced physical, emotional and/or sexual abuse. It provides the students with the knowledge, skills and attitudes necessary for success in school, among peers and in the larger community. High school attrition in the state of Oregon is the second worst in the United States, with just sixty nine percent of Oregon high school students in the class of 2013 earning a diploma after four years of schooling. Seventy three percent of females graduated on time in the class of 2013. Prior to this study, little was known about the effectiveness of the Chrysalis Project, especially in the areas of academic performance and high school graduation rates.

Methods: In this retrospective cohort study, we reviewed the graduation rates of eighty participants of the Chrysalis Project who were to graduate in 2013 after four years of schooling. They spanned six different school districts within the Portland metro area of Oregon, which included students with the greatest risk of attrition from high school. These included: Centennial, Portland, Reynolds, North Clackamas, Gresham and David Douglas school districts. Using chi square analysis, we subsequently compared the graduation rates from the Chrysalis Project to the general population of graduates in the state of Oregon and across each specific at-risk school district.

Results: We found that the Chrysalis Project had an overall graduation rate of seventy nine percent compared to sixty nine percent of the general Oregon population and seventy three percent of the

general female population of graduates in 2013. There was a significant difference between Chrysalis graduates and the general population of graduates (Chi X2 = 19.54, p<0.01). There was also a significant difference between Chrysalis participant graduates and the general population of students graduating from the Gresham school district (Chi X2 = 13.7, p< 0.01).

Conclusion: The Chrysalis Project is an effective means in addressing the poor graduation rates in the state of Oregon while providing a safe and comprehensive way to build resilience in those most at-risk for mental health sequela due to adverse childhood experiences. Further research will include a prospective analysis of The Chrysalis Project's effect on mood, substance use, sexual activity, suicidal ideation and self-harming behaviors within the participants of the project.

EXPLORING THE BIOBEHAVIORAL MECHANISMS OF BACLOFEN IN REDUCING ALCOHOL DRINKING: A HUMAN LABORATORY STUDY

Lead Author: Mehdi Farokhnia, M.D.
Co-Author(s): Steven Edwards, B.S., William H. Zywiak, Ph.D., John E. McGeary, Ph.D., Mary R. Lee, M.D., Lindsay R. Arcurio, Ph.D., Christian Frable, B.S., April Le, M.Sc., Ashley Blackburn, B.S., Jonathan Amodio, B.S., Matthew Rohn, B.S., Robert M. Swift, M.D., Ph.D., George A. Kenna, Ph.D., R.Ph, Lorenzo Leggio, M.D., Ph.D., M.Sc.

SUMMARY:

BACKGROUND: Baclofen, a selective GABA-B receptor agonist, has been identified as a promising pharmacological treatment for alcohol use disorder in preclinical and clinical studies. However, the specific mechanisms by which baclofen affects drinking are not well characterized. The aim of this study was to investigate baclofen's impact on alcohol drinking and its possible biobehavioral mechanisms in a clinical laboratory paradigm.

METHODS: This was a between-subject, double-blind, placebo-controlled, randomized human laboratory study. Fourteen non-treatment seeking, alcohol-dependent (DSM-IV diagnosis), heavy drinking outpatients were randomized to receive either baclofen (30 mg/day) or placebo for 7 days. At day 8, each participant performed an alcohol cue-reactivity (CR) followed by an alcohol self-administration (ASA) in a private bar-like testing room. CR: Participants were exposed to different stimuli associated with the beverage (water or alcohol) during three consecutive CR trials. At the end of each trial, patients rated their urge and attention to alcohol. Vital signs were monitored and the amount of salivation was measured during each trial as well. ASA: A priming drink was first presented and participants were instructed to consume it within 5 minutes. Forty minutes after that, additional alcohol was presented in a form of 2 trays with 4 mini-drinks each. Participants were allowed to drink any or all glasses and $3 per drink was provided as an alternative reinforcer for not drinking. Alcohol's stimulant and sedative effects were assessed using the Biphasic Alcohol Effects Scale (BAES) every 10 minutes after the priming and every 30 during the alcohol free choice period.

RESULTS: During the CR session, there were no significant differences between the two groups in terms of urge and attention to alcohol. During the ASA, baclofen-treated patients consumed a lower amount of alcohol compared with the placebo group (0.17Â±0.41 vs. 1.43Â±2.30 standard drinking units, p=0.20). Although this difference was not statistically significant, there was a robust medication effect (d=0.76). When drinking during the ASA plus two days before were combined in the analysis, there was a significant effect of baclofen to reduce alcohol consumption (p<0.01). After consuming the priming drink, there was a significant effect of baclofen, compared to placebo, on the biphasic effects of alcohol, i.e. significant

increases in alcohol stimulation (p=0.001) and sedation (p<0.01).
CONCLUSION: Baclofen was shown to reduce alcohol consumption during both the naturalistic phase and the ASA. The present study suggests that baclofen's impact on the biphasic effects of alcohol (stimulation and sedation) might be its main biobehavioral mechanism of action in reducing alcohol drinking, but larger studies are needed to confirm these findings.

SEVERE NITROUS OXIDE TOXICITY RESULTING IN BILATERAL LOWER EXTREMITY PARALYSIS AND REVERSIBLE ENCEPHALOPATHY

Lead Author: Caroline Hadley, B.S.
Co-Author(s): Alireza Faridar, M.D., Eva Amin, M.D., Ranjit Chacko, M.D.

SUMMARY:
Introduction: Nitrous oxide causes neurologic damage via multiple mechanisms, including NMDA antagonism, interference with homocysteine metabolism, and oxidative damage. While there have been several reports of subacute combined degeneration of the spinal cord resulting from nitrous oxide abuse, literature review reveals only 3 previously reported cases of nitrous oxide abuse presenting with prominent psychiatric symptoms. These previous reports describe confusion and paranoid delusions with associated gait abnormalities. We add to the literature a fourth case of nitrous oxide abuse presenting with alteration in mental status.
Methods: Report of case and review of the literature.
Results: Review of the English language literature revealed only 3 previously reported cases of nitrous oxide toxicity presenting with altered mental status as a primary complaint. We add to the literature the case of a 39-year-old man who presented to the emergency center reporting 3 weeks of bilateral lower extremity paralysis, decreased sensation, and incontinence. He admitted to abusing nitrous oxide for the last 2 years, with use ranging from 1-2 days per week to daily use. He was unable to provide a volume of use, but it was noted that he was intoxicated for most of the day when using. He was noted on exam to have poor insight, severe word finding difficulty, and poverty of thought, as well as a severe short-term memory deficit. Montreal Cognitive Assessment returned a score of 10/30, with deficits in all domains. He was admitted to the hospital for treatment, given his poor cognitive function. MRI showed mild cerebral volume loss with no focal lesions. MRI of the thoracic spine showed no acute abnormalities, cervical and lumbar spine imaging could not be obtained due to poor cooperation. Significant laboratory findings included mild megaloblastic anemia and a homocysteine level of 105.5. Five days after admission his MoCA had improved to 19/30, and by the date of discharge, 16 days after admission, his MoCA was 29/30, with executive function and recall the last domains to improve. At discharge he had no improvement in sensation, motor function, or urinary continence, and he was referred to outpatient rehab.
Conclusions: Nitrous oxide toxicity is known to cause subacute combined degeneration of the spinal cord, but reports of psychiatric complaints resulting from nitric oxide abuse are uncommon. We describe the case of an adult patient who presented with significant cognitive impairment resulting from chronic nitrous oxide abuse. Though uncommon, nitrous oxide abuse should be included in evaluation for drug abuse and considered when evaluating patients with acute decline in cognitive function, particularly when coupled with sensory and motor anomalies.

HOW DO PSYCHIATRISTS RECOMMEND CHILDREN AND ADOLESCENTS TO USE THE SMARTPHONES

Lead Author: Yonggi Kim
Co-Author(s): So-Young Lee, M.D., Ph.D., Youn-Jung Lee, M.D., So-Hee Lee, M.D.,

Ji- Youn Kim, M.D., Ji-Hoon Kim, M.D., En â€“Jing Park, M.D., June-Sung Park, M.D., Su-Young Pang, M.D., Moon-Soo Lee, M.D., Sang-Cheol Choi, M.D., Tae -Young Choi, M.D., Je-Yuk Kang, M.D., Sin-Kyum Kim, M.D., Ph.D., Han-Yong Jung, M.D., Ph.D., Min-Jae Kim, M.D., Sung-Il Woo, M.D., Ph.D., Sang-Woo Han, M.D., Jong-Myeong Kim, M.D., Hwa Young Lee, M.D., Ph.D.

SUMMARY:

Introduction

SMARTPHONE has a lot of useful functions. Also, SMARTPHONE has popularized at rapid rate due to high portability. According to a research of using habit on media, Ministry of Gender Equality and Family, South Korea, 2013, Adolescent's SMARTPHONE penetration rate was 81.5 percent. With the increasing use of SMARTPHONE, several problems have emerged, such as overuse of SMARTPHONE, bullying through social networks, exposure to harmful contents etc. However, there is no specific guidelines for use of SMARTPHONE to prevent above-mentioned issues. The purpose of part of the Division of Public Affairs in Korean Academy of Children and Adolescent Psychiatry was making a guideline for proper SMARTPHONE usage for hildren and adolescents. To achieve the purpose, Psychiatrists were asked for proper starting age and recommended daily time of usage for children and adolescents.

Methods

Board-certified psychiatrists participating in seminars or CME courses were recruited to participate. The study was conducted from March 2014 to August 2014. Informed consents were provided by the participants. Questionnaire was designed by the authors, and was consisted of 3 parts: part 1, psychiatrist's recommendation of SMARTPHONE usage for children and adolescents; part 2, investigation of SMARTPHONE usage of their own children; part 3, psychiatrist's SMARTPHONE use habits. Answers were asked to respond from 1(not at all) to 5(firmly agree with).

Results

Among 121 psychiatrists who participated in the survey, 70(57.9%)were male and 51(42.1%) were female. All participants (N=121, 100%) have agreed for time limitation of children's use of SMARTPHONE. And most psychiatrists(N=100, 82.6%) have agreed for age limitation of SMARPHOME usage. Suggested reasons for the limitation were as follows: lack of self-control(N=65, 56%), risk for overuse(N=23, 20%), exposure to noxious stimulus(N=12, 10%). As psychiatrists, mean recommended starting age of SMARTPHONE was 7.74 grade(SD= 3.27) of school. Mean daily recommended usage time for weekdays were 55.25minutes for grade 1 to 6, 96.86minutes for grade 7 to 9, and 115.04minutes for grade 10 to 12. Psychiatrists having school age children or adolescents (N=33) have answered that their own children got the SMARPHONE for the first time at the mean 6.33 grade(SD=2.68).

Discussion

Psychiatrists have agreed on the time limitation of children's use of SMARTPHONE and recommended to use the device from the grade 7 to 8 of school (i.e.,, 12 to 13 years) for the first time. However, interestingly, psychiatrist themselves have let their own children at an earlier age they think as a proper age for use. The reason for this age discrepancy was due to worry about relationship with friends and weakheartedness on the demand of the offspring. Although the survey has it's limitation due to the restricted number of psychiatrists participated, the results would serve as preliminary opinions of experts on children's use of SMARPHONE.

ALTERED PREFRONTAL COGNITIVE CONTROL OVER EMOTIONAL

INTERFERENCE IN ADOLESCENTS WITH INTERNET GAMING DISORDER

Lead Author: Junghan Lee, M.D.
Co-Author(s): Seojung Lee, M.D., Young-Chul Jung, M.D., Ph.D.

SUMMARY:
Objectives: Individual differences in emotion regulation, particularly as they apply to suppression of negative affect, may be important in determining vulnerability to aggression and violence. Although problems in self-control and aggression have been previously reported to be associated with internet gaming disorder, the order of relationship between internet gaming disorder and psychological characteristics is unclear. To investigate related factors of internet gaming disorder, we hypothesized that adolescents with internet gaming disorder would demonstrate more difficulties in emotion regulation compared to adolescents without internet gaming disorder.

Methods: Eighteen male adolescents with internet gaming disorder and 18 age-matched male healthy control subjects participated. To investigate our hypothesis, we applied a stroop task manipulated with emotional interference during functional MRI to estimate the cognitive control over emotional interference. We focused on the dorsal anterior cingulate cortex (dACC) as a region of interest and investigated the alterations of its functional connectivity followed by emotional interference.

Results: The internet gaming disorder group showed a tendency of longer reaction time and lower accuracy rate in emotion interfering conditions compared to the healthy control group. The healthy control group demonstrated significant BOLD responses to emotionally interfering angry faces in the dACC, primary motor cortex, superior temporal sulcus and posterior parietal cortex which consists of dorsal attention network. By contrast, the internet gaming disorder group showed significant BOLD responses to emotionally interfering angry faces in the anterior insula, supplementary motor area, and fusiform gyrus. Anterior insula has been described central to the ventral attention system which dampens activity in the dorsal attention network as a 'circuit breaker' during unanticipated shits of spatial attention, and fusiform gyrus is known to be related to facial recognition. The insula activations synchronized with activations negatively in the dorsolateral prefrontal cortex, middle temporal gyrus, cerebellum and posterior parietal cortex in the internet game addiction group

Conclusion: The internet gaming disorder demonstrated brain activations elicited by emotional interfering angry faces, which were irrelevant for the stroop task. These activations were not observed in the healthy control group. Our results indicate that the top-down cognitive control over emotional interference was impaired in adolescents with internet game disorder, which might contribute to aggression and poor self-control.

DRUG INFORMATION SYSTEMS FOR THE PREVENTION OF DRUG MISUSE, DIVERGENCE, AND SUICIDE: A FOCUS GROUP STUDY

Lead Author: Christine Leong, Pharm.D.
Co-Author(s): Jitender Sareen, M.D., Murray Enns, M.D., James Bolton, M.D., Silvia Alessi-Severini, Ph.D.

SUMMARY:
Background: Misuse, divergence, and intentional overdose with the use of pharmaceuticals continue to be an important and prevalent problem in developed countries worldwide. Drug information systems provide pharmacists access to dispensing information, which may be used to limit the risk of providing inappropriate quantities of medications available for potential misuse. However, challenges of this system from the perspective of the pharmacist are not

known. This study aims to identify and understand the barriers associated with the utilization of drug information systems in preventing drug misuse, divergence, and intentional overdose in community pharmacy practice.
Methods: A pilot focus group based on grounded theory was conducted. Five community pharmacists were selected using non-probabilistic purposeful and convenience sampling. A series of situational scenarios and open-ended questions regarding the factors and challenges associated with the restriction of medications to high-risk patients were presented to the group by a research facilitator. Line-by-line coding of the focus group transcripts using ATLAS.tiÂ® was carried out, moving iteratively between the data to identify common themes. This study was approved by the institution's Human Research Ethics Board.
Results: The analysis of the focus group resulted in the identification of three themes related to the use of drug information systems and the challenges of identifying and intervening on patients at risk of medication misuse, divergence, and overdose: (1) Patient Level Barriers (deciphering signs of misuse); (2) Pharmacist Level Barriers (quality of education, neighborhood of practice, years of practice experience); (3) System Level Barriers (prescriber availability, targeted pharmacies at risk).
Conclusions: A large proportion of community pharmacists in Manitoba expressed a need for improved systems for managing patients who may be at risk for medication misuse, divergence, and intentional overdose. Findings from this study will provide valuable information for the development of effective and feasible strategies for limiting the means of medication misuse; which have important implications from a health policy perspective.

ALCOHOL & INTELLECTUAL DISABILITY:

A LONDON-WIDE SURVEY INTO THE EXTENT OF ALCOHOL RELATED RISK & HARM AMONG PEOPLE WITH INTELLECTUAL DISABILITIES

Lead Author: Rupal Patel, M.B.B.S., M.D.
Co-Author(s): Sarah Maber, M.D.

SUMMARY:

Aims
Our study aimed to establish the level and associated risks of alcohol related harm in patients under the care of London Community Mental Health & Learning Disability Teams (CMHLDT)*.

Methods
The authors developed a survey to enquire into the extent of alcohol related harm and risk in CMHLDTs across London. The survey consisted of demographic details, numbers at risk of alcohol related harm and numbers involved in risk incidents or safeguarding. The survey was distributed electronically via Survey Monkey to each Consultant member of the London Intellectual Disability Consultant Psychiatrist Network. Responses were collected between 10th April and 30th May 2014.

Results
The response rate to the survey was 13%. Rates of alcohol related harm, per Consultant Caseload, varied between 0.5% - 16% (average being 3.8%).
We found that 32% of identified cases had been involved in risk incidents with 29% having been involved in the safeguarding vulnerable adults process as a result of alcohol.

Conclusions
Although the sample size was relatively small, the results indicate that alcohol is a cause of problems to some people with intellectual disability (ID).
In over one third of identified cases, alcohol was found to be a factor in increasing the person's vulnerabilities and requiring input from the safeguarding team.

Our response was rather low at 13% despite regular reminders to complete the questionnaire.
Sampling from only mental health teams may have led to an under-representation of alcohol related problems in people with ID.
The results show the need to identify cases of alcohol related harm in this particular population. To that effect, there is a need for a screening tool adapted for people with intellectual disabilities with a wider application in community settings.

* Please note that in the UK, the terms 'learning disability' and 'intellectual disability' are used interchangeably.

QUALITY OF ALCOHOL WITHDRAWAL TREATMENT: MONITORING SYMPTOMS AND VITAMIN SUPPLEMENTATION WITH ELECTRONIC MEDICAL RECORDS

Lead Author: Stephanie Pope, M.D.
Co-Author(s): Kasia Gustaw-Rothenberg, M.D., Ph.D., Christina Delos Reyes, M.D.

SUMMARY:
Background: The standard of care for those at risk for alcohol withdrawal, specifically, those with physiological dependence on alcohol, should be supplemented with Thiamine, Folate and Multivitamins as well.
Objective: The purpose of this study was to find objective data regarding the adherence of vitamin supplementation in hospitalized patients at risk for alcohol withdrawal.
Methods: The total numbers of Folate, Thiamine and Multivitamin and CIWA sets ordered from two congruent time periods within a hospital system before and after linking the orders and compared to determine the effectiveness of the change. Frequency counts of the order sets containing CIWA with and without Folate, Thiamine and Multivitamin dosages being orders were extracted from EMR within congruent time periods. Percentages were calculated from the frequency counts.
Results: The study found that before the invention, Thiamine was ordered only 41 times, Folate ordered 42 times and Multivitamin 42 times while CIWA was ordered 1,228 times with in the time parameters (3.34%, 3.42% and 3.42% respectively). As a summation, this would be an average rate of 10. 28%. After linking Thiamine, Folate and Multivitamin orders to CIWA, the average rate of these vitamins being ordered with CIWA reached 77.84%.
Conclusion: This study finds that linking CIWA and vitamin supplementation orders within EMR increases the likelihood of them being ordered together. We propose that this can be applied to other commonly ordered interventions and linking such orders should be implemented. This would improve the standards of care for all patients.

EVALUATION OF THE DEVELOPMENT OF CHILDREN WHOSE MOTHER IS UNDER METHADONE MAINTENANCE TREATMENT DURING PREGNANCY

Lead Author: Lien-Chung Wei, M.D., M.P.H.

SUMMARY:
Objective: Developmental delay was described in several reports of mothers with opioid abuse during pregnancy. This issue is also noticed in Taiwan, and we evaluate these children's development. This paper discusses the developmental delay associated with maternal methadone use.
Method: Our subjects are nine younger children, all delivered between July 2006 and March 2010, at a public mental hospital in Taiwan. Bayley Scales of Infant Development, third edition, is used to evaluate the development in these children with histories of prenatal exposure to methadone and heroin.
Results: The Bayley scales of infant development are provided to underscore the marked developmental delay shown by six of these nine children: four of them had developmental delay in language composition, three had developmental delay in cognitive composition, and no developmental delay was seen in the

social-emotional portion. Parents' neglect is noticed in most cases.
Conclusion: This population of children born to heroin addicted mothers has developmental delay. The increased relative risk for developmental delay is probably due to the chaotic and high-risk life-style associated with illicit heroin use and not solely to the use of heroin and methadone. Special attention is recommended for women who are under methadone treatment during pregnancy, or who continue to use illicit heroin during pregnancy while receiving methadone.

Keywords: developmental delay, methadone use, pregnancy, Bayley scale

ATOMOXETINE ASSOCIATED WITH MANIA

Lead Author: Gulay Tegin, M.D.
Co-Author(s): Nermin Yucel, M.D., Atakan Yucel, M.D., Cuneyt Tegin, M.D., Halil Ozcan, M.D.

SUMMARY:
Introduction
Attention deficit-hyperactivity disorder (ADHD) is a widespread neuropsychiatric disorder that mostly seen in childhood and ongoing in adulthood. Atomoxetine, first non-stimulant drug approved by the Food and Drug Administration for the treatment of ADHD, is a selective presynaptic norepinephrine reuptake inhibitor (1, 2). We report a case of mania induced by atomoxetine, which was observed in an adolescent with ADHD.
Case
An 18-year-old female was admitted to outpatient clinic with complaints of restlessness, short temper, inattention, forgetfulness, and academic failure. In her psychiatric examination, she was conscious and oriented. Her speech was understandable and normal speed. There were no hallucinations or delusions. She has not had any other psychiatric history. Family history was insignificant for psychiatric diseases. She had hyperactivity, impulsivity and concentration problems during the examination. Her IQ level was within normal limits according to a psychiatric examination, the Kent E-G-Y Test and the Porteus Maze Test. The Wender Utah Rating Scale (short version) was scored as 45 points. There were no remarkable results from the physical and laboratory examinations. The diagnosis was compatible with ADHD combined type according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V). Atomoxetine, 25 mg/day, was initiated and the dose was titrated up to 50 mg/day during the two weeks period. At the end of the third week of treatment, manic symptoms as irritability, distractibility, talkativeness, insomnia, hostility, grandiosity, hypersexuality and self-esteem were observed. No any other medical reason was detected for mania in her physical exam, laboratory and imaging. Atomoxetine was stopped and manic symptoms was improved within 6 days. The diagnosis was compatible with atomoxetine induced mania. The methylphenidate, 27 mg/day, was initiated and the dose was titrated up to 54 mg/day during the one week period. In the first month of the follow-up period, attention deficiency symptoms decreased and school achievement improved. At the end of third month, the medication was tolerated well, and there was no any manic symptom.
Conclusion
ADHD prevalence is approximately observed 5.3% of children and adolescents worldwide (3) and 4 to 5% of adults in US (4). Psychiatry professionals frequently encounter with ADHD in daily clinical practice. Also academic failure, impaired social and interpersonal relationship is common in patient with ADHD. Atomoxetine first was aproved as an antidepressant; it is also approved for ADHD (5). In previous studies, it is declared that atomoxetine is safe and effective treatment alternative for patient with ADHD and comorbid conditions with ADHD (6-8). In clinical practice, drug induced mania

might be observed. In our case, we observed an atomoxetine induced mania which is very rare situation. Also physicians should be taken into account this side effect.

THE CHANGE OF AUTONOMIC NERVOUS SYSTEM IN ANXIETY DISORDER AFTER GIVEN PHYSICAL OR PSYCHOLOGICAL STRESS

Lead Author: Minkyung Cho
Co-Author(s): Jee Hyun Ha, M.D., Ph.D., Doo Heum Park, M.D., Ph.D., Jae Hak, M.D., Ph.D., Seung Ho Ryu, M.D. Ph.D.

SUMMARY:
Objectives:
This study was designed to assess the change of heart rate variability(HRV) at resting, upright and psychological stress environment in anxiety disorder patients.

Methods:
The HRV was measured at resting, upright and psychological stress in 60 anxiety disorder patients before taking medication. We used Visual Analogue Scale(VAS) score to assess tension and stress severity. Beck Depression Inventory (BDI) and State Trait Anxiety Inventory-I,II (STAI-I,II) were used to assess depression and anxiety severity. Differences between HRV indices were evaluated using paired t-test. For gender difference analysis, ANCOVA was used.

Results:
In comparison between resting and upright, SDNN, LF/HF were significantly increased and NN50, pNN50, nHF was significantly decreased in upright position.($p<0.01$)
In psychological stress, SDNN, RMSSD, LF/HF was significantly increased and nHF was significantly decreased than resting state.($p<0.01$) SDNN, NN50, pNN50, HF in psychological stress were higher than upright position.
There was no significant difference between gender in upright and psychological stress.

Conclusions:
LF/HF ratio was significantly increased after physical and psychological stress in anxiety disorder, however there was no significant difference between two stress

PREVALENCE OF DERMATOLOGICAL ILLNESS IN PATIENTS WITH ANXIETY DISORDER

Lead Author: Amy Yang, M.D.
Co-Author(s): Jon E. Grant, JD, MD, MPH

SUMMARY:
There is a high rate of comorbidity between dermatological and psychiatric illnesses. Studies examining dermatological outpatients show that depression and anxiety are common, ranging from 35-50% of the clinical population. Most published studies are based on data gathered from patients in dermatology clinics. There is no recently published study on prevalence of dermatological illnesses in psychiatric outpatients, and whether they are associated with particular psychiatric disorders. This study examined the prevalence of dermatological with anxiety disorders versus patients without anxiety disorders in outpatient psychiatric clinic. The sample was obtained using a query to pull charts from the University of Chicago Medical Center Psychiatry outpatient clinic, and individual charts were reviewed to collect necessary data. Inclusion criteria were defined as patients who have visited the psychiatry clinic over the last two years (2012-2013) with a diagnosed anxiety disorder based on DSM-IV categorization. The control group consisted of patients without a diagnosis of any anxiety disorder. The comparison variable was percentage of patients with dermatological condition. Subset analysis using combination of t-test or ANOVA was conducted on the subject population to see whether certain dermatological illnesses were more commonly represented. Demographics (age, gender, race, marital status), co-morbid medical conditions, medications, whether patient was under active

dermatological treatment, were collected. The group consisted of 1239 patients (mean age=38 yrs; 65% female) patients. 608 (49%) carried a dermatological diagnosis, of which 83 (14%) had an infectious etiology, 31% had inflammatory disease, and 55% had subcutaneous skin disorders. The three most common skin conditions were: contact dermatitis, acne, and scarring. When the group was subdivided into generalized, phobic, and other anxiety subtypes, patients with phobic anxiety disorder showed the highest rate of dermatological illness (54%) with generalized anxiety having the second highest rates (48%). The control group consisted of 2159 patients (mean age=46 yrs; 61% female), of whom 46% carried a dermatological diagnosis. Within the control group, the most common psychiatric disorders were: major depressive disorder, adjustment disorder, and depression NOS. Of the 1004 control subjects with a dermatological condition, 13% had infectious etiology, 34% inflammatory, and 53% subcutaneous. The three most common conditions were: contact dermatitis, acne, and pruritus. Depression showed the highest correlation with skin disorder (53%). Preliminary analysis showed that patients with anxiety disorder did have higher rates of dermatological illnesses compared to psychiatric patients without anxiety. The aim of continuing investigation is to elucidate the phenomenology of dermatological illness in psychiatric population in order to understand how the two systems may be related.

LURASIDONE IN PATIENTS WITH AUTISM SPECTRUM DISORDER

Lead Author: Aadhar Patil, M.D.
Co-Author(s): Reynaldo L. Pella, Lee S. Cohen, M.D.

SUMMARY:

This is the first clinical report of the use of Lurasidone, a secondÂ generation orally administered atypical antipsychotic compound in patients with Autism Spectrum Disorder. Risperidone and Aripiprazole have been studied in developmentally disabled and autistic patients and are FDA approved for the treatment of irritability associated with autism, but studies of newer agents are limited. We studied seven patients with Autism Spectrum Disorder from our developmental disability clinic, all of whom have concomitant intellectual disability and severe behavioral issues characterized by aggression, impulsivity, and selfÂ injurious behavior. One case was coÂ-morbid with cerebral palsy and one case was co-morbid with seizure disorder. The sample included 1 female and 6 male cases. Mean patient age of the sample was 20 (range 11 to 27 years old). Mean length of time on Lurasidone was 9.7 months (range 2 to 34 months). Mean titrated total daily dose was 29mg (range 10 to 60mg). Cases were retrospectively chart Âreviewed for Clinical Global Impression Severity Scale (CGIÂS) before initiating Lurasidone and Clinical Global Impression Improvement Scale (CGIÂI) and Clinical Global Impression Efficacy Scale (CGIÂE) after initiating Lurasidone. Mean CGIÂS of the sample was 5.4 (range 5 to 6), which correlates with severe illness, and mean CGIÂI of the sample was 2.9 (range 2 to 4), which correlates with minimal improvement. Two patients were much improved (2), four patients were minimally improved (3), and one patient showed no change (4) after clinical review by a board certified psychiatrist. A similar pattern arose using the CGIÂE. Mean CGIÂE of the sample was 2.4 (range 1 to 4) which correlates with minimal to moderate therapeutic efficacy. One patient showed no improvement (1), three patients showed minimal efficacy of the drug (2), two patients showed moderate efficacy (3), and one patient also showed marked efficacy (4). Overall, 86% of patients treated with Lurasidone showed improvement in clinical functioning. Lurasidone may function as an alternative compound for improvement in impulsivity,

aggression, and self-Âinjurious behavior in the treatment of patients with Autism Spectrum Disorder who have failed currently approved compounds.

EFFICACY OF PRO-SOCIAL GAME PLAY FOR ENHANCING SOCIAL COMMUNICATION IN ADOLESCENT WITH HIGH FUNCTIONAL AUTISM SPECTRUM DISORDER

Lead Author: Jinuk Song, M.D.
Co-Author(s): Ji Sun Hong, M.D., Sun Mi Kim, M.D., Ph.D., Doug Hyun Han, M.D., Ph.D., Kyung Joon Min, M.D., Ph.D.

SUMMARY:
Introduction
Social dysfunction in patients with autism spectrum disorder(ASD) was thought to be associated with impairment of social perception and communication using emotion, body movement, hand gesture, and facial expression. In previous study, we reported that the decreased ability to recognize affect via emotional world and facial emoticons was associated with altered activity of the fusiform gyrus(FG) in adolescent with ASD. We hypothesized that cognitive behavior therapy(CBT) using pro-social game would increase social communication and alter brain activity within FG in adolescent with ASD.
Method
20 male adolescents with ASD were randomly classified into 2 groups: 10 ASD adolescents with online CBT group(online-CBT) and 10 ASD adolescents with offline CBT group(offline-CBT). During 6 weeks online-CBT were asked to participated in online sociality training program using pro-social game, 'Poki-poki'. During 6 weeks offline-CBT were also asked to participate in CBT for social skill training. At baseline and following 6 weeks of the intervention, clinical symptoms and measures of sociability were assessed using the CARS and SCQ-C. In parallel, brain activity were assessed by using fMRI.
Results
SCQ scores were changed in both online-CBT($z=2.21, p=0.02$) and offline-CBT($z=2.00, p=0.04$). However, there was no significant difference between two groups($F=0.17, p=0.69$). In post hoc of the changes in SCQ subscale score, online group showed greater improvement in SCQ-social interaction score, compared to offline group($F=9.41, p<0.001$). Offline group showed improvement in SCQ-social communication score at a trend level($F=4.31, p=0.052$) and SCQ-repetitive behavior score($F=6.23, p=0.02$).
Brain activity within right temporal FG in response to emotional words has been decreased in online-CBT($z=2.21, p=0.02$) and offline-CBT($z=2.22, p=0.03$). However, there was no significant difference between two groups($F=1.12, p=0.30$). Brain activity within right occipital FG in response to facial emoticons has been increased in online-CBT($Z=2.84, 0=0.004$). However, there was no significant increase of brain activity within occipital FG in response to facial emoticons in offline-CBT($z=0.31, p=0.75$).
The change of brain activity within right temporal FG was positively correlated with the change of SCQ-total scores($r=0.621, p=0.003$) and SCQ-social interaction scores($r=0.46, p=0.04$) in all ASD patients. In both groups, the change of brain activity within right temporal FG was positively correlated with the change of SCQ-total scores, respectively($r=0.67, p=0.04$;$r=0.063, p=0.04$).
Discussion
Training for communication enhancement using pro-social game would increase social communication and alter brain activity within fusiform gyrus in adolescent with ASD as much as cognitive behavior therapy in offline. Especially, pro-social game greatly improved social interaction, compared to offline CBT. CBT using pro-social can be an useful method to increase sociality in adolescent with ASD.

MANIC EPISODE FOLLOWING A SEXUAL ENHANCEMENT SUPPLEMENT USE

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

SUMMARY:
There is a dramatic increase on the trend of the herbs and supplements use to enhance erectile function as well as sexual arousal of desire. These substances are easily found on internet and are labelled as "natural" or "herbal" but represent a challenge to the public health system as they have importance psychoactive properties that cause unwanted harm and addictive behaviors. In the literature there are four substances identified as the psychoactive substances including yohimbine, maca, horny goat weed and Ginkgo biloba. In this reported we present the case of a patient with an extensive history of bipolar disorder that became manic after using PowerZen GoldÂ®, a sexual enhancer supplement that contains Yohimbine. Physicians and mental health professionals should be aware of this new trend as patients with psychiatric disorders are at high risk for sexual dysfunction. Furthermore, the long term effects of
these supplements remains unknown.

ACUTE PSYCHOTIC AND NON PSYCHOTIC DEPRESSIVE EPISODES IN BIPOLAR DISORDER TYPE I: AN INPATIENT CHART REVIEW STUDY OF PHARMACOLOGIC TREATMENTS RENDERED

Lead Author: Johanna Burke, M.D.
Co-Author(s): Rony S. Berbara, MSIV., Louise Maranda, Ph.D., Chelsea Kosma, MA., Anthony J. Rothschild, M.D.

SUMMARY:
Background: Psychotic depression occurs more commonly in bipolar disorder than in unipolar depression. While guidelines have been published for the treatment of an acute episode of unipolar psychotic depression, no guidelines have been published to date to support specific treatment of an acute episode of bipolar psychotic depression.

Methods: This retrospective chart review study examined demographic and clinical characteristics of 57 adults (17 years or older) with Bipolar I Disorder Depressed Phase with and without psychosis presenting for psychiatric hospital admission at the University of Massachusetts Memorial Health Care during the years of 2007-2013. Patterns of psychotropic medication use immediately prior to and during their 61 admissions to inpatient psychiatric care, their frequency of admissions due to suicide attempt, presence of suicidal ideation at the time of admission, and length of inpatient treatment were analyzed.

Results: 33.3 % of patients with bipolar psychotic depression were of Latino ethnicity, compared to 12.8% of patients with bipolar non-psychotic depression. No statistically significant differences between the two groups were found on family history of unipolar depression or bipolar depression, suicide attempts or suicidal ideation. 49 patients were experiencing suicidal ideation at the time of admission, the frequency of admissions due to suicide attempt was low; 8 patients had a suicide attempt that warranted admission. A trend ($p = 0.06$) was detected in the length of hospital stay when we compared the median length of stay of patients with bipolar psychotic depression (10 Â± 1.44 days) versus patients with bipolar non-psychotic depression (8 Â± 0.85 days).

Limitations: Relatively small sample size, in addition, diagnoses were not made using standardized measures and some information from regarding demographics and clinical characteristics was missing from the medical records.

Conclusions: We found no differences in the treatment approach between the two groups. We did find that for the treatment of an episode of bipolar depression (whether psychotic or nonpsychotic), that polypharmacy was common, antidepressants were used frequently, mood stabilizers were used sparingly (with lamotrigine being the most frequently used), and ECT was rarely used.
This study was funded by a Janssen Scientific Affairs, LLC Academic Research Mentorship Award.

THE ASSOCIATION BETWEEN SMOKING TOBACCO AND PSYCHOSIS IN BIPOLAR I AND SCHIZOAFFECTIVE BIPOLAR DISORDER

Lead Author: Elena Estrada, B.A., B.Sc.

SUMMARY:

Objective: Bipolar I patients smoke more then the general population which negatively impacts clinical course and overall mortality. Prior studies have shown contradictory results regarding the association between smoking and history of psychosis in Bipolar I disorder. We looked at a sample of Bipolar I and Schizoaffective Bipolar patients and predicted those with a history of psychosis would be more likely to smoke.

Methods: Data from subjects and controls were collected from the Genomic Psychiatry Cohort (GPC). Subjects were diagnosed with Bipolar disorder I (N=664) and were separated into patients with and without history of psychosis. A Schizoaffective Bipolar disorder (N=517) group was also included for comparison. Participants were classified with or without nicotine dependence. Case groups were compared to controls (N=2492) compared using chi square analysis.

Results: Final diagnosis, of mania with or without psychotic features, showed a significant association with nicotine use (Pearson Chi-Square = 1368.5, df =3, p = .000). The nicotine dependence prevalence of Schizoaffective Bipolar disorder, Bipolar I with psychosis, and Bipolar I without psychosis were 83.4%, 79.8%, and 69.6% respectively.

Conclusions: This study found an association between smoking and Bipolar I and Schizoaffective bipolar type. Patients were more likely to be dependent then controls, particularly those with a history of psychosis. This suggests that psychosis within severe mental illness makes patients more prone to abuse cigarettes.

PATIENT AND CAREGIVER PERSONALITY PATHOLOGY IMPACTS THERAPY MODE SELECTION IN BIPOLAR DISORDER

Lead Author: Tasnia Khatun, B.A.
Co-Author(s): Thomas Salvanti, B.A., Hae-Joon, B.A., Deimante McClure, B.A., Zimri S. Yaseen, M.D., Igor I Galynker M.D., Ph.D.

SUMMARY:

Introduction: Little is known about which aspects of Family-Inclusive Treatment (FIT) for bipolar disorder (BD) result in better outcome.This study examined the effect of patient and caregiver personality traits on treatment selection in the Family Center for Bipolar (FCB).
Method: The Post-Session Module Questionnaire tabulated the average extent of use of 8 psychotherapeutic modes (e.g., cognitive, behavioral, supportive) and the use of medication management for every patient being treated at the FCB. In addition, patients and caregivers completed a psychological battery that included assessments of mood and the Millon Clinical Multiaxial Inventory (MCMI).
Results: In a multiple regression with backwards elimination analysis, caregivers with Cluster B traits were associated with an increased use of supportive and emotion-focused interventions by clinicians. Alternatively, patients with Cluster B traits were associated with the

use of supportive and family assessments, as well as the frequent use of medication management and clinical assessment. No significant associations were found for Cluster A and Cluster C traits.
Conclusion: Personality pathology in both patients and caregivers appears to impact treatment method choice in FIT for BD. This dynamic may need to be accounted for when selecting and using family-oriented treatments.

COPING STYLES AND DISABILITY IN PERSONS WITH BIPOLAR DISORDER AND THEIR CAREGIVERS

Lead Author: Mona M. Maaty, M.D.
Co-Author(s): Lisa Cohen, Ph.D., Igor Galynker, M.D. Ph.D., Fumitaki Hayashi, M.D. Ph.D., Allison M.R. Lee, M.D., Deimante McClure, B.A.

SUMMARY:
Introduction: Coping style and functional disability are important factors in treatment choices by those with bipolar disorder (BD) and their families yet this issue has not been adequately researched. In this context we investigated the relationship between patient's functional disability and patients' and caregivers' coping styles in families seeking Family-Inclusive Treatment in the Family Center for Bipolar Disorder (FCBD).
Methods: Coping styles in the FCBD patients (N=21), their caregivers (n=22), and healthy controls (n=24) were assessed using the Brief COPE measure. Participants also completed the Sheehan Disability Scale (SDS), which measures impairment in work/school, social life, and family life/home responsibility,
Results: In multivariate analyses, patients use of emotional support, behavioral disengagement, and venting combined to predict high SDS global functioning score (more impairment) but none were significant alone. Caregivers' use of emotional support, venting, positive reframing, and surprisingly, use of substance, were significantly correlated with lower SDS scores. Caregivers' use of planning and religion were significantly correlated with increased patient disability.
Discussion: In Families choosing Family-Inclusive Treatment for BD, patients' disability was largely associated with caregiver rather than patient coping style. Further studies are needed to assess the relationship between caregiver coping style and treatment outcome in BD.

BIPOLAR DISORDER: AGE AT TIME OF DIAGNOSIS AND MORTALITY OVER AN 18-YEAR PERIOD

Lead Author: Clara R. Medici, M.S.
Co-Author(s): Poul Videbech, Prof., Lea NÃ¸rgreen Gustafsson, MSc, Povl Munk-JÃ¸rgensen, Prof. Dr.Med.

SUMMARY:
Introduction: The incidence of bipolar disorder has increased significantly since the late 1990's. This inspired an overview of the age distribution and mortality in patients with a first-ever diagnosis of bipolar disorder.

Aims: To investigate age at time of diagnosis of bipolar disorder in psychiatric care and to examine mortality and causes of death in a period of 18 years.

Methods: This is a register-based, nationwide cohort study. Patients receiving a first-ever diagnosis of bipolar disorder (ICD-10 code F31) between 1995 and 2012 were identified in the nationwide Danish Psychiatric Central Research Register. Causes of death were obtained from The Danish Register of Causes of Death. Mean age at time of diagnosis for each year, standardized mortality ratio (SMR) and Kaplan-Meier survival estimates were calculated.

Results: In total 15,334 incident cases of bipolar disorder were identified. Mean age at time of diagnosis decreased from 54.5 years (SD=16.8) in 1995 to 42.4 years (SD=16.5) in 2012. Thus, age at time of diagnosis has decreased more than 10

years (p<0.001). The mean SMR was 1.7 (95%-CI=1.2-2.1) and remained stable throughout the period. 82.1 % of deaths were due to natural causes, 14.8 % were due to unnatural causes and 3.1 % were unknown. Compared with females, twice as many males died as a result of accidents, suicide or violence/homicide. The greater number of deaths from unnatural causes occurred in the first 5 years after diagnosis.

Conclusions: The age at time of diagnosis of bipolar disorder has decreased steadily over a timeframe of 18 years. However, this has not affected the mortality, which is higher compared to the general population. Focus on both natural and unnatural causes of death is important to lower mortality. Prevention of unnatural death is especially pressing the first years after first-ever diagnosis. However, natural causes are the most frequent causes of death and occur throughout life.

BIOLOGICAL CORRELATES AND CLINICAL CHARACTERISTICS OF EARLY LIFE STRESS IN BIPOLAR DISORDER ACCORDING TO A STAGING MODEL

Lead Author: Juliana B. Moraes, M.D.
Co-Author(s): Sandra Odebrecht Vargas Nunes, M.D., Ph.D., DÃ©cio Sabbatini Barbosa, Ph.D., Fernanda Liboni Cavicchioli, M.D., Regina Rezende, Msc. , Kamila Landucci BonifÃ¡cio, Msc.

SUMMARY:

Aim: This study examined current evidence on Early Life Stress (ELS) and Bipolar Disorder (BD) in terms of clinical characteristics and biological correlates and proposes a data interpretation of these findings based on a staging model.
Main methods: A targeted and narrative literature review was conducted and we discuss the results from a staging perspective.
Key findings: Based on Kapczinski et al suggested model, in a latent phase individuals with history of Early Life Stress would add risk of developing Bipolar Disorder when genetically predisposed. These patients have early onset of disease, higher rates of suicidality and substance abuse, progressing in a faster pace towards advanced stages of BD. More frequently than bipolar patients with no history of ELS, this subset presented interepisodic depressive symptoms and comorbid anxiety, an indicative of stage II. Interestingly, smaller corpus callosum volume (biological feature of stages III and IV) were found in first manic episode subjects with ELS which means even though in early clinical phase (stage I) they presented a phase III-IV biological finding. Lower levels of Brain-Derived-Neurotrophic Factor â€“ BDNF â€“ a suggested marker of neuronal dysfunction - were also found in bipolar patients with history of ELS when compared to bipolar patients with no such history. Recently, prominent forms of Early Life Stress like physical, psychological and sexual abuse have been studied in Bipolar Disorder, mainly focusing on prevalence and clinical presentation. Very few studies report neurobiological correlates of this association and further research is necessary to better understand the complex interaction between genes and ELS in BDÂ´s pathophysiology.
Significance: The use of clinical staging models in Psychiatry is emerging in an attempt to analyze not only diagnostically defined signs and symptoms but also comorbidities, neurobiological findings and neuroprogression. Despite the strong heritability of Bipolar Disorder, the exploration of environmental aspects of the disease is necessary due to the possibility of future primary and secondary prevention measures once this relationship is understood.

VALPROIC ACID-INDUCED HYPERAMMONEMIA AND MINIMAL HEPATIC ENCEPHALOPATHY IN ACUTE PSYCHIATRIC SETTING

Lead Author: Surender Punia, M.D.

Co-Author(s): Surender Punia, MD1, Amanda Q. La, PharmD2, Kelan Thomas, PharmD, MS, BCPS, BCPP2, , Shadi Doroudgar, PharmD, BCPS, CGP2, Terry McCarthy, PharmD1, Paul J. Perry, BPharm, PhD, BCPP, FCCP2

SUMMARY:
BACKGROUND: Valproic acid (VPA) therapy has the potential to cause hyperammonemia (HA), which may result in a form of hepatic encephalopathy (HE) labeled as VPA-induced hyperammonemic encephalopathy (VHE). VHE is a rare, but severe, adverse drug reaction characterized by lethargy, vomiting, cognitive slowing and/or focal neurological deficits. However, HE signs and symptoms present on a spectrum and may be difficult to detect, especially in cases of minimal hepatic encephalopathy (MHE). The Psychometric Hepatic Encephalopathy Score (PHES) is a battery of five neuropsychological tests used to quantify cognitive impairment and detect MHE in cirrhotic patients.

OBJECTIVES: The present study aims to (1) examine the relationship between VPA-induced HA and MHE cognitive impairment as measured by PHES, which has never been tested in psychiatric populations at risk for MHE; and (2) analyze the correlation between ammonia plasma concentration and steady-state VPA plasma concentrations (VPASS).

METHOD: Adult patients (aged 18 to 65 years) receiving VPA therapy at St. Helena Center for Behavioral Health from December 2013 through April 2014 were recruited and categorized into two exposure groups for data analysis, HA or normal ammonia. All patients completed the PHES battery within 24 hours of ammonia plasma concentration and VPASS were drawn. Patients with a score of < -4 were classified as positive for MHE cognitive impairment. Statistical analysis included Pearson chi-squared test for categorical data, 2-sample t-test for continuous data and Pearson's correlation coefficient for the relationship between ammonia plasma concentration and VPASS. A p-value <0.05 was considered statistically significant.

RESULTS: A total of 46 patients participated, 16 (34.8%) in the HA group and 30 (65.2%) in the normal ammonia group. The two groups did not differ significantly in demographic data (i.e., gender, age, education level, ethnicity, height and weight) and clinical characteristics (i.e., discharge diagnosis, VPA therapy, and concurrent medications). Approximately 41.3% of the patients tested positive for MHE cognitive impairment, but the proportion tested positive did not differ significantly between the two groups (Ï‡2 = 0.61, p = 0.81). There was a weak, but positive correlation between ammonia level and VPASS (r = 0.31, p = 0.04).

CONCLUSION: Results from the present study suggested there is no significant association between HA and MHE cognitive impairment as measured by PHES. However, this study replicated a previous findings that ammonia plasma concentration was positively correlated with valproic acid plasma concentration.

Disclosure Statement The authors of this study has no potential conflict of interest and this study was not funded.

SELF-REPORTED REASONS FOR CANNABIS USE AND RELATED SEVERITY OF SYMPTOMS IN BIPOLAR, DEPRESSED, AND PSYCHOTIC INDIVIDUALS

Lead Author: Maria F. Roccisano, M.D.
Co-Author(s): Michael Colin, M.D., Elizabeth Chavez, Igor Galynker, M.D., Ph.D., Zimri Yaseen, M.D.

SUMMARY:
Background: Cannabis has been associated with worsened outcomes and increased severity of illness for psychiatric

patients. Directions of causality between cannabis use and mental illness remain a matter of controversy in the research. There are limited data to show correlation between self-reported reasons for use across diagnoses and symptom severity. Our hypothesis is that cannabis-using patients who self-report using cannabis to alleviate depressed moods will score higher on Beck Depression Inventory (BDI) and Young Mania Rating Scale (YMRS), Items 2 and 9, assessing agitation.
Methods: Preliminary analysis of data collection from adult male and female psychiatric inpatients of Beth Israel Medical Center was completed. Included in the analysis are DSMIV diagnosis of unipolar depression, bipolar disorder or psychotic disorder, four questions related to reasons for cannabis use, self-rated BDI and Cannabis Use Disorder Identification Test (CUDIT) scores and research clinician rated YMRS scores. Self-reported reasons for cannabis use were compared across diagnostic categories. We also looked at how these reported reasons are related to symptoms across and between diagnostic categories. For this, we examine relations between total CUDIT, BDI, YMRS scores and YMRS specific scores to question 2 and 9 (pertaining to agitation and increased activity) and specific reasons for cannabis use.
Results: Results from 53 participants suggest that 50% of unipolar depressed, 83% of bipolar 73% of schizophrenia patients use cannabis to treat depressive symptoms. These differences approach statistical significance (p=0.067). T-tests showed statistically significant differences on YMRS question 9 (aggressive behaviors) between those who use cannabis to treat depressive symptoms and those who do not (p=0.004). Within diagnostic categories, significant differences were seen in unipolar depressed for BDI scores (p=0.039), in bipolar for YMRS question 2(p=0.009) and 9 (p=0.055), and in psychotic individuals for YMRS Q 9 (p=0.049).
Conclusion: Cannabis use is associated with depressive symptoms in unipolar depression, greater motor activity and aggression in bipolar, and greater agitation in psychosis. This may represent diagnosis specific drug effects and suggest areas of treatment focus for providers.

BIPOLAR PATIENTS WITH AND WITHOUT ALCOHOL DEPENDENCE

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Co-Author(s): Elizabeth C. Penick, Ph.D., Elizabeth J. Nickel, M.A., Ekkehard Othmer, M.D., Ph. D., Lisa A. Shenkman, M.D., William F. Gabrielli, M.D., Ph. D.

SUMMARY:

Objective: To compare a large group of bipolar outpatients who did or did not met criteria for alcohol dependence along multiple clinical dimensions. Method: Of 1,458 consecutive patients seeking treatment in an Outpatient Psychiatry Clinic, 275 (19%) satisfied DSM-III criteria for Bipolar I disorder using a highly detailed, structured interview. Of these 275 patients, 24 percent (n=66) also met criteria for DSM-III alcohol dependence. A structured diagnostic interview and written questionnaires were used to document sociodemographic features, a family history of psychiatric illness, psychiatric comorbidity, ages of depression and mania onset, lifetime symptoms of depression and mania, and early childhood traits. Results: Bipolar patients with alcohol dependence were significantly younger at study intake and included more male patients. No other sociodemographic features were significantly different between the two groups. Bipolar patients with alcohol dependence reported significantly more first degree relatives with alcoholism, drug abuse, mania, depression, ASPD, and somatization disorder. Overall psychiatric comorbidity was significantly greater in the bipolar patients with alcoholism. The mean number of positive psychiatric syndromes (excluding mania, depression and alcoholism) was 1.3 + 1.34 for patients

without alcoholism and 1.70 + 1.83 for patients with alcoholism (p<.0001). Drug Dependence, OCD, and ASPD were found significantly more often in bipolar patients with alcoholism. The group with alcohol dependence also reported significantly more mania symptoms, significantly more depression symptoms, and younger ages of onset of mania and depression than the bipolar patients without alcoholism. Three of the four ratings of childhood happiness and problems favored the non-alcohol group. Conclusions: Clinicians might want to be alert to the added problems present in bipolar patients with alcoholism. Bipolar patients with alcoholism appear to represent a distinct subgroup with a more severe clinical picture than bipolar patients without alcoholism.
Word Count: 288
Character Count: 1,800

EFFECT OF TRAUMA HISTORY AND ATTACHMENT STYLE IN PATIENT AND CAREGIVER ON TREATMENT METHOD SELECTION

Lead Author: Hae-Joon Kim, B.A.
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SUMMARY:
Introduction: Childhood trauma history and adult attachment style have important clinical implications and likely influence treatment outcome. Such information may be useful in maximizing patient-treatment fit. This study investigated the effect of patient and caregiver trauma history and attachment style on therapists' use of 10 different clinical interventions in family-focused treatment for bipolar disorder.
Methods: The Child Trauma Questionnaire, Relationship Style Questionnaire and Post Session Methods Questionnaire were administered to 36 patients and 35 caregivers. Multiple regressions with backwards elimination method were performed, regressing 10 treatment methods against total trauma and secure, dismissing, preoccupied and fearful attachment scores for both patients and caregivers.
Results: For patients, models for trauma history, and secure, preoccupied and dismissing attachment styles were statistically significant (R2=.250,.094,.170,.209, respectively). For caregivers, models were significant for secure attachment (R2=.336) and marginally significant for trauma and dismissing attachment (R2=.069,.128).
Discussion: To illustrate, with traumatized patients, therapists used a combination of more crisis management and family, supportive and behavioral interventions but fewer cognitive interventions. Childhood trauma history and attachment style in both patient and caregiver predict methods used in family-focused treatment for bipolar disorder, suggesting possible customized treatments for such patients.

CURRENT IRRITABILITY ROBUSTLY RELATED TO CURRENT AND PRIOR ANXIETY IN BIPOLAR DISORDER

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Co-Author(s): Shefali Miller, M.D., Po W. Wang, M.D., Farnaz Hooshmand, M.D., Jessica N. Holtzman, B.A., Kathryn C. Goffin, B.A., Terence A. Ketter, M.D.

SUMMARY:
Background:
Although current irritability and current/prior anxiety are associated in unipolar depression, these relationships are not as well understood in bipolar disorder (BD). In BD, both irritability and anxiety have been reported across mood states, and are associated with unfavorable illness characteristics and worse outcomes. The present study investigated relationships between current irritability and current/prior anxiety as well as other current emotions and BD illness characteristics.
Methods:
Outpatients referred to the Stanford Bipolar Disorder Clinic during 2000-2011 were

assessed with the Systematic Treatment Enhancement Program for BD (STEP-BD) Affective Disorders Evaluation. Prevalence and clinical correlates of current irritability and current/prior anxiety were examined. Chi-square tests and McNemar's tests were used to assess comparisons of independent and dependent categorical parameters, respectively, with a two-tailed significance threshold of $p < 0.05$.
Results:
Among 503 BD outpatients (244 Type I, 259 Type II; 58.3% female; meanÂ±SD age 35.6Â±13.1 years), 301 (59.8%) had current irritability at baseline. Patients with compared to without current irritability had significantly higher rates of current anxiety (77.1% versus 43.1%, $p < 0.0001$) and history of anxiety disorder (73.4% versus 52.0%, $p < 0.0001$). Current irritability was more robustly related to current anxiety than to current anhedonia, depression, or mood elevation (McNemar's p's all < 0.001), and current irritability-current anxiety associations were statistically significant independent of current predominant mood state (i.e., in patients with current syndromal/subsyndromal mood elevation, syndromal/subsyndromal depression, or euthymia, p's all < 0.05). Current irritability was also more robustly related to history of anxiety disorder than to family history of mood disorder, bipolar subtype, history of alcohol/substance use disorder or suicide attempt, rapid cycling, and childhood onset of BD (McNemar's p's all < 0.05).
Limitations:
Limited generalizability beyond our predominately white, female, educated, insured American BD specialty clinic sample.
Conclusions:
In BD, current irritability was robustly related to current/prior anxiety. Further studies are warranted to assess longitudinal clinical implications of relationships between irritability and anxiety in BD.

EFFECTIVENESS OF ANTIDEPRESSANT MEDICATIONS FOR SYMPTOMS OF IRRITABILITY AND DISRUPTIVE BEHAVIOURS IN CHILDREN AND ADOLESCENTS

Lead Author: Khrista Boylan, M.D., Ph.D.
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SUMMARY:

Chronic irritability is a common presenting symptom in children and youth in both clinical settings (25%) as well as in the community (6-8%). Treatment of irritability is relatively understudied. No studies to date have specifically examined the effect of antidepressant medications for the treatment of irritability in children and youth. This paper will synthesize evidence regarding the efficacy and safety of antidepressants for the treatment of irritability in children and youth. Method: Systematic review of the literature was conducted to identify studies including youth aged 6 to 18 that assessed the effectiveness of antidepressant medications for the treatment of behavioural dimensions such as oppositionality, irritability, aggression and impulsivity. Studies of youth with developmental disabilities or autism spectrum disorders were excluded. Results: We identified 11 studies (3=RCTs) assessing the effect of antidepressants in improving irritability (N=2), aggression (N=4), oppositional or disruptive behaviour symptoms (N=5) as secondary outcomes. Seven studies examined SSRI medication, four studies examined tricyclic antidepressants and one examined trazodone. Five studies involved clinically depressed participants and 5 were exclusively male samples. Eight of the eleven studies reported significant effects on either aggression or irritability with antidepressant exposure, although effect sizes in all but 2 studies were less than 0.25. These effects significantly reduced but remained significant in 7 of these studies after controlling for changes in comorbid depression scores with

treatment. The other 3 studies reported no change (1), an increase in frequency of self harm or aggressive behaviours (1) or benefit in only a subsample of youth who tolerated the antidepressants after 1 year of follow up (1). Conclusion: Antidepressant medication exposure appears to have a small effect on Irritability and related symptoms in youth. Heterogeneity in study sample and absence of irritability being measured as a primary outcome across studies restrict the validity of the conclusions. Irritability is a debilitating outcome that needs specific attention in medication treatment studies.

ABERRANT CEREBROCEREBELLAR CIRCUITS IN INDIVIDUALS AT ULTRA-HIGH RISK FOR PSYCHOSIS: A RESTING-STATE FMRI STUDY

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SUMMARY:

Schizophrenia is considered as a 'dysconnection syndrome' characterized by an abnormal integration between distinct brain regions. It has become evident that aberrant functional networks in the brain predate the development of overt psychosis, especially in individuals at ultra-high risk (UHR) for psychosis. We investigated functional networks using graph theoretical analysis in UHR individuals comparing with patients with first-episode schizophrenia (FES) and healthy controls (HC), and explored the difference between converters and non-converters to find out neurofunctional correlates of an increased risk to psychosis.

Thirty-two UHR individuals (including 7 converters), 17 patients with FES, and 58 HC subjects underwent fMRI scanning during rest. We examined the graph-theoretical properties of the functional networks using graph independent component analysis (graph-ICA). Global properties of the whole-brain network and usage-strengths of each independent component (IC) were computed. Statistical comparisons were conducted for three groups and converters and non-converters in the UHR group.

UHR subjects and patients with FES showed significant decrease in both global and local efficiencies. When usage-strengths of ICs were compared in three groups, 5 components were shown to be significantly different. The FES group exhibited an increased usage-strength of IC6, based in the cerebrocerebellar circuits involving sensory-motor and association cortex. Converters also recruited IC6 more than non-converters as patients with FES.

These results suggest that patients with schizophrenia have aberrant cerebrocerebellar circuits which already evident in the prodromal phase, particularly in individuals who later become psychosis. The cerebellum, as an internal-model control system, may play an important role in developing psychosis, in line with the concept of 'cognitive dysmetria'. Our finding would provide insight into the pathogenesis of schizophrenia and its influence on the ultra-high risk state and early diagnosis.

PITUITARY DYSFUNCTION AND NEUROPSYCHIATRIC SEQUELAE FOLLOWING BLAST-RELATED MILD TRAUMATIC BRAIN INJURY

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SUMMARY:

Traumatic brain injury (TBI) is caused by blunt force trauma, acceleration/deceleration injury, penetrating head injury or exposure to blast force, such as from improvised explosive devices (IEDs). Blast-related mild TBI (mTBI), or

concussion, is a growing concern in the military and is the most frequent single injury from combat in Iraq and Afghanistan, seen in approximately 20% of returning service members. Studies of TBI in civilians have reported prevalence of chronic hypopituitarism, defined as deficiency of production of at least one pituitary hormone 1 year after injury, of 25-50%. Recent studies have indicated that the prevalence of hypopituitarism after blast-related mTBI approaches, and perhaps exceeds, that seen in civilians. The pituitary gland is particularly susceptible to damage by explosive blast due to its confined location in the bony sella turcica, its connection to the hypothalamus by a narrow stalk (infundibulum) and its vulnerable blood supply. Pituitary hormones play an important role in regulating several processes including growth, metabolism, thyroid function and gonadal function. Hypopituitarism, particularly adult growth hormone deficiency, is associated with fatigue, anxiety, depression, irritability, insomnia, sexual dysfunction and cognitive deficits. Post-traumatic stress disorder (PTSD) is a common co-occurring disorder with mTBI, and symptoms of PTSD and hypopituitarism are often indistinguishable from each other. We measured concentrations of anterior pituitary and target organ hormones in 2 groups of Veterans of combat in Iraq or Afghanistan-Veterans who suffered from blast-related mTBI and a control group of deployed Veterans who did not experience blast-related mTBI. Our data indicate hormone deficiencies in up to 26% of blast exposed Veterans and 15% of deployed controls. The most common hormone deficiency was that of growth hormone, observed in 16% of Veterans who suffered from blast-related mTBI compared to 5% of deployed controls. Also, 5% of Veterans with blast-related mTBI had thyroid hormone deficiency compared to none in the deployed controls. Psychiatric sequelae of undiagnosed pituitary hormone deficiencies include anxiety, depression and irritability along with metabolic and cardiovascular abnormalities. PTSD-induced psychiatric symptoms are highly difficult to treat successfully, but if these symptoms are a consequence of hypopituitarism, there is evidence that supplementing deficient hormones can have a positive impact. Our results support routine screening for hypopituitarism after blast-related mTBI. Accurately diagnosing and subsequently treating hypopituitarism in mTBI patients, and particularly in returning service members, may alleviate psychiatric symptoms that might otherwise be mistaken for those of PTSD and significantly improve quality of life.

REPETITIVE TRANSCRANIAL MAGNETIC STIMULATION ON SUPPLEMENTARY MOTOR AREA IN THE CHILDREN AND ADOLESCENTS WITH TREATMENT-RESISTANT TOURETTE SYNDROME

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SUMMARY:
Objectives:
The aim of the current study was to assess the efficacy and safety of 1 Hz repetitive transcranial magnetic stimulation(rTMS) on the supplementary motor area(SMA) in children and adolescents with treatment-resistant Tourette syndrome(TS).

Methods:
A pilot open label 12 weeks cohort study was undertaken. 10 children and adolescents (mean age 12.30Â±3.05 years) diagnosed with TS according to Diagnostic and Statistical Manual of Mental Disorders version IV and Kiddie-Schedule for Affective Disorders and Schizophrenia-Present and Lifetime version were included. Patients with TS are considered treatment

resistant when they failed to respond to a behavioral intervention, such as habit reversal training; experiencing considerable current tic severity (Yale Global Tic Severity Rating Scale (YTSS)>20) that persisted for at least 4 months; showing a lack of response to therapeutic doses of at least two full trials of medications of proven efficacy for tics, including antidopaminergic drugs and Î±-2 adrenergic agonists. The participants received rTMS on SMA daily for 20 days(1 Hz, 100% of motor threshold, and 1,200 stimuli/day).

Results:
Out of 10 participants, 9 participants completed the study with no severe side effects and no worsening of ADHD or depressive and anxiety symptoms. Tic symptoms improved significantly over the 12 weeks of the study. Statistically significant reductions were seen in the Yale Global Tourette's Syndrome Severity Scale(YGTSS)(p=0.045) and Clinical Global Impression-Tourette syndrome(CGI-TS)(p=0.041). The reduction of vocal tic contributed to the reduction of global YGTSS rather than that of motor tic.

Conclusion:
Treatment of 1 Hz rTMS over the SMA can be an efficient and relatively safe therapeutic tool in children and adolescents with treatment-resistant TS.

STUDY OF LEAD TIME TO PRESENTATION OF PANDAS IN AN OUTPATIENT SETTING

Lead Author: David Neger
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SUMMARY:

Introduction: PANDAS, is an abbreviation for Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections such as strep throat or Scarlet Fever. Strep A has been implicated as a cause of PANDAS but there has been no research to study the time it takes for PANDAS to appear following a Strep A infection. We propose to study the charts of children diagnosed with PANDAS and those that were not and investigate the differences between the two groups and to also determine how long it takes for PANDAS to develop. Hypothesis: There continues to be controversy surrounding PANDAS as there are questions that need to be studied further such as whether PANDAS is actually an autoimmune disease, the nature of association between Strep A and PANDAS, and whether PANDAS is sufficiently different from OCD/tic disorder to be considered a separate entity. Our objective is to compare a population diagnosed with PANDAS with a group that was never diagnosed and search for comparisons and differences between the two groups. We also plan to determine the time-frame to developing PANDAS following a strep A infection. Methods: This is a retrospective case-control study of children diagnosed with PANDAS vs. children not diagnosed with PANDAS to examine the differences between both groups. The data will be collected from charts at a pediatric outpatient clinic. At least 37 charts per group will be used in order to obtain 80% power, assuming 35% of patients will have strep A infection but not PANDAS and that 67% of PANDAS patients will have had strep A infections. We will also study a minimum of 100 charts from patients from both groups to determine the time to developing PANDAS following a Strep A infection. Randomly selected clinic patients who were diagnosed with PANDAS will be included in the case group. For the control group, patients who were not diagnosed with PANDAS but attended the clinic in the same period would be included. Results: This is an ongoing study and the data analyses are not complete. We envision that by using the above stated method of data collection and analyses we will obtain statistically sound data that will further our understanding of PANDAS. Conclusion: This research is important to further the

understanding of PANDAS and its association with Strep A infections. There continues to be controversy surrounding PANDAS as there are questions that need to be studied further such as whether PANDAS is actually an autoimmune disease, the nature of association between group a strep and PANDAS, and whether PANDAS is sufficiently different from OCD/tic disorder to be considered a separate entity.

FRAGILE X SYNDROME AND INCREASING IMPULSIVITY WITH AGE

Lead Author: Kalliopi S. Nissirios, M.D.
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SUMMARY:
Fragile X Syndrome (FXS) is the leading inherited cause of mental retardation and autism spectrum disorder worldwide. It is associated with CGG trinucleotide repeat affecting Fragile X mental retardation 1 gene on the X chromosome. With lack of the fragile X mental retardation protein (FMRP), there is dysregulation of synaptically driven protein synthesis secondary to abnormalities in translation of neuronal proteins. This in turn leads to synaptic plasticity. Clinically, these patients exhibit marked neurological impairments in cognitive and psychomotor functioning alongside the typical physical findings of long face and large ears.
In addition to these neurological impairments, there is significant deficit in social lives of the FXS patients due to deviation from the normal social behaviors. It is the accumulation of the abnormally synaptic plasticity over time which leads to consistent, intermittent behavioral abnormalities. Therefore, a link between FXS with other neurological and neurobehavioral problems like ADHD, hyperactivity/ impulsivity, aggressiveness, multiple anxiety symptoms and self-injurious behavior has been proposed. It is found that these behavioral abnormalities are significantly out of proportion to the cognitive impairment exhibited by these patients. Previous research by Borghgraef et al. in 1987, also indicates that impulsivity and aggressiveness decreases with age despite the decrease in IQ.
Our goal is to assess a relationship between FXS and neurobehavioral impairment, more specifically impulsivity and aggression. The case involves an adult Caucasian male with FXS and increasing impulsivity and aggression with minimal anxiety provoking situations. The purpose of this case report is to highlight the comorbidity of aggression and FXS with increasing age, unlike previous research, and to highlight the need for future pharmaceutical interventions for patients with FXS.

DEVELOPMENT OF DEPRESSION AMONG ASIAN ADOLESCENTS: MANAGEMENT OPTIONS, NEED FOR INCREASED AWARENESS, AND NEED FOR EARLY DETECTION OF SYMPTOMS

Lead Author: Kalliopi S. Nissirios, M.D.
Co-Author(s): William Greg Levitt, M.D., Juan Pimentel, M.D., Srinivasa Gorle, M.D., Muhammad Puri, M.D., Edward Hall, M.D., Asghar Hossain, M.D.

SUMMARY:
It has been repeatedly studied and reported in current literature that Major Depressive Disorder among the Adolescent Asian American population, particularly females, has the highest rate of any race, gender or ethnic group, reaching as high as 71 % in females from Southeast Asia. It has been observed as well, that between the ages of 15 to 24 years young Asian Americans females have higher incidences of suicide rate than any other ethnic or racial group. Overall suicide is the fifth leading cause of death among Asian Americans compare to ninth for White Americans. Studies suggest a strong correlation in this specific Ethnic group, between MDD and parental pressure to become high achievers. This is accentuated by their traditional focus on

education paired with great obedience and self-control. Another precipitating factor is that these Adolescents have a lower rate of externalizing their problems, both due to the fact that they are considered a "Model Minority" among their cultural society, as well as the fact that they are afraid of being stigmatized.
We came across a very interesting case in our hospital, of a 15 year old Korean adolescent female, who met the criteria for Major Depressive Disorder after she attempted to commit suicide due to extreme pressure for academic achievement as well as continuous conflicts with her parents. We will describe this case and the outcome, as well as propose management options, according to current review of literature, for patients presenting with similar background as well as similar symptoms. This would be a an initial approach to raise awareness among providers that serve this population and potentially lead to early detection of symptoms as well as prompt and effective treatment.

THE CLINICAL RELATIONSHIP BETWEEN ATYPICAL ANTIPSYCHOTIC USE AND WEIGHT GAIN IN CHILDREN: A REVIEW OF RECENT EVIDENCE

Lead Author: Doug Taylor, B.S.
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SUMMARY:
Introduction
The mechanisms that govern weight gain in patients on atypical antipsychotics are complex and incompletely understood. The nuanced interplay between dopaminergic, serotonergic, histaminergic, and muscarinic systems is thought to play a role in satiety and appetite. Genetic and environmental factors, individual patient response, and polypharmacy are likely involved as well. As with other cardiometabolic effects associated with atypical antipsychotics, treatment-naÃ¯ve child and adolescent patients are more susceptible than adults to weight gain. The prevalence of antipsychotic-induced weight gain, and its long-term impact on young patients, is clouded by an incomplete clinical record of long-term studies.
Methods
A systematic literature search of PubMed, Embase, and Ovid was performed using terms related to atypical antipsychotics, weight gain, metabolic effects, adolescents, and children (aged 5-18). All clinical data included in this recent analysis were published after 2010. A total of 50 clinical articles were analyzed and reviewed.
Results
Incidence of weight gain and its attendant metabolic effects vary significantly among atypical antipsychotics. Olanzapine, clozapine, and risperidone caused significant weight gain and metabolic complications at standard pediatric doses. Quietapine is better tolerated with regard to weight, though results differ between short and long-term studies. Multiple studies suggest aripiprazole and ziprasidone have the least effect on weight gain in child and adolescent patients.
Conclusion
Potential therapeutic options for pediatric patients being prescribed atypical antipsychotics are numerous and have similar efficacy. In many young patients, treatment choices are dictated by safety and tolerability rather than measures of efficacy. Guidelines advise clinicians to augment or switch treatment when presented with antipsychotic weight gain in adolescents. The long-term effect of atypical antipsychotic-induced weight gain and its corresponding cardiometabolic abnormalities remains unclear and presents an opportunity for further research.

CHILDHOOD ADVERSITY AND COGNITIVE STYLE IN MOOD DISORDERS

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SUMMARY:
The incidence of mood disorders has long been associated with childhood adversity (CA) yet a model that fully explains the association is lacking. One possible pathway is that childhood adversity may lead to maladaptive cognitive styles (CS) which in turn predisposes individuals to mood disorders. We studied a sample of 162 adult patients with diagnoses of major depression or bipolar disorder confirmed using the Structured Clinical Interview for DSM-IV Disorders to test the association between CA and CS. CA was assessed using the Childhood Experience of Care and Abuse Questionnaire (CECA-Q3) questionnaire which measured parental neglect, antipathy, role reversal, and sexual, physical and psychological abuse. CS was assessed using the Cognitive Style Questionnaire which yields four dimensions (globality, stability, internality, and low self-worth) of depressive cognitive vulnerability. The dimensions were also summed to generate a total CS score. Linear regressions were conducted using each dimension of CS as well as the total score as outcomes and the different types of CA as the exposures. Associations were found between paternal physical abuse and globality; paternal physical abuse and decreased self-worth; psychological abuse and stability; antipathy and stability; psychological abuse and total CS score; and sexual abuse and total CS score. Specific types of CA are associated with various dimensions of cognitive vulnerability. In the talk therapy treatment of mood disorders (e.g. CBT), an assessment of CA should be completed as it may predispose to specific faulty patterns of thinking that may difficult to modify and lead to perpetuation of mood symptoms.

COMPARISON OF ARIPIPRAZOLE VERSUS BUPROPION AUGMENTATION FOR THE TREATMENT OF FEMALE PATIENTS WITH MAJOR DEPRESSIVE DISORDER

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SUMMARY:
Objectives:
The purpose of this study was to compare the bupropion combination to aripiprazole augmentation therapy of female patients with major depressive disorder unresponsive to selective serotonin reuptake inhibitors (SSRIs).
Methods:
A 6-week, randomized prospective open-label multi-center study in female patients with major depressive disorders was undertaken. A total of 64 female patients with major depressive disorder were enrolled in this study from July, 2011 to February, 2014 through 6 centers. Participants had at least moderately severe depressive symptoms after 4 or more week treatment with SSRIs. They were randomized to receive aripiprazole(2.5-20 mg/day) or bupropion (150-300 mg/day) for 6 weeks. Concomitant use of psychotropic agents (neuroleptics, anticonvulsants, antidepressants, mood stabilizers, opioid analgesics, stimulants and barbiturates) were prohibited during the study. Treatment for extrapyramidal symtoms (EPS) (benztropine, propranolol) was permitted. Clinically appropriate use of benzodiazepines and other hypnotics was permitted. We compared HAM-D-17, Iowa Fatigue Scale (IFS), Drug Induced Extrapyramidal Symptoms Scale(DIEPSS), Psychotropic-Related Sexual Dysfunction Questionnaire(PRSexDQ) at screening (visit 0), baseline, 1, 2, 4, 6 week between aripiprazole augmentation group and bupropion combination group.
Results:
There were no significant differences across the demographic characteristics

between aripiprazole augmentation group(n=33) and bupropion combination group(n=34). Also, HAM-D in baseline assessment was not significantly different between two groups. Overall, patients from both groups displayed gradual improvement. Aripiprazole group had significantly greater improvements on the HAM-D, CGI-S at 1, 2, 4, 6 week(<.05). Aripiprazole group had higher remission rate at week 4, 6 by HAM-D(<.05). There were no differences on the IFS, DIEPSS and PRSexDQ between two groups.
Conclusion:
This results suggest that aripiprazole augmentation therapy compared to bupropion combination therapy with SSRIs was more clinically effective in the treatment of female patients with major depressive disorder who were unresponsive to SSRIs.

ORAL KETAMINE IN THE TREATMENT OF REFRACTORY DEPRESSION: A CASE SERIES

Lead Author: Sarah A. Jillani, M.D.
Co-Author(s): Stephen Rappaport, Pharm.D., Leighton Huey, M.D.

SUMMARY:

Introduction: There is considerable interest in the concept of rapid acting antidepressants, and in particular, the use of intravenous ketamine (Sancora et al, Biol Psychiatry 73:1123, 2013). Oral dosing would enable patients to start and continue therapy in a home setting. As the combined bioavailabilities of ketamine and its metabolite, norketamine, are amenable to oral dosing (Chong C, et al, Clin Drug Invest. 2009;29:317-24), we have used maintenance oral ketamine in several patients as adjunct therapy for refractory depression.
Goal/Hypothesis: We intended to investigate the clinical effectiveness of multiple doses of oral ketamine in four patients for the treatment of refractory depression. Our hypothesis was that treatment with maintenance dosing of oral ketamine would be effective as an adjunct in the treatment of refractory depression in several patients, while offering an easier route of administration. Effectiveness was quantified through several psychiatric scoring systems that were used in the normal course of treatment of these patients. Objective: The primary objective was to evaluate symptoms of depression through a period of treatment as measured by the HAM-D (Hamilton Depression rating Scale) and PHQ-9 (Patient health questionnaire). Additional scales used included the BPRS and the SF-36.Method: This was a retrospective case series. IRB approval was obtained. We evaluated four patients who were identified to have refractory major depression and signed informed consent to receive off- label oral ketamine as adjunct therapy. Initial dosing was 0.5mg/kg. Once it was determined that patients tolerated this dosage, it was raised to 0.75mg/kg. Patients were initially given thrice weekly doses and instructed to continue with frequent follow ups at the outpatient clinic. Results: All patients achieved almost 50% reduction in symptoms of depression according to structured assessments by the end of the first month. Case 1: Baseline Scores (PHQ-9: 21, HAM-D: 23). Two weeks post-Ketamine: (PHQ-9: 5, HAM-D: 11), One month post-Ketamine: (PHQ-9: 10, HAM-D: 15). Case 2: Baseline Scores (PHQ-9: 22, HAM-D: 20). Two weeks post-ketamine: (PHQ-9:24 HAM-D: 22) One month post-Ketamine: (PHQ-9: 14, HAM-D: 15) Case 3: Baseline scores: (PH-Q-9: 15, HAM-D: 20), Two weeks post-ketamine (PHQ-9: 8, HAM-D: 12) One month post-Ketamine: (PHQ-9: 6, HAM-D: 8). Case 4: Baseline Scores: (PHQ-9: 26, HAM-D: 22), two weeks post-ketamine (PHQ-9:14, HAM-D: 11) One month post- Ketamine: (PHQ-9: 9 HAM-D:7). Conclusion: This open-labeled trial of oral ketamine as adjunctive therapy for refractory depression is a preliminary step in evaluating the effectiveness of multiple doses of oral ketamine for treatment of depressive symptoms. Our

findings add to the discussions that demonstrate the use of oral ketamine administration to target refractory depression. It also adds the existing literature published regarding use of multiple ketamine doses.

SOCIAL AVOIDANCE AS A FEATURE OF JAPANESE PATIENTS WITH MAJOR DEPRESSIVE DISORDER

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SUMMARY:
Back ground
Major depressive disorder (MDD) is a highly heterogeneous mental disorder, leading to problems in nosology and specificity of treatment. Personality traits predict, and may influence the course of depression. In modelling this heterogeneous depression, non-melancholic conditions vary in their status and are often multi-axial. In order to subgroup non-melancholic depression, Gordon Parker et al. (2006) developed the Temperament and Personality questionnaire (T&P). T&P are consisted with 8 personality constructs: 1) anxious worrying, 2) perfectionism, 3) personal reserve, 4) irritability, 5) social avoidance, 6) rejection sensitivity, 7) self-criticism and 8) self-focus. The purpose of the present study was to compare Japanese patients with Gordon Parker's original patients (2006) and to clarify the temperament and personality features of Japanese patients with MDD.
Methods
We studied 114 outpatients and inpatients with DSM-IV MDD in Gunma Hospital, a psychiatric hospital in Japan. Patients completed the validated Japanese version of T&P (J-T&P) and Quick Inventory Depression Symptomatology self-rated 16-item (QIDS-SR16). The total sample were compared with Gordon Parker's original sample.
Results
Of the total sample (n=114), the mean age was 45 years (SD=11) and 44.7% (n=51) were female. The mean QIDS-SR16 score was 10.4 (SD=5.5) (i.e., mild to moderate). Whereas, the mean age of original sample (n=52) was 41 years and 51.9% (n=27) were female with a mean score of 19.1(SD=9.8) (i.e., mild to moderate) on Beck Depression Inventory-II (BDI-II).
Proportion of those with specific subtype were as following; social avoidance 63.2% (n=72), self-criticism 47.4% (n=54), anxious worrying 39.5% (n=45), personal reserve 28.9% (n=33), irritability 22.8% (n=26), rejection sensitivity 21.1% (n=24), self-focus 12.3% (n=14) and perfectionism 3.5% (n=4), Regarding those with social avoidance temperament, patients in our sample had much higher scores than those in original sample (14.1(SD=4.2) vs 9.5(SD=5.5); $p< 0.001$). In contrast, perfectionism and irritability was lower in our sample than original sample (perfectionism: 13.0(SD=4.7) vs 19.3(SD=4.7); $p< 0.001$) (irritability: 10.3(SD=5.7) vs 11.7(SD=6.3); $p< 0.01$). There were no significant differences between the groups in anxious worrying, personal reserve, rejection sensitivity, self-criticism, and self-focus.
Conclusion
Our findings indicate that social avoidance is a distinctive feature of Japanese patients with MDD. Social avoidance is correlated with a sense of shame (Tangney, 1995). Shame is more common than guilt in collectivistic cultures of East-Asian countries, compared to western countries with individualistic cultures. In Japan, intense fear of making a mistake keeps people from expressing their own opinion in public. Further study is needed to clarify the association between social avoidance and MDD which maybe prevalent and intense in Japanese patients.

PROGNOSIS OF DEPRESSIVE DISORDERS IN THE GENERAL POPULATION IN THE 11-YEAR FOLLOW-

UP: RESULTS FROM THE FINNISH HEALTH 2011 SURVEY

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SUMMARY:
Prognosis of depressive disorders in the general population in an 11-year follow-up - results from the Finnish Health 2011 Survey

Background. Outcomes of depressive disorders vary from full recovery to a lifelong chronic course, and not enough is known about outcomes and their predictors at the population level. It is important to identify individuals at a greater risk of unfavorable outcomes to target scarce health care resources in their treatment.

Aims. To examine different outcomes of depressive disorders in a general population sample: recovery, persistence of disorders, sub-clinical symptoms, and death. Factors that may predict these outcomes, such as sociodemographic factors, social capital, childhood adversities, psychiatric comorbidity and disorder characteristics are assessed.

Methods. In a nationally representative sample of Finns aged 30 and over (BRIF8901, www.terveys2011.info), depressive, anxiety and alcohol use disorders were diagnosed with the Composite International Diagnostic Interview (M-CIDI) in 2000 (n=6005) and 2011 (n=4478). Mortality data were obtained from Statistics Finland. Information on somatic health, psychotic disorders, childhood adversities and social capital was also collected.

Results. Out of those diagnosed with MDD at baseline, 17.9% received a diagnosis of MDD in 2011, 10.2% of dysthymia, and altogether 38.5% some CIDI diagnosis. In the case of dysthymia, 16.5% were diagnosed with dysthymia and 14.9% with MDD, and altogether 47% received some CIDI diagnosis. Residual symptoms, measured with the Beck Depression Inventory, were frequently found in both baseline MDD and dysthymia cases.

Younger age (OR 0.25-0.35 for age groups 45+) and being unmarried, divorced or widowed (adjusted OR 2.7) were associated with permanence of depressive disorders. Higher BDI score at baseline also predicted non-recovery (adjusted OR 3.2-7.8). No association was observed for psychiatric or somatic comorbidity, childhood adversity, social capital, gender or level of education. The participation axis of social capital was a protective factor for death among those with baseline depressive disorder (OR 0.06-0.20).

Discussion. Full recovery, especially when taking into account residual symptoms, was rare in both depressive disorders. Few prognostic factors were found.

Conclusion. The course of depressive disorders is frequently chronic also in a population sample. Younger age and being unmarried are associated with a chronic course of depressive disorders. This should be taken into account in treatment settings.

USE OF WEB-BASED TOOL TO UNDERSTAND NEUROBIOLOGY OF MAJOR DEPRESSIVE DISORDER: FINDINGS FROM STANLEY NEUROPATHOLOGY CONSORTIUM INTEGRATIVE DATABASE

Lead Author: Shilpa Sachdeva, M.D.

SUMMARY:
Background: Rapid antidepressant effect of Ketamine has highlighted the role of impaired glutamate neurotransmission in Major Depressive Disorder (MDD). Neuroimaging studies have also found reduced resting state brain activity in prefrontal cortex of MDD patients with an

increase in activity in this brain region after resolution of depressive symptoms. Molecular changes in both glutamate and brain derived neurotrophic factor (BDNF) signaling may contribute to the frontal cortical deficits. Stanley Neuropathology Consortium Integrative Database (SNCID) (Kim S, Webster MJ. The Stanley Neuropathology Consortium Integrative Database: a Novel, Web-Based Tool for Exploring Neuropathological Markers in Psychiatric Disorders and the Biological Processes Associated with Abnormalities of Those Markers. Neuropsychopharmacology 2009 Oct 14. doi:10.1038/npp.2009.151) is an easy-to-use web-based tool which can be used to identify changes in glutamate-BDNF signaling in frontal cortex of subjects with MDD.
Methods: After registering for online access to SNCID, authors accessed the data mining tool of Neuropathology Consortium on September 22, 2014. An exploratory search was conducted using the drop down menu for all marker types in the frontal cortex brain region. Statistical analysis tool was then used for the following markers: BDNF and its receptor TrkB; GRIN1, GRIN2A, GRIN2B, GRIA1, and GRIA1; postsynaptic density protein (PSD95); and excitatory amino acid transporters SLC1A2 and SLC1A3. In the statistical analysis section, non-parametric tests were used to compare the levels of above mentioned marker types in frontal cortical regions of brains from depressed and control subjects.
Results: Data from 51 comparisons, most of them previously unpublished, were available for analyses. The name of investigator, the region of brain from which tissue was obtained, investigational method, sample sizes and p values were compiled in a table. Five analyses had p-values less than or equal to 0.05. Using quantitative polymerase chain reaction (RT-PCR), Hemby et al. found that expression of GRIA2 mRNA was increased in Brodmann Area 46 in depressed subjects as compared to controls. Weickert et al. found reduced expression of SLC1A2 mRNA in white matter of frontal cortex using in situ hybridization. Reduced levels of PSD95, GRIN1 and TrkB proteins in depressed subjects as compared to controls were reported by Deakin et al., Karayiorgou et al., and Toro et al. respectively. None of these comparisons were significant after adjusting for multiple comparisons using Bonferroni correction.
Conclusions: An exploratory analysis of the Stanley Neuropathology Consortium Integrative Database using a web-based tool suggests aberrant glutamate-BDNF neurotransmission. This report demonstrates the utility of this easily accessible database in exploration of the molecular basis of Major Depressive Disorder.

RELATION BETWEEN SEVERITY OF DEPRESSION WITH THYROID HORMONE STATUS

Lead Author: Tanjir R. Soron, M.B.B.S., M.P.H.
Co-Author(s): Dr. Chaman Afrooz Choudhury MPhil

SUMMARY:

Â Introduction: Depression is common among the patients having thyroid dysfunction.However how the thd thyroid hormones related to depression severity is not conclusive yet.

Objectives: To find out the relation between severitiy of depression and thyroid hormones.

Methods: This cross sectional study was conducted in the department of psychiatry of Bangabandhu Sheikh Mujib Medical University (BSMMU) and National Institute of Nuclear Medicine and Allied Sciences (NINMAS), Bangladesh. It was conducted from January 2013 to December 2013. The severity of depression of 100 newly diagnosed patients were measured using Structured Clinical Interview for Mental disorder and Hamilton Rating Scale for

Depression. Then their thyroid hormone (FT3, FT4, TSH) status was measured. Chi-square test, Pearson correlation test and regression analysis was done in 95% confidence interval using SPSS 16.

Result: We found 11% of patients had mild depressive disorder, 70% of them had moderate depression and 19% of patients had severe depressive disorder.Â To quantify their depression we used Hamilton Rating Scale, the score ranged from 13 to 31 with a mean of 19.78. The thyroid hormone status of the patients showed 87% of patients had a normal thyroid hormone status, 12% had subclinical hypothyroid and 1% patients had hypothyroidism. TSH and depression severity measured by SCID had statistically significant relation, however FT3 and FT4 did not reach the level of significance. Morever TSH and FT4 had statically significant relation with HAMD scoreÂ whereas FT3 was not related.Â TSH and HAMD score was positively correlated where as FT3 and FT4 were negatively correlated with HAMD.

Conclusion: This is was first study in Bangladesh that explored the relation between depression severity and staths. The findings of the study will inspire other researcher to work in large scale.

A PATIENT WITH COMORBID DEPRESSION AND IRRITABLE BOWEL SYNDROME: TREATMENT WITH MILNACIPRAN

Lead Author: Gulay Tegin, M.D.
Co-Author(s): Mehmet Fatih Ustundag M.D, Halil Ozcan M.D. , Atakan Yucel, M.D., Unsal AydÄ±noglu, M.D

SUMMARY:

Introduction: Irritable bowel syndrome (IBS) is a clinical situation diagnosed with abdominal pain existing and it is relief with defecation, change in the frequency of defecation, stool formation 3 times in a month that endures for at least 3 months and represented with at least two of the symptoms including chronic abdominal pain, diarrhea, constipation, bloating, feeling of incomplete defecation, difficulty in swallowing and gastro-esophageal reflux (1). Variant gastrointestinal physiology, genetic factors, psychological distress, some personality traits, negative early life experiences, is suggested as possible causes (3). Lubiprostone, linaclotide, serotonin receptor agonists and antagonists, some antidepressant agents, and cognitive behavioral therapy are used in symptomatic treatment (4-5). Here, we represent a patient diagnosed with comorbid irritable bowel syndrome and major depression and his successfully treatment with milnacipran 100 mg/day.
Case: A 30-year-old male patient admitted to gastroenterology clinic with complaining of diarrhea, bloating and going to the toilet many times with feeling of incomplete defecation. Routine laboratory tests and colonoscopy revealed no pathology and he was diagnosed with IBS. He had been taking different medications (trimebutine, simethicone, escitalopram, sertraline, fluoxetine, venlafaxine, duloxetine) in adequate period of time and dosages, and also dietary recommendations, but he did not see any benefit of these. For a while complaints of IBS increased and symptoms of loss of enjoyment of life, insomnia, loss of appetite, attention deficits, depressed mood were added. Hamilton depression rating scale score was 18, consistent with mild to moderate depression. Milnacipran was started in 50 mg/day and 1 week after dosage was increased to 100 mg/day. Four weeks later, the patient declared that symptoms of IBS and depression both diminished significantly. Hamilton depression rating scale score was 4. Currently, he is on milnacipran treatment with nearly full remission of both diseases.
Discussion: We report that milnacipran as a serotonin and noradrenaline reuptake inhibitor antidepressant agent may be a good choice for treatment of depression and functional somatic disorders.

Keywords: Milnacipran, irritable bowel syndrome, depression

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TEMPOROMANDIBULAR DISLOCATION ASSOCIATED WITH CONVERSION DISORDER: CASE REPORT

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SUMMARY:

Conversion Disorder is defined as a health condition in which a person has neurologic symptoms that cannot be explained by medical evaluation and associated with psychiatric conditions (1). Here we report a case of temporomandibular dislocation associated with conversion disorder.

A 31-year-old female patient admitted with symptoms of fainting, jaw pain and fluctuating mutism. She has been complaining of fainting at different time intervals sometimes accompanied by convulsions lasting for nearly 30 minutes for 5 years. By time jaw locking accompanied with mutism especially by 8 am to 5 pm added. She also had bruxism when she was sleeping. Priorly, she has been examined by an otolaryngologist and a neurologist. Temporomandibular dislocation has been detected. Neurological examination, brain magnetic resonance imaging and electroencephalography revealed no pathology. Her mental status examination was within normal limits except slightly depressed mood. She has been living in an extended family and having problems with her mother-in-law because of houseworks and that she had not give birth a children since she got married. Her jaw locking generally occurred after her husband went to the office and relieved with his coming home. She was diagnosed with conversion disorder. Sertraline from 50 to 100 mg/day and supportive therapy was applied. We continue to her follow-ups.

In this patient temporomandibular dislocation was thought as a result of jaw locking and bruxism. Fainting and mutism are the common symptoms of conversion disorder (2). Bruxism is also related with stressors and psychiatric comorbidities (3).

Keywords: Conversion disorder, temporomandibular dislocation

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PARENTAL BEHAVIOR INFLUENCES ON THE ONSET AND SEVERITY OF ANOREXIA NERVOSA AND BULIMIA NERVOSA

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Co-Author(s): Jung-Hyun Lee, M.D., Young-Chul Jung, M.D., Ph.D., Jun Young Park,

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SUMMARY:
Aim : To determine the influence of parental behaviors on the onset and severity of eating disorders, this study compared aspects of perceived parental styles, according to eating disorder subtypes and age at onset in Korean women with eating disorders.
Method : One hundred and sixty-seven patients with eating disorders (Anorexia Nervosa (AN), N=49; Bulimia Nervosa (BN), N=118) were recruited for this study. Perceived parent behaviors were assessed with Parental Behavior Inventory (PBI) self-rating scale. The study subjects also completed the Eating Disorder Inventory -2 (EDI-2) to assess eating disorder symptoms.
Results : In anorexia group, early onset group (< 16 years) reported lower paternal affection and higher paternal rational expression, lower maternal interference than group with age at onset over 16 years. The severity of eating disorder symptoms was negatively associated with mother affection and rational expression in two subtypes of eating disorder (AN and BN). On stepwise regression analysis, paternal affection and maternal over-protection were associated with age of onset only in AN group and maternal affection were associated with the severity of symptoms in both groups of eating disorder.
Conclusions : Considering the role of family function and perceived parental styles could help improve the management of eating disorders. These results emphasize the importance of fathers' role in the eating disorder on the age at onset, a relatively unexplored area of eating disorder research. Also, we investigated the importance of mothers' affection on the severity of symptoms. Further exploration of the way patients interpret these results and prospective study would be needed to validate these findings.

THE VIEWPOINTS OF TRANSGENDERS TOWARD GENDER REASSIGNMENT POLICY IN TAIWAN â€“ A QUALITATIVE STUDY

Lead Author: Chih-yun Hsu, M.D.
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SUMMARY:
Objective
Transgender denotes the broad spectrum of individuals who identify their gender different from the assigned one. The World Professional Association for Transgender Health (WPATH) issued the identity recognition statement in 2010, revealed the attitude that no person should have to undergo surgery or receive sterilization procedures as a condition of identity recognition (changing gender identity officially). The WPATH Board of Directors urges governments to eliminate the laws for identity recognition that require surgical procedures. However, policy of gender identity recognition is still under debate in Taiwan. According to the Ministry of the Interior, there are two requirements for identity recognition: two psychiatrists' certificates of gender dysphoria and surgical removal of external and internal genitalia. Several non-government organizations (NGOs) for transgender rights oppose against current policy due to its violation on human rights of fertility and physical integrity. In our study, therefore, we want to focus on transgenders' medical experiences and their viewpoints about identity recognition policy.

Methods
In-depth interviews were conducted to achieve an understanding of the subjective viewpoints of transgenders in Taiwan. Twenty individuals who are diagnosed as gender dyphoria with DSM-5 criteria were interviewed, including ten female-to-male (FTM) and ten male-to-female (MTF) subjects. The interview lasted approximately 120 minutes. The major

interview aspects included identity process, family relationship, experiences in psychiatric clinic, and perspective toward gender recognition policy. We used qualitative study software "ATLAS.ti" for coding and analysis of our interview scripts.

Results
Among twenty participants, nine have never met any other transgenders in their lives. Others have transgender friends via Internet, gender minority communities or school/occupational environment. Eight of them participated in NGOs for transgender rights. Eleven agree with removal of original genital organs for identity recognition, yet their attitude towards psychiatrist's assessment was equivocal. The majority of them still want to change their official gender no matter their psychiatrist approves it or not. And they strongly oppose to adopting their parents' opinions during the assessment, which is the cultural routine in Taiwan. All of them hope the National Health Insurance can pay for the sex reassignment surgery. The individuals participating in NGOs prefer replacing dichotomized gender system with the concept of gender spectrum rather than only changing their gender recognition officially.

Conclusion
Heterogenous opinions were noted in transgender community towards gender reassignment policy in Taiwan. These viewpoints offered broader perspectives to medical field and policy maker. Further communications and debates between medical practitioner, public health officials and transgender subjects are needed.

THE RELATIONSHIPS BETWEEN VASCULAR RISK, COGNITION AND OUTCOME IN LATE-LIFE PSYCHOTIC DEPRESSION

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Co-Author(s): Kathleen Bingham, M.D., Ellen M. Whyte, M.D., Barnett S. Meyers, M.D., Benoit H. Mulsant, M.D., Anthony J. Rothschild, M.D., Samprit Banerjee, Ph.D., Alastair J. Flint, M.B.

SUMMARY:
Introduction: There is a complex relationship between late-life depression (LLD), cerebrovascular disease (CVD) and cognition and there is debate in the literature as to the optimal cognitive predictors of LLD outcome. Executive dysfunction and processing speed (indicators of frontostriatal impairment) have both been found to be associated with LLD and CVD. However, there is mixed evidence directly linking vascular disease to the onset and outcome of LLD. The aim of this study was to determine whether vascular risk, executive function and/or processing speed are associated with treatment outcome in late-life psychotic depression. If both vascular risk and cognitive function are predictive of outcome, we wished to examine whether vascular risk mediates the association between cognition and outcome. Our hypotheses were as follows: (1) Worse baseline executive function and processing speed would each be independently associated with poorer treatment outcome. (2) Greater baseline vascular risk would be independently associated with poorer treatment outcome. (3) Vascular risk would mediate the association between executive function and/or processing speed and treatment outcome.

Methods: This study is a secondary data analysis of STOP-PD, a 4-site, 12-week RCT comparing olanzapine plus sertraline with olanzapine plus placebo in the acute treatment of psychotic depression. We analyzed data from the group of participants aged â‰¥ 60 (n=142). The independent variables were baseline vascular risk (defined using the Framingham Stroke Risk Score [FSRS]), baseline executive function (colour-word interference score on the Stroop) and baseline processing speed (each of the timed colour and word reading components

of the Stroop). Our primary outcome measure was change in depression severity across treatment groups, measured with the 17-item HAM-D score at each study visit. The data were analyzed with mixed-effects models examining the relation of each of the predictor variables with outcome. Each model included evidence based covariates known to affect depression outcome and/or cognitive performance.

Results: Baseline vascular risk was independently and significantly associated with change in HAM-D score ($F_{1,791}$ = 9.91, p = 0.0017). Neither executive function nor processing speed was a significant predictor of outcome. Because we did not find a relationship between cognitive measures and outcome, we were not able to test the mediator hypothesis.

Conclusion: Our results support the hypothesis that vascular disease is associated with poorer treatment outcome of LLD. Vascular risk has been found to be correlated with severity of white matter changes on brain MRI. Our findings confirm the utility of the FSRS as a simple clinical measure in predicting treatment response in LLD. We did not find that cognitive measures predicted treatment outcome in this group of older patients with psychotic depression: possible reasons for this finding will be discussed.

COGNITIVE REMEDIATION FOR OLDER PATIENTS WITH SCHIZOPHRENIA: A PILOT STUDY

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Co-Author(s): Sawsan M. Kalache, MD, Christopher Tsoutsoulas, BSc, Benoit H. Mulsant, MD, MSc, Christopher R. Bowie, PhD, Tarek K. Rajji, MD

SUMMARY:

Background: Cognitive deficits are among the strongest predictors of function in schizophrenia. No pharmacological interventions reliably improve these impairments. With age, additional age-related cognitive declines are observed. A number of studies have shown that Cognitive Remediation (CR) improves cognition in patients with schizophrenia. The efficacy and tolerability of CR in late-life schizophrenia (LLS) remains to be studied.

Methods: We adapted an established CR protocol over four cohorts of community-dwelling individuals with LLS to better target associated cognitive deficits. Computerized drill and practice exercises were used with an increased focus on bridging the cognitive activities to daily life. Adjunctive training through online at-home exercises optimized adherence, and we modified computer lab ergonomics to accommodate mobility needs. CR was provided in eight, 2-hour weekly therapist-guided didactic sessions that included strategic monitoring to improve metacognitive skills. Participants were assessed at baseline and end-of-study using the PANSS and a battery of cognitive tests.

Results: Twenty-two participants enrolled. Two participants dropped after one session and one participant dropped after two sessions. One participant was hospitalized for medical reasons after one session. Eighteen participants completed CR in four cohorts (mean age=69.8, SD=5.3, female=10). Baseline Global Cognition T-scores ranged from 3-43 (mean=27.7, SD=10); end-of-study T-scores ranged from 8-45 (mean=28.8, SD=9.7). Change in global cognition did not reach significance (paired $t_{(18)}$=-1.18, p=0.25, d=17). Clinical symptom severity did not change after CR. Mean time devoted to online exercise practice ranged from 39-231 min/week (mean=100, SD=49).

Conclusion: Our pilot study suggests that CR is well tolerated among older patients with LLS but cognitive changes were small. Increasing the dose and duration of the CR

course, for example, with more frequent sessions or longer course, will be explored to examine effects on cognition.

IDENTIFICATION OF BEHAVIORAL AND SLEEP PROBLEMS IN DEMENTIA PATIENTS ADMITTED TO MIHS FROM JAN 2013 TO JUNE 2014

Lead Author: Maryam H. Hazeghazam, M.D., Ph.D.
Co-Author(s): Clesius-Kit Gesmundo, M.D., Gilbert M. Ramos, M.A., and William S. James M.D.

SUMMARY:

Introduction: Millions of Americans suffer from symptoms of dementia, with Alzheimer's disease (AD) as a leading cause. The management of cognitive decline reported in dementia patients is often complicted with the occurance of behavioral problems and sleep disturbances. Development of behavioral problems related to sleeplessness has a devastating impact on both patients and their caregivers. There is no specific drug class identified to manage sleep disorder and behavioral symptoms in patients with dementia.

FDA approved medications such as cholinesterase inhibitors and NMDA receptor antagonists that are used to manage cognitive impairments in AD patients, are often associated with side effects that adversely impact sleep cycle resulting in worsening of the patient's behavior and increasing the stress level of their caregivers.

The aim of this study is to identify prevailing behaviroal and sleep problems in patients with dementia, and the corresponding pharmacological approaches at a major hospital serving the greater Phoenix metropolitan region. The findings of this investigation will help identify pharmacological drugs used by local physicians for the management of behavioral and sleep problems in dementia patients.

Method: Researchers conducted chart review of inpatients with a dementia-related diagnosis in their hospital EMR's Problem List field from Jan 2013 to June 2014. Data gathered included demographic and clinical variables, including admission date, ethnicity, discharged place, gender, behavioral problems (agitation, aggression, depression, psychosis, and confusion), sleep disturbances, and medications used to target above symptoms (antipsychotics, antidepressant, sedatives, mood stabilizers, and benzodiazepines).

Results: A total of 44 patient charts from psychiatric units (24 male, 20 female) were reviewed. Average age was 64 (32-91). Dementia of Alzheimer's type was diagnosed in four (9%), eighteen (41%) with cognitive disorder/dementia, eleven (25%) with vascular dementia, and two (4%) with HIV dementia. Twenty-six patients with psychosis (59%), seven with depression (16%), five with psychosis and depression (11%), and three (7%) with other behavioral symptoms were identified. Twenty three patients were treated with antipsychotics (52%), fourteen (32%) with mood stabilizers, and thirty (30%) with antidepressants. Twelve patients (27%) reported problems with insomnia of which all (100%) received sleep medications.

Discussion: Aggression, agitation and psychosis were among the most reported behavioral problems. Sleep disturbances were reported in 12 (27%) patients, of whom 100% were prescribed medications. Atypical antipsychotics, followed by mood stabilizer and antidepressants were the most frequently used medications.

Difficulties in initiating and maintaining sleep among dementia patients have an impact on their cognition and behavior. Management of sleep disturbances among this population appears to be essen

DRIVING AND WHITE MATTER HYPERINTENSITY: A CLINICAL RESEARCH CENTER FOR DEMENTIA OF SOUTH KOREA (CREDOS) STUDY

Lead Author: Mi Jang, M.D.

Co-Author(s): Sang Joon Son, M.D., Ki Jung Chang, M.D., Chang Hyung Hong, M.D., Ph.D.

SUMMARY:
Introduction: Motor, perceptual, and cognitive functions affect driving competence. White matter hyperintensity changes on brain MRI are associated structural brain changes along with cognitive and motor performance. However, the relationship between white matter hyperintensity and driving ability is not well known.

Objectives: The aim of this study was to investigate the association between white matter hyperintensity and driving ability.

Methods: Participants (n=1493) were drawn from a nationwide, multicenter, hospital-based, longitudinal cohort study. (A Clinical Research Center for Dementia of South Korea (CREDOS) Study) Each patient underwent interview for caregiver including driving capacity and brain magnetic resonance imaging which was coded by degree of white matter hyperintensity.

Results: Participants with greater white matter hyperintensity burden had a higher rate of driving cessation than those with lesser white matter hyperintensity burden. (OR 1.73, p<0.001)

Conclusions: The degree of white matter hyperintensity is associated with driving impairment.

BDNF PROMOTER METHYLATION AND GERIATRIC DEPRESSION IN KOREAN COMMUNITY ELDERS

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SUMMARY:
Background: Reduced brain-derived neurotrophic factor (BDNF) function has been suggested as a risk factor for late-life depression. BDNF secretion is influenced by epigenetic (DNA promoter methylation) and genetic (val66met polymorphism) profiles. We investigated the independent and interactive effects of BDNF methylation and val66met polymorphism on late-life depression.
Method: In total, 732 Korean community residents aged â‰¥65 years were evaluated, and 521 of them without depression at baseline were followed up 2 years later. Depression was determined using the Geriatric Mental State Schedule, and depression severity was evaluated with the Geriatric Depression Scale. Demographic and clinical covariates were obtained. The effects of BDNF methylation and polymorphism on the diagnosis of depression were investigated using a multivariate logistic regression model, and the relationships between BDNF methylation and depression severity were evaluated using partial correlation tests.
Results: Depression was present in 101 (13.8% of 732 participants) at baseline and in 86 (16.5% of 521 participants without depression at baseline) at 2 years later. Prevalent depression was significantly associated with sex, a higher number of chronic physical disorders, lower cognitive function, and more severe disability ($p < 0.05$), and these factors were therefore chosen as covariates for later adjustment analyses. The associations between BDNF promoter methylation percentages and depression status were examined using multivariate logistic regression analysis after adjustment for covariates. After applying Bonferroni correction, the prevalence and incidence of depression were independently associated with a higher methylation percentage at CpG site 9 and a higher average methylation percentage. Partial correlations of BDNF methylation percentages with the GDS scores are examined to investigate the association between BDNF methylation

status and depression severity. After applying Bonferroni correction, higher baseline GDS scores were significantly correlated with a higher methylation percentage at CpG site 9 and higher average methylation percentage after adjustment for covariates. Additionally, higher GDS scores at follow-up were significantly correlated with a higher average methylation percentage in the same adjusted model. There were no significant associations between BDNF promoter methylation percentages and BDNF val66met polymorphism. Moreover, there were no significant interactive effects of BDNF methylation percentages and genotype on the prevalence or incidence of depression in the multivariate logistic regression model.
Conclusions: Higher BDNF methylation was independently associated with prevalence and incidence of depression as well as severe depressive symptoms. No significant methylationâ€“genotype interactions were found. BDNF promoter methylation could be a proxy biomarker for depression late in life.

THE EFFECTS OF STRESSORS ON SUBJECTIVE WELL-BEING AMONG THE KOREAN ELDERLY

Lead Author: Seong Ju Kim, M.D.
Co-Author(s): Chang Hyung Hong, M.D., Ph.D., Do Hyung Kim, Ph.D., Sang Joon Son, M.D., Ph. D., Ki Jung Chang, M.D.

SUMMARY:

Objective
Among the OECD countries, the suicide rate of the Korean elderly is among the highest while the subjective well-being is among the lowest. This study aims to identify the self-reported stressors among the Korean elderly and examine their effects on subjective well-being measured by Concise Measure of Subjective Well-Being (COMOSWB).

Methods
We use a non-random sample on over 1,000 ethnic Koreans aged sixty and above from the Suwon Project. Self-reported stressors are categorized by the sources: family members, friends and neighbors, economic distress, physical illness, and loneliness. Also, they complete questionnaires from COMOSWB and report demographic characteristics, history of illness and medical drug use, Korean version of Mini Mental Status Examination (K-MMSE) and Korean version of Short Form Geriatric Depression Scale (SGDS-K). We use multinomial logistic regression to account for the discrete scale of COMOSWB.

Results
We find that stress from physical illness, family members, and solitude is strongly and negatively associated with subjective well-being. We also find that the association between self-reported economic distress and subjective well-being is negative, but statistically insignificant. These findings are robust to controlling for demographic characteristics, a history of illness and medication, a measure of neuro-cognitive function.

Conclusions
Our results suggest that the Korean elderly are less happy due to stresses from physical illness or family members rather than from economic distress or relationships outside the family.

COGNITIVE EFFECTS OF ECT AND OTHER BRAIN STIMULATION TECHNIQUES IN PATIENT WITH LATE-LIFE DEPRESSION? A SYSTEMATIC REVIEW

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, Angela Liu, M.D., Zafiris J. Daskalakis M.D., Ph.D., FRCPC, Tarek Rajii M.D., FRCPC

SUMMARY:
Introduction : Late-life depression (LLD) is a serious public health problem with estimated prevalence ranging from 1.8-25 percent in selected groups. LLD is known to negatively impact cognition both acutely and at follow up, even after remission of mood symptoms with antidepressant medications. Up to 50% conversion rate to dementia has been reported during long term follow up of patients with LLD. Electroconvulsive therapy (ECT), the most efficacious treatment for LLD, can be associated with detrimental effects on cognition. Some studies have demonstrated a pro-cognitive effect of non-convulsive electrical and magnetic brain stimulation interventions among patients with dementia.
Methods: We conducted a systematic review of peer-reviewed literature on the effect of ECT and other brain stimulation interventions on the nature and course of cognitive function in patients with LLD. Search included three databases (EMBASE, Ovid Medline, and PsycINFO) through November 2014 and included the references of retrieved publications. The search limited age to 65 and over, human, English language and peer-reviewed journals.
Results: 5104 publications were identified; 298 were reviewed in full and 36 met the eligibility criteria: 34 publications pertaining to ECT and 2 pertaining to repetitive transcranial magnetic stimulation (rTMS). The
majority of these publications report some transient post-ictal and inter-ictal confusion associated with ECT
but no long-term (i.e., 6 months or longer) deleterious effects on cognition. Instead, long-term cognitive
outcomes with ECT have been reported as either not changed or improved. rTMS studies reported no acute
changes in cognition.
Conclusions: Published literature on brain stimulation interventions in LLD is mainly limited to ECT. This literature suggests that deleterious effects of ECT on cognition in older adults are limited and transient. There is not enough evidence to characterize the long-term deleterious effects of ECT on cognition in LLD or the effects of other brain stimulation techniques on cognition in LLD.

CEREBROVASCULAR PATHOLOGY IN MCI IS ASSOCIATED WITH DECREASED AMYLOID-B SPECIES, BUT NOT WITH AMYLOID-B42/B40 RATIO OR [18] F-FLUTEMETOMOL UPTAKE

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SUMMARY:
Aggregation of amyloid-beta (AÎ²) is a pathophysiological hallmark of AlzheimerÂ´s disease (AD), and decreased cerebrospinal fluid (CSF) levels of AÎ²42 predict progression from Mild Cognitive Impairment (MCI) to AD. In addition to amyloid aggregation, cerebrovascular pathology, as indicated by White Matter Lesions (WML) visualized on CT or MRI, has been proposed to act as a mediator for developing AD and MCI. However, it is still unclear how cerebrovascular and amyloid pathologies interact and may cause cognitive decline and progression to dementia. In this study of healthy elderly, subjects with MCI and AD patients, we investigated associations between WML and AÎ² species biomarkers in CSF, specifically the AD associated AÎ²42 and the non-AD related AÎ²38 and AÎ²40. In addition, we examined the relationship between WML and AÎ² deposition measured with amyloid PET.

This study comprised 267 cognitively healthy elderly controls, 359 MCI subjects, and 20 AD subjects. All study participants

underwent standardized clinical evaluations including physical and neurological examinations, laboratory testing, cognitive testing, lumbar punctures and MRI scans. WML were assessed on FLAIR-images according to the Fazekas scale and the Age-Related White Matter Changes (ARWMC) scale; the total score was used in the subsequent analysis. CSF samples were analyzed for AÎ²42, AÎ²38, and AÎ²40. The AÎ² deposition was measured with 18F-flutemetamol PET in the MCI and control cohorts. Relevant neocortical depositions were combined into a global composite. Linear regression models were used in order to test associations between WML as independent variables and CSF biomarkers and composite PET scores as dependent variables. All analyses were adjusted for age, sex, and in the case of MCI and healthy controls, mediotemporal lobe atrophy.

In MCI subjects, total Fazekas and ARWMC scores were significantly associated with AÎ²42, AÎ²38, and AÎ²40 (all $p<0.004$), but not the AÎ²42/AÎ²40 ratio ($p>0.77$). In the healthy elderly, no significant associations were observed between WML measures and any of the CSF biomarkers or the AÎ²42/AÎ²40 ratio ($p>0.17$). In AD subjects, the Fazekas and ARWMC scores were significantly associated with AÎ²42 ($p<0.05$), but not AÎ²38, AÎ²40, or the AÎ²42/AÎ²40 ratio ($p>0.05$). The composite PET score was not significantly associated with any of the WML measures in healthy elderly or MCI subjects (all $p>0.083$).

We here report significant associations between more pronounced WML and lower levels of CSF AÎ²38, AÎ²40 and AÎ²42. These associations were most robust in MCI subjects, although weaker correlations in the same direction were observed in the smaller AD group. No associations between WML and CSF biomarkers were found in the healthy elderly. There were no significant associations between amyloid PET and WML in any of the groups. Our findings suggest that WML are associated with a general decrease in AÎ² production, rather than AD-specific aggregation of AÎ²42.

MASTERY MODERATES THE RELATIONSHIP BETWEEN ANTICIPATED STIGMA AND DEPRESSIVE SYMPTOMS AMONG OLDER ADULTS IN A PRIMARY CARE SETTING

Lead Author: Elmira Raeifar, M.A., M.Sc.
Co-Author(s): Ashley E. Halkett, M.Phil., Jo Anne Sirey, Ph.D.

SUMMARY:

Introduction: Depression is prevalent (WHO, 2012), often untreated (Byers, 2012) and associated with suicidal (Blazer, 2003; O'Connell, 2004) and non-suicidal (Gallo, 2013) mortality in older adults. Stigma has been shown to be a significant obstacle to seeking help (Givens, 2007); perceived stigma has been found to be a barrier to initiation and adherence to antidepressant drug therapy (Sirey, 2001). Lack of personal coping resources, such as mastery, is associated with barriers to treatment (Austin 2013). Mastery, defined as the extent to which a person feels that he or she has control over life and environment (Pearlin & Schooler, 1978), is associated with lower depressive symptoms in older adults (Bisschop et al., 2004; Chung et al., 2009; Jang et al., 2002). While there is evidence that mastery moderates the relationship between depressive symptoms and chronic diseases (Bisschop et al., 2004; Jang et al., 2002), few studies have examined the influence of mastery on the relation between depression and psychological barriers to treatment (Rueda, 2012).
Hypothesis: The purpose of this study is to examine whether mastery moderates the negative effect that stigma has on depressive symptoms among older adults seeking mental health treatment.
Methods: The sample consists of 92 older adults aged 60 years or older with MDD

who were newly recommended antidepressant treatment by their PCPs. The sample is part of a larger longitudinal study to examine the usefulness of the Treatment Initiation and Participation (TIP) program as an intervention to improve antidepressant adherence and depression outcomes. Research assessments were conducted with study participants at baseline, 6, 12 and 28 weeks later to evaluate adherence and depressive symptoms. Depression severity was assessed using Hamilton Depression Rating Scale. Mastery was assessed using the Pearlin & Schooler Mastery Scale. Anticipated stigma was assessed using the first item of the Anticipated Stigma Scale: "I worry that others will treat me differently if they know I am/have been depressed" rated on a 4-point scale.
Results: High anticipated stigma was found to be a significant predictor of depression among older adults with low mastery (p = .036), but not among those with high mastery (p = .848). After controlling for gender at baseline, mastery remained a significant predictor of depressive symptoms (p = .002). In addition, the interaction between mastery and stigma was significant at R2 = .341, p = .01. An increase in mastery over 28 weeks was significantly associated with greater decrease in depressive symptoms over time (B = .323, p = .022).
Conclusion: Among individuals with lower mastery, the relation between anticipated stigma and depressive symptoms is moderated by mastery level. For individuals with high levels of mastery, greater anticipated stigma is not related to greater distress. An increase in mastery could be a source of resilience as older adults face depression.

SELF-HARM: A STUDY TO FIND THE ASSOCIATION BETWEEN PERCEIVED HEALTH AND VARIOUS PREDICTOR AND OUTCOME VARIABLES FOR PERSONS IN THE SCHIZOPHRENIA A

Lead Author: Anupriya Razdan, M.B.B.S.

Co-Author(s): Carl I. Cohen, M.D

SUMMARY:

Objective & Rationale: Self â€“health is a widely used validated measurement that entails a subjective assessment that integrates biological, psychological, social, and functional aspects of a person. In older adults it has been shown to be an independent predictor of health evolution over time including morbidity, mortality, disability, and functional impairment. Despite growing concerns about the physical health of older adults with schizophrenia, there are little data on subjective measures of health in this population. Because it can be easily administered, self-health has the potential to serve as a screening tool as well as to assist in health decision-making and in tailoring individual services. The aim of this study will be to examine the utility of subjective health measures and their associated factors in a sample of older adults with schizophrenia.
Methods: The sample comprised 250 community-dwelling persons aged 55 and over with schizophrenia spectrum disorder who developed the disorder prior to age 45 (Mean age= 61 years, 51% male, 55% white) and a normal matched community comparison group (n=113). We employed a causal model of self-health and aging proposed by Ocampo (2010) to examine the association between perceived health and various predictor and outcome variables for persons in the schizophrenia and the community comparison groups.
Results: There were no significant differences between the schizophrenia and the community comparison group with respect to ratings of self: 64% (schizophrenia) and 67% (comparison) rated good/excellent health and 35% (schizophrenia) and 33% (comparison) rated fair/poor. Notably, persons with schizophrenia were significantly more likely to rate their health as better than 3 years ago (37% versus 15%). In zero-order correlation analysis, self health was

associated significantly in both groups with a variety of psychiatric symptoms (depression, anxiety), physical health, social supports, daily functioning, financial well-being, and community integration. When the significant variables were entered in concert into an ordinal logistic regression analysis, in both groups lower perceived self-health was associated significantly with depressive symptoms and the number of physical disorders. The parameters estimates were similar in both groups for depressive symptoms and it was somewhat higher in the community group for physical health. Financial strain was also associated significantly with lower perceived health in the schizophrenia group.
Conclusions: Self-health in older persons with schizophrenia was found to be associated with variables that were nearly identical to those of the community comparison group as well as those variables identified consistently in the literature on elderly adults. Perceptions about self â€“health seemed to be largely independent of schizophrenia, e.g., in multivariable analysis there were no significant associations between self-health and positive or negative symptoms o

DEEP TRANSCRANIAL MAGNETIC STIMULATION IN OBSESSIVE COMPULSIVE DISORDER (OCD) PATIENTS

Lead Author: Lior Carmi, M.Psy.
Co-Author(s): Uri Al Yagon, Ph. D., Reuven Dar, Ph. D., Joseph Zohar, M. D., Abraham Zangen, Ph. D.

SUMMARY:

Abstract: Characterized by compulsive rituals and Obsessive thoughts, OCD is a chronic and disabling disorder. Despite converging evidence pointing towards the involvement of dysfunctional cortico-striato-thalamo-cortical (CSTC) circuit in OCD, the neurophysiological pathology of OCD is still not well characterized. Indeed, 40%-60% of patients do not respond adequately to standard treatments.
Transcranial magnetic stimulation (TMS) is a noninvasive therapeutic technique, recently applied to treat and investigate OCD. However, lacking the ability to target the CSTC circuit directly, standard TMS treatment protocols for OCD showed diversified results. The use of special deep TMS (dTMS) coils allows direct stimulation of deeper neuronal pathways relative to those affected by standard TMS coils. Here we evaluated whether dTMS targeting the medial prefrontal and the anterior cingulate cortices may influence symptom severity.
Method: 40 OCD patients were treated with either dTMS or a sham coil for five weeks in a double-blind controlled study. The patients were divided into groups receiving either high (20Hz) or low (1Hz) stimulation frequencies, and were simultaneously administrated with symptom provocation. EEG measurements were taken at baseline and at the end of treatment.
Results: The active 20Hz dTMS group improved significantly in YBOCS score compared to the 1Hz and placebo groups (28% vs. 6% reduction), {t (93) = -2.29 (p=0.0243)}. Moreover, follow-up assessments revealed 3 months stability in improvements as measured by the YBOCS scores. EEG evoked responses measured over the anterior cingulate cortex correlated with clinical response.
Conclusions: High frequency dTMS treatment, targeting the medial prefrontal and the anterior cingulate cortices is a promising therapeutic intervention in OCD.

BDNF VAL66MET POLYMORPHISM AND PLASMA LEVELS IN CHINESE HAN POPULATION WITH OBSESSIVE-COMPULSIVE DISORDER AND GENERALIZED ANXIETY DISORDER

Lead Author: Yuan Wang, M.D.
Co-Author(s): Haiyin Zhang, M.D., Ph.D., Zhen Wang, M.D., Ph.D., Qing Fan, M.D., Ph.D., Zeping Xiao, M.D., Ph.D.

SUMMARY:

Background: Although the results of genetic association studies between brain-derived neurotrophic factor(BDNF) and obsessiveâ€“compulsive disorder(OCD) have been inconsistent. BDNF plasma levels in OCD have been found lower than those in healthy controls. However the heritable reason of the decreased BDNF levels was not well elucidated. OCD has not been categorized as anxiety disorders in DSM-â…¤, suggesting we should pay more attention on the difference between them. The aims of this study were to determine whether single nucleotide polymorphism Val66Met of BDNF was associated with OCD and generalized anxiety disorder (GAD), to examine BDNF plasma levels in OCD and GAD, and to explore whether Val66Met variation influences BDNF plasma levels.
Methods: We genotyped Val66Met variation in 149 OCD patients, 110 GAD patients and 99 normal controls. Within the same sample, BDNF plasma levels in 114 OCD patients, 104 GAD patients and 63 normal controls were examined.
Results: Val66Met variation was not associated with OCD or GAD. BDNF plasma levels in OCD and GAD patients were significant lower than those in normal controls. Val66Met variation had no influence on BDNF plasma levels. No difference was found between OCD and GAD. Results do not change no matter taking OCD and GAD as one group or separated two.
Limitations: The sample size was relatively small and the selected SNP quantity in genetic association study was too limited.
Conclusions: Our findings support the hypothesis that BDNF is involved in the pathophysiology of mental disorders, not only OCD but also GAD. The decrease of BDNF levels is not associated with Val66Met variation.

AMYGDALA RESPONSE PREDICTS CLINICAL SYMPTOM REDUCTION IN PATIENTS WITH BORDERLINE PERSONALITY DISORDER

Lead Author: Dirk Geurts, M.A., M.D.
Co-Author(s): Thom J. van den Heuvel, Ph.D., Roshan Cools, professor, Ph.D.

SUMMARY:
Background: Borderline personality disorder (BPD) is a prevalent, devastating and heterogenic psychiatric syndrome. Treatment success is modest for the various forms of psychotherapy, likely reflecting large variability across individuals. There are no substantial and clinically useful predictors of treatment success. Cognitive and neurobiological mechanisms might mitigate phenomenological heterogeneity and might provide us with relevant predictors of treatment success.
Aim: To assess the potential of cognitive and neurobiological factors for predicting treatment success in BPD. Specifically, we assessed whether symptom reduction over a 1-year period in patients who received dialectical behavioural group therapy could be predicted from fMRI BOLD signal in the amygdala during the performance of a task that measures the affective regulation of instrumental behaviour.
Method: 16 healthy controls and a naturalistic sample of 16 patients with BPD, awaiting dialectical behavioural group therapy performed a behavioural task within an fMRI environment. Interactions between affective and instrumental control were assessed by making use of a Pavlovian-to-instrumental transfer (PIT) paradigm. Subjects completed an instrumental learning stage, during which they learned by trial and error to approach or withdraw from instrumental stimuli to earn money. Subsequently subjects completed a Pavlovian learning stage, during which associations were acquired between three conditioned stimuli (CS) and appetitive, aversive or neutral (juice) outcomes. Finally subjects completed the critical PIT stage, during which they performed the instrumental approach/withdrawal task in the presence of the different Pavlovian CSs. In this last phase critical outcome measures were behavioural choices and BOLD-

response as a function of approach and withdrawal and CS valence. This PIT-related BOLD-response represents integration of affective and instrumental information on a neural level. 14 patients were assessed a year later for changes in symptom severity on the borderline personality severity index (BPDSI).
Results: Difference in BOLD signal in bilateral amygdala recorded before treatment was related to treatment success, i.e. the difference in BPDSI score at baseline assessment and assessment one year later: strong effects were found for PIT-related BOLD signal in the amygdala during the aversive CS compared to the neutral CS: Patients showing less aversive PIT-related signal before treatment, showed greater clinical improvement after treatment (Spearman's rho(14): -.759, p=.003).
Conclusion: This study shows for the first time that BOLD-activity in the amygdala can predict clinical symptom reduction in patients with borderline personality disorder over a 1 year treatment period. This finding might be a stepping-stone for future neurobiological studies investigating indication of specific psychotherapeutic regimes for patients with borderline personality disorder.

DIAGNOSTIC STABILITY AND MORTALITY RATE IN PATIENTS WITH BORDERLINE PERSONALITY DISORDER

Lead Author: Jesper N. Kjaer
Co-Author(s): Robert Biskin, M.D., Claus Vestergaard, M.Sc., Povl Munk-JÃ¸rgensen, M.D., DMSc

SUMMARY:

Introduction: Patients with borderline personality disorder (BPD) have complicated clinical trajectories. There is a high degree of psychiatric comorbidity; both with other personality disorders, as well as mood disorders, anxiety disorders and substance use disorders. Further, this group of patients are known for high rates of suicide.

Objectives: The Danish Psychiatric Central Research Register and The Danish Register for Causes of Death are nationwide registers that make it possible to follow psychiatric patients over long periods. These registers can be used to examine diagnostic stability and mortality.

Aims: To determine the diagnostic stability and standardized mortality ratio in patients with borderline personality disorder.

Methods: First-ever diagnoses of borderline personality disorder between 1995 and 2012 were identified in the nationwide registers. Information of their first-ever and latest registered diagnosis were grouped in accordance with ICD-10 diagnoses. Age- and gender standardized mortality ratio were calculated comparing to the general Danish population.

Results: A total of 11,450 patients with a borderline personality disorder diagnosis were identified in the period, of which 87.1 % female.
37.0 % of men and 31.9 % of women had BPD as their first-ever diagnosis. 41.4 % of men and 52.5 % of women had BPD as their latest registered diagnosis.
Further we found that 85.5 % have had one or more main diagnoses additional to the BPD diagnosis. Most notable are stress-related disorders, depressive disorders, psychotic disorders and emotional unstable personality disorder.
The standardized mortality ratio of the whole period is 4.8 (95%-CI: 4.1-5.4). In the most recent 5 years it is stabilized around 3.5 (95%-CI: 2.7-4.2).

Conclusion:
The diagnosis of borderline personality disorder is instable over time. Among patients who have received a diagnosis of borderline personality disorder only about 35 percent of them had it as their first-ever diagnosis. Approximately 50 percent had it as their latest registered diagnosis and most received other psychiatric diagnoses.

In addition there is a roughly four times higher mortality rate in the patients with borderline personality disorder. These results give information about the complicated clinical trajectories and the need of better prevention of early death in this patient group.

LIPID PROFILE, BECK-D, BECK-A AND SUAS SCALES CORRELATIONS IN FEMALE BORDERLINE PERSONALITY DISORDER CROATIAN PATIENTS

Lead Author: Antonia Puljic, M.D., Ph.D.
Co-Author(s): Ante Silic, M.D., Ph.D, Drazenka Ostojic, M.D., Ph.D, Dalibor Karlovic, M.D., Ph.D., Darko Marcinko, M.D.,Ph.D

SUMMARY:

ABSTRACT:

INTRODUCTION

This study was designed to investigate correlations between lipid profile, BECK-D, BECK-A and SUAS scales as possible predictors of suicidal behavior in Borderline Personality Disorder in sample of female Croatian patients.

HYPOTHESIS

We hypothesized that lipid profile values and results on specific items of scales would be associated with suicidal behavior and previous suicide attempts.

METHODS

We included 55 female Borderline Personality Disorder inpatients diagnosed according to DSM-IV TR criteria. We examined the relationship between DSM-IV TR criteria met, lipid profile results, results on BECK-A and D and SUAS-S and the presence or absence of a previous suicide attempt. Normality of distribution of results by each item in SUAS was checked through Kolmogorov Smirnov's test. To establish difference in mean values between groups according to the presence or absence of a previous suicide attempt we used Mann-Whitney's test.

RESULTS

When we compared results of specific scales between suicidal and non-suicidal patients, we found no statistical significance in total score BECK-D (p=0,066) and BECK-A (p=0,191).

There is a trend towards statistical significance for higher score on BECK-D in suicidal patients.

We found statistically significant difference in suicidal patients on SUAS scale when compared to non-suicidal ones (p=0.025).

Serum total cholesterol was significantly higher in the control subjects than in patients with a personality disorder with a history of suicide attempt is listed . The same difference was observed in patients without suicidal behavior compared to the control subjects

CONCLUSION

In our sample Beck Depression Inventory is not a good predictor of suicidal behavior of female Borderline Personality Disorder patients. On the other hand SUAS scale is a good tool for evaluation of suicidality in our sample.

Lipid profile is related to suicidality.....

DISCUSSION

Borderline Personality Disorder is often complicated with suicidal behavior. We have important role in preventing such behavior by understanding risk factors and by assessing the level of risk. This relatively simple assessment tool can find use in every day clinical practice. We need further research and larger sample to clarify our results.

RISK FACTORS FOR NON-COMPLETION OF EVIDENCE-BASED THERAPY FOR COMBAT-RELATED PTSD

Lead Author: Michael L. Jacobs, M.D.
Co-Author(s): Krystal Kleinberg, M.D., Gary Kutcher, Ph.D., Pamela Slone-Fama, Ph.D., Camille Gonzalez, Psy.D., Michael Sanfilipo, M.D., Daniella David, M.D.

SUMMARY:
Background: It is estimated that one third of returning soldiers from Iraq and Afghanistan are suffering from PTSD, depression, and/or traumatic brain injury, and are at risk for functional impairment, chronic symptomatology, and suicide. Recent research has shown that evidence-based therapeutic interventions (EBTs), including Prolonged Exposure (PE) and Cognitive Processing Therapy (CPT) are effective. Unfortunately, many veterans who start trauma-focused EBTs drop out of treatment.

Objective: To identify potential demographic, psychosocial, and psychiatric factors that may affect veterans' ability and/or willingness to complete EBTs, so that early targeted intervention can be provided.

Methods: This IRB-approved study is being conducted in the PTSD Outpatient Clinic (PCT) at the Miami VAMC. All new patients accepted into PCT are offered an EBT during orientation. We are currently identifying all patients who started EBTs in the last 3 years and conducting medical record reviews of the above mentioned variables.

Results: Preliminary data analysis of this ongoing study reveals that EBT non-completers are significantly more likely to be younger in age, female, and have a trend for greater severity of PTSD at baseline compared to EBT completers.

Conclusions: Early interventions targeted at engaging younger and female veterans and those with high baseline PCL scores in treatment may be needed prior to enrolling PTSD veterans into EBTs.

DOXAZOSIN XL REDUCES POST-TRAUMATIC STRESS DISORDER (PTSD) CHECKLIST-MILITARY-SCORED (PCL-M) RATINGS IN VETERANS WITH MILITARY RELATED PTSD

Lead Author: Christopher Rodgman, M.D.
Co-Author(s): Christopher Verrico, Ph.D., Manuela Holst, Ph.D., Francisco Franco, M.D., Colin Haile, M.D., Ph.D., Daisy Thompson-Lake, Richard De La Garza, II, Ph.D

SUMMARY:
Post-traumatic stress disorder (PTSD) is common among veterans returning from Iraq and Afghanistan. Although psychotherapy can be effective for some veterans, many require adjunctive medication treatment. Among those medications, serotonin and norepinephrine reuptake inhibitors (SSRI, SNRI) are the first line agents, but have their fair share of side effects, including weight gain and sexual dysfunction, which causes lack of compliance with treatment. Recently, prazosin, an Î±1 noradrenergic antagonist, has shown to be effective in the treatment of nightmares, but has been limited in its use by its short half-life (about two hours) and the need for a relatively large dose. Doxazosin XL is in a similar class of medications, but is more advantageous as it has a half-life of approximately 24 hours and has proven to be previously effective in the in our lab to blunt the subjective effects of cocaine and methamphetamine. To determine if doxazosin xl was superior to placebo in reducing PCL-M scores and other anxiety measures, we arranged for a double-blind, within subjects trial at the Michael E. DeBakey Veterans Affairs Medical Center. Participants were screened (N=8) using the Clinician Administered PTSD Scale (CAPS) and M.I.N.I. International Neuropsychiatric Interview. They were then exposed to a 10 minute interactive Virtual Iraq demonstration during which Subjective Units of Distress were obtained and vitals were monitored. Following this, participants were asked to fill out the Beck Anxiety Index (BAI), Beck Depression Inventory II (BAI II), Pittsburgh Sleep Quality Index (PSQI), and Post-traumatic stress disorder (PTSD) checklist-military-scored

(PCL-M). If the participant met criteria, they would be admitted, randomly selected to either doxazosin xl or placebo, scheduled and brought back to the outpatient clinic area of the medical center, and on day 1, the participant would receive 4 mg doxazosin xl vs placebo and monitored for 30 minutes to ensure no first dose hypotensive event. Then, if their schedules allowed for it, the participants were asked to return upwards of once every four days to fill out the data batteries (PCL-M, PSQI, BAI, BDI-II) and obtain vitals, as the dosage of doxazosin xl was to be raised every four days until it reached 16 mg. This was done in order to slowly raise the dose to prevent any hypotensive episodes on behalf of the participant. On day 16, the participant returned and was re-exposed to the Virtual Iraq and SUDS, the CAPS was repeated, and participants were asked to fill out the PCL-M, PSQI, BAI, and BDI-II. After a two week washout period, the procedure was repeated with the alternative agent (doxazosin xl vs placebo). On resulting t-test of PCL-M, the Normality Test (Shapiro-Wilk) passed ($p = 0.514$), Equal Variance Test passed ($p = 0.773$). $t = 1.305$ with 14 degrees of freedom ($p = 0.213$) with a power of 0.116. This demonstrates a clear trend indicating doxazosin xl lowered PCL-M scores

INTERPLAY BETWEEN SPIRITUALITY AND RELIGIOSITY ON THE PHYSICAL AND MENTAL WELL-BEING OF CANCER SURVIVORS POST-TREATMENT

Lead Author: Anthony J Cannon, M.D.
Co-Author(s): Jesus Garcia, Fausto R. Loberiza Jr., M.D., M.S.

SUMMARY:

Objectives: A diagnosis of cancer has longstanding, and vast implications for patients beyond physical illness. Cancer patients and survivors often experience hopelessness, depression, panic, and anxiety in the context of an uncertain future, which in turn negatively impact quality of life. In this prospective, observational, cohort study, the interplay between spirituality and religiosity as it affects the physical and mental quality of life (pQOL, mQOL) of cancer survivors is explored.

Methods: This study included data from CANCERCARE, an observational, prospective cohort study that included adults â‰¥19 years who received treatment for various malignancies from March 2006 and July 2008. Patients' QOL was obtained at baseline, 6, and 12 months from the start of the study, and was measured the Short Form-12 Health Survey (SF-12). Spirituality was assessed using the Functional Assessment of Cancer Therapy Spirituality scale (FACT-SP). Religiosity was assessed using targeted questions regarding religious belief, and religious practice/denomination. Patient cohorts were defined according to spirituality/religiosity levels: 1) low spirituality â€“ low religiosity (LSLR), 2) low spirituality â€“ high religiosity (LSHR), 3) high spirituality â€“ low religiosity (HSLR), and 4) high spirituality â€“ high religiosity (HSHR). Repeated measures (on time period only) mixed models regression was employed to compare differences among the four groups, LSLR-HSHR, LSLR-HSLR, LSHR-HSHR, LSLR-LSHR, and HSLR-HSHR.

Results: Of the 551 eligible: 248 (45%) had HSHR, 196 (36%) had LSHR, 75 (14%) had LSLR, and 32 (6%) had HSLR. The pQOL of LSLR were significantly lower than those with HSHR ($p = 0.02$). The difference in pQOL between LS and HS were observed among those who have HR ($p < 0.0001$). The pQOL of individuals with LS or HS was not different among those who have LR. The mQOL of patients with LSLR are significantly lower than those with HSHR ($p < 0.0001$). The mQOL of those with HS is significantly higher than those with LS in both the cohorts with LR ($p < 0.0001$) or HR ($p < 0.0001$). pQOL decreased while mQOL

increased over time regardless of level of spirituality and religiosity.

Conclusions: Spirituality is important in the improvement of pQOL and mQOL of cancer survivors, while religiosity may have some impact on pQOL. Preserving QOL is an important component of cancer treatment/survivorship, and our study lends support to including a brief spirituality/religiosity history during medical encounters with cancer survivors to better understand the role of spirituality/religiosity for each patient. Psychiatrists charged with helping render recommendations to improve QOL for cancer survivors now have some empirical assurance that interventions aimed at improving spirituality can be an effective means to improving both physical and mental QOL for cancer patients.

A META-ANALYSIS OF PLACEBO-CONTROLLED TRIALS OF OMEGA-3 FATTY ACID AUGMENTATION IN SCHIZOPHRENIA: POSSIBLE STAGE-SPECIFIC EFFECTS

Lead Author: Alexander T. Chen, B.A.
Co-Author(s): John T. Chibnall, Ph.D., Henry A. Nasrallah, M.D.

SUMMARY:
Background: Omega-3 supplements have shown promise in clinical trials as an adjunctive treatment for schizophrenia. However, clinical efficacy across studies has been inconsistent. We conducted a meta-analytic assessment of the data and hypothesized that omega-3 fatty acid augmentation may have differential efficacy at various stages of schizophrenia.

Methods: An online search was conducted using PubMed for placebo-controlled, randomized, double-blind, clinical trials (RCTs) using the terms "omega-3," "EPA," "eicosapentaenoic acid," "PUFA," "polyunsaturated fatty acid," "schizophrenia," "prodrome", "schizophreniform," and "schizoaffective". A meta-analysis was conducted on applicable trials.

Results: 11 trials met criteria for inclusion. Of these, six included the Positive and Negative Syndrome Scale (PANSS) as an outcome measure for patients in the chronic stage of schizophrenia (N=319). A meta-analysis of these six studies indicated non-significant effects for Omega-3 on Total PANSS scores, where weighted d=.18 and weighted d=.11 when corrected for unreliability and range restriction. In the remaining studies, Omega-3 had an adverse effect regarding prevention of recurrence of symptoms after discontinuation of antipsychotic therapy (d=-0.58, N=33) and prevention of symptom worsening in acute exacerbation (d=-0.29, N=57). However, Omega-3 decreased non-psychotic symptoms, decreased required antipsychotic medication dosage (d=.40), and improved early (6 week), but not late (12 week), treatment response rates in first episode schizophrenia (N=69). It was also significant in reducing both the conversion rate and psychotic symptom severity in prodromal patients at very high risk for psychosis (d=0.7, N=81).

Conclusion: The data in this study suggests a differential benefit of omega-3 at various stages of schizophrenia, with higher efficacy in prodromal and first-episode patients as adjunct therapy to antipsychotic medications, while its efficacy for chronic schizophrenia appears tenuous. In fact, it may worsen acute exacerbations of schizophrenia. The neurobiological and therapeutic implications of these findings are discussed.

LANGUAGE ANALYSIS OF SCHIZOPHRENIA AND FAMILY ESSAYS REVEALS POTENTIAL SCHIZOTYPY MARKERS

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

SUMMARY:

Background:
Research on language and schizophrenia finds a broad array of differences and deficits. Recently work considers the symptoms and deficits in schizophrenia on a continuum, from health to illness. Family members may represent an intermediate phenotype (termed schizotypy) on this continuum, with attenuated symptoms of schizophrenia. Quantifying markers of this continuum may facilitate earlier detection and intervention.

Aims/Hypotheses:
To test for language markers of schizophrenia, we examined word use in patients, their unaffected relatives and a control set of essays (which we assume is less enriched with psychosis or its precursors). Using unbiased statistical models, we determined whether word use patterns supported the continuum model.
We predicted word use of unaffected family members would be more similar to their patient counterparts than controls.

Methods:
We collected 520 essays: 77 schizophrenia, 25 family members and 418 college student essays as controls. We processed essays using Linguistic Inquiry Word Count (LIWC) 2007 and we used SPSS to conduct a principal components analysis to determine primary components for cluster analysis using mclust in R.

Results:
Fig 1: The principle components analysis revealed 5 main components within the language items database. (KMO .530, Barlett's p=.000, Eigen values > 2.0).

Fig 2: Components 1 and 2 separate the controls from schizophrenia and family members. Component 1 (high in schizophrenia and family) is elevated in sadness, discrepancy, pronouns/proper nouns, verbs, and reduced in health, articles, and prepositions. Component 2 (high in controls) has more talk of anger and death, and less present tense and talk of work.

Fig 3: Our cluster analysis objectively identified two clusters in the corpus. Schizophrenia and schizophrenia family members tended to belong to cluster 1: 100% and 97%, respectively; controls were mostly in cluster 2: 93%.

Discussion:
Study results show that schizophrenia and schizophrenia family members cluster together in linguistic patterns, and separately from controls.
Principle components analysis shows component 1 most strongly separating schizophrenia and family member groups (high-scoring) from controls (low-scoring). Increased talk of discrepancy and sadness may suggest ongoing themes in schizophrenia and schizotypy with regard to delusions/odd beliefs, which can be isolating. Increased use of pronouns/proper nouns may relate to theory of mind associated changes in assumption of common ground in schizophrenia. People who share experience can guess at pronoun referents i.e. who "she" or "what" is. People on the schizophrenia continuum may then use more pronouns.
Our results support the existence of a schizophrenia-schizotypy continuum that might be observed through the study of language. This may ultimately provide opportunities for early detection and treatment and language may represent a non-invasive tool.

SEDENTARY BEHAVIOUR AMONG INDIVIDUALS WITH SCHIZOPHRENIA: A SYSTEMATIC REVIEW

Lead Author: Markus J. Duncan, B.Sc., M.Sc.
Co-Author(s): Markus J. Duncan, M.Sc., Guy Faulkner, Ph.D.

SUMMARY:

Introduction

Rates of obesity, diabetes, and cardiovascular disease are higher among individuals with schizophrenia than the general population. Recently, sedentary behaviour â€“ sitting or reclining with energy expenditure <1.5 metabolic equivalents â€“ has been identified as a potential independent risk factor for poor physical health and mortality in the general population. Reducing time spent sedentary may therefore be a realistic and low cost method of reducing physical health risk among individuals with schizophrenia who do not engage in regular physical activity. However, sedentary behaviour patterns are currently not well characterized in the schizophrenia population, and sedentary lifestyle is often used synonymously in the literature with physical inactivity, despite being conceptually distinct behaviours. Therefore, the purpose of the review was to 1) identify all studies that have measured the amount of time people with schizophrenia spend sedentary, 2) summarize the measurement methods used; and 3) examine health correlates of sedentary behaviour.

Methods

A systematic search process identified potentially relevant studies through Medline, Embase, and PsycINFO databases up to October 2014. Articles were included if participants had a diagnosis of schizophrenia or schizophrenia-like illness, the amount of time/proportion of the day spent sedentary was assessed, and papers were published in English. The references of potentially relevant studies were screened for additional publications.

Results

Ultimately, 172 abstracts were screened, with 64 citations identified as potentially relevant. Seven studies met criteria for inclusion. Of these, four studies used accelerometry to assess sedentary behaviour. The remaining three used self-reported time spent sitting throughout the day. Reported time in sedentary behaviour ranged from 358-1288 minutes/day. Three of four studies found small to medium (rs=.25-.47) relationships between sedentary behaviour and body mass index. One study also found greater rates of metabolic syndrome, larger waist circumference, and higher fasting glucose concentration associated with greater time spent sedentary. Relationships with mental health factors were inconsistent.

Discussion

Measurement and data analysis strategies were heterogeneous and may partially explain the variability reported in time spent sedentary. These studies provide initial evidence that greater sedentary time is associated with a cluster of cardiometabolic risk factors, and thus may be a novel target for reducing morbidity and mortality among people with schizophrenia. However, several methodological limitations, especially among accelerometry studies, indicate a need for future research examining whether sedentary behaviour (including type, number and duration of bouts during a day) can be reduced in this population and whether these reductions lead to improvements in physical and mental health independent of levels of physical activity.

BIOMARKERS IN PATIENTS WITH PSYCHOTIC SPECTRUM DISORDERS: A CASE-CONTROL STUDY

Lead Author: Sarah Elmi, M.D.
Co-Author(s): Ali Abbas Rashid M.D., Geetanjali Sahu M.D., Kishor Malavade M.D., Theresa Jacob Ph.D., MPH.

SUMMARY:

Introduction: The diagnosis and classification of schizophrenia/psychotic spectrum disorders are solely based on the physicians experience in interpretation of the clinical symptoms. While recent studies have implicated neurotrophic factors that can be detected in peripheral blood as key players in the biology of memory, learning, emotions, and the reward pathways, no laboratory test exists that furnishes a definitive diagnosis of psychosis. Our long-

term goal for this study is to determine molecular profiles and identify biomarkers for psychotic spectrum disorders. Tissue plasminogen activator (tPA), a critical regulatory molecule in neurochemistry, is implicated in important functions such as synaptic plasticity, long-term potentiation and neurogenesis. tPA is involved in BDNF activation and meditates the neuronal protection from excitotoxin induced cell death and restores neurogenesis. Decreased levels of tPA or elevated levels of its main inhibitor, plasminogen activator inhibitor 1 (PAI-1), have been described in patients with major depression and schizophrenia. Homocysteine (HCY) a partial antagonist of the glutamate site of the NMDA receptor and has an important role in neural circuitry. Anti-phospholipid antibody (aPL), is known to interact with NMDA receptors in the brain which is believed to play a role in neuropsychiatric manifestations of Systemic Lupus Erythematous. Objective: To determine if plasma levels of tPA, PAI-1, HCY and aPL have a predictive value as biomarkers for psychosis.

Methods: In this prospective case-control study, psychiatric inpatients (n=250) with psychotic spectrum disorders who are between the ages of 18 and 65 years, not having autoimmune disease or psychosis due to medical causes, will be enrolled after obtaining IRB-approved informed consent. The control group subjects would be healthy volunteers matched for age and gender with the study group. Baseline demographics and relevant clinical data will be recorded. Fasting blood samples will be collected and analyzed for levels of tPA, PAI-1 antigen, aPL using ELISA techniques. HCY levels will be measured using HPLC. CGI (Clinical Global Impression) and Brief Psychiatric Rating (BPRS) scales will be administered to assess the severity of psychotic disorder.

Results: We expect that our data will demonstrate significant differences in plasma levels of tPA activity and PAI-1 antigen between patients and controls. It is envisioned that there will be an association between symptom severity and level of these biomarkers in psychotic spectrum patients. Currently the IRB-approval process is underway and we have yet to recruit patients.

Conclusion: Identifying biomarkers for psychosis will open up new grounds for novel diagnostic, prognostic and treatment modalities for schizophrenia which is one the costliest diseases in the US and around the world.

UNCONJUGATED BILIRUBIN IN SCHIZOPHRENIA, SCHIZOAFFECTIVE AND BIPOLAR DISORDERS: A RETROSPECTIVE OBSERVATIONAL AND CONTROLLED STUDY

Lead Author: JoÃ£o Gama Marques, M.D.
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SUMMARY:
High Unconjugated Bilirubin (UCB) levels have been found in psychiatric populations when compared with general population. These higher UCB levels have been already correlated with acute psychotic states, with both positive and negative symptoms and also with a poorer outcome in patients with schizophrenia. It seems that UCB may have some neurotoxic effect on brain development and may play a role in brain tissue connectivity changes found in patients with schizophrenia.
In this observational transversal study we evaluated a sample composed of four subgroups including 50 schizophrenic, 69 schizoaffective and 85 bipolar patients versus 55 healthy controls, comparing the UCB mean levels and searching for a possible correlation with duration of acute admission in the psychiatric ward.
We found a statistically significant difference between UCB mean levels of bipolar (0,29mg/dL) versus both

schizoaffective (0,36 mg/dL, pâ‰¤0,01), and schizophrenic patients (0,39 mg/dL, pâ‰¤0,0001). We also found statistically significant difference between mean duration of admission of schizophrenic patients (31 days) versus both schizoaffective (22 days, pâ‰¤0,05), and bipolar patients (19 days, pâ‰¤0,001).
Our results suggest that UCB may contribute an important for the complex physiopathology of psychotic conditions, especially in the schizophrenia spectrum. In future studies we will try to find correlation between these findings and other psychopathological, neuropsychological and psychosocial variables.

THE INFLUENCE OF COGNITION ON IMPAIRED INSIGHT INTO ILLNESS IN SCHIZOPHRENIA ACROSS THE ADULT LIFESPAN

Lead Author: Philip Gerretsen, M.D., M.S.W., Ph.D.
Co-Author(s): Aristotle N. Voineskos, Mahesh Menon, Ariel Graff-Guerrero, Bruce G. Pollock, David C. Mamo, Benoit H. Mulsant, Tarek K. Rajji

SUMMARY:
Objectives: Impaired insight into illness is common in schizophrenia and negatively influences medication adherence and treatment outcomes. Little is known about the trajectory of insight deficits across the lifespan in patients with schizophrenia. Insight impairment is associated with illness severity, and deficits in premorbid intellectual function (i.e. IQ), executive function, and memory. The available literature suggests the course of insight impairment follows a U-shaped curve, where insight impairment is severe during the first episode of psychosis, modestly improves over mid-life, and declines again in late-life. In a previous study focusing on patients aged 60 years or above, we found that illness severity and premorbid intellectual function, but not other clinical or cognitive factors accounted for variance in insight impairment. Using one large sample of participants with schizophrenia assessed at one site, we aimed to test whether similar relationships are observed across the lifespan.

Methods: We assessed insight into illness using the Positive and Negative Syndrome Scale (PANSS) item G12 and explored its relationship to illness severity (PANSS Total, excluding item G12), premorbid intellectual function (Wechsler Test of Adult Reading, WTAR) and cognition in 171 participants with schizophrenia aged 18 to 79 (n=51 for 18-39 years; n=38 for 40-59 years; and n=82 for 60 or above). To accomplish this, bivariate Pearson correlations and a regression analysis were performed using PASW software (Released 2009. PASW Statistics for Windows, Version 18.0. Chicago: SPSS Inc.).

Results: Across the whole sample, impaired insight (PANSS item G12) was associated with age ($r=0.21$, $p=0.005$), PANSS Total ($r=0.44$, $p<0.001$) and subscale scores ($r=0.28$-0.45, $p<0.001$), premorbid intellectual function (WTAR; $r=-0.35$, $p<0.001$), education ($r=-0.26$, $p<0.001$), global cognition (MMSE; $r=-0.31$, $p<0.001$), information processing speed (Repeatable Battery for the Assessment of Neuropsychological Status, RBANS digit-symbol coding; $r=-0.29$, $p<0.001$), executive function (Trail Making Test - B, TMT-B; $r=0.34$, $p<0.001$), and working memory (Letter Number Span, LNS; $r=-0.32$, $p<0.001$). However, only PANSS Total ($B=5.88$, $p<0.001$) and WTAR scores ($B=-2.60$, $p=0.010$) explained a proportion of the variance of insight impairment.

Conclusions: Our study demonstrates that across the adult lifespan, impaired insight is mostly explained by illness severity and premorbid intellectual function, and not by other cognitive functions. This is consistent with our previous findings in late-life.

INSIGHT IN INPATIENTS WITH SCHIZOPHRENIA: RELATIONSHIP TO SYMPTOMS AND NEUROPSYCHOLOGICAL FUNCTIONING

Lead Author: Hongbo He, M.D., Ph.D.
Co-Author(s): Yanling Zhou M.D., Yuping Ning M.D, Ph.D., Somaia Mohamed Ph.D, Robert Rosenheck M.D.,

SUMMARY:
Objective: Lack of insight into illness has long been recognized as a central characteristic of schizophrenia. Although recent theories have emphasized neurocognitive dysfunction as a central impairment in schizophrenia it remains unclear whether the lack of insight in schizophrenia is more strongly associated with measures of symptom severity or neuropsychological dysfunction.
Methods: Seventy-four consecutive inpatients with chronic schizophrenia were enrolled in a cross-sectional study. All subjects were assessed with the Positive and Negative Syndrome Scale (PANSS, five-factor model), the Insight and Treatment Attitudes Questionnaire (ITAQ), and the Measurement and Treatment Research to Improve Cognition in Schizophrenia (MATRICS) Consensus Cognitive Battery (MCCB). Bivariate association and multiple linear regression analyses were used to investigate the relationship between insight and both symptoms and neurocognition.
Results: On bivariate correlation, the positive, negative, disorganized and excited factors of the PANSS showed a negative correlation with insight but there was no significant association between the MCCB total score or any component subscale and insight. Multiple regression analysis showed that positive symptoms, disorganized/concrete symptoms and excited symptoms contributed to awareness of mental illness; positive and disorganized/concrete symptoms were significant contributors to awareness of the need for treatment; but there were no significant associations with the MCCB.
Conclusions: Insight in this sample of patients with chronic schizophrenia is significantly associated with clinical symptoms but not with neuropsychological functioning.

COGNITIVE PERFORMANCE RELATED TO DRIVING ABILITY IN SCHIZOPHRENIA PATIENTS TREATED WITH ANTIPSYCHOTICS

Lead Author: Euihyeon Na, M.D.
Co-Author(s): Sungwon Roh, M.D., Ph.D., Ji Hyun Han, M.D., Se Jin Park, M.P.H., Ph.D., A. Eden Evins, M.D., M.P.H.

SUMMARY:
Objectives: The aim of this study was to determine the cognitive performance related to automobile driving in patients with schizophrenia treated with a typical antipsychotic drug, haloperidol, or with atypical antipsychotics, risperidone, olanzapine, aripiprazole, and paliperidone.
Methods: Neurocognitive performance was assessed using the Cognitive Perceptual Assessment for Driving (CPAD), which is a computerized battery of tests of visual perception, attention, working memory, reaction time, and inhibitory control for driving ability. Sixty-six patients with schizophrenia who received antipsychotic monotherapy participated in the study. Of these, 12 were medicated with haloperidol, 20 with risperidone, 8 with olanzapine, 18 with aripiprazole, and 8 with paliperidone.
Results: Thirty-six (55%) of the schizophrenia patients were regarded as being competent to drive. Of the subjects treated with haloperidol, 25% (n=3) passed the CPAD, while 45% (n=9), 50% (n=4), 67% (n=12), and 100% (n=8) of those treated with risperidone, olanzapine, aripiprazole, and paliperidone, respectively, passed the test. The scores on the CPAD and the Digit Span subtest were higher for the aripiprazole and paliperidone groups than for the haloperidol and risperidone groups.
Conclusion: The cognitive performance related to driving may be better among

patients taking aripiprazole and paliperidone than among those taking haloperidol and risperidone. These findings suggest that the most recently released atypical antipsychotics may confer a neurocognitive advantage over conventional or older atypical antipsychotics.

BDNF VAL66MET POLYMORPHISM IN SCHIZOPHRENIC PATIENTS EVALUATED WITH MATRICS CONSENSUS COGNITIVE BATTERY

Lead Author: Rodrigo Nieto, M.D., Ph.D.
Co-Author(s): Hernan Silva, M.D., Leonor Bustamante, M.D., Ph.D., Valeria Salinas, Carmen Paz Castaneda, Cristian Montes, Alfonso Gonzalez, M.D., Alejandra Armijo, M.D., Ruben Nachar, M.D., Juana Villarroel, M.D., Juan Meneses, M.D., Simon Medina, Tamara Lopez, Valeria de Angel, Manuel Kukuljan, M.D., Ph.D.

SUMMARY:
Introduction:
BDNF Val66Met polymorphism has been associated with several neuropsychiatric disorders, including schizophrenia. However, the evidence available up to date has not provided conclusive results about this particular association. This single nucleotide polymorphism (SNP) has also been linked to disturbances in neurocognitive functioning. Considering the relevance of cognitive symptoms in schizophrenia, we aimed to study the relation of this polymorphism with cognitive functioning in schizophrenic patients.

Methods:
We evaluated the allele frequencies of the Val66Met polymorphism in 30 patients with schizophrenia and 20 healthy control subjects. Cognitive functioning of patients was assessed with the MATRICS Consensus Cognitive Battery (MCCB). Results from the seven MCCB cognitive domains were compared between groups of patients with different BDNF val66met genotypes.

Results:
The distribution of genotypes according to BDNF Val66Met polymorphism tended to be different in patients with schizophrenia and in control subjects ($p = 0.26$). In patients with schizophrenia, subjects with the Met allele tended to have poorer cognitive outcome, particularly in the Reasoning and Problem Solving cognitive domain of MCCB ($p = 0.11$).

Discussion:
BDNF genotype may relate both to the probability of having the disease, and to the severity cognitive impairment. These findings are consistent with the results of other studies in the literature, and may require a larger sample size to obtain results that are statistically significant.

Project funded by HCUCH and BNI.

ASSOCIATION OF NITRIC OXIDE SYNTHASE-1 (NOS-1) GENE POLYMORPHISMS WITH SCHIZOPHRENIA IN KOREAN POPULATION

Lead Author: Mi ae Oh, M.D.
Co-Author(s): Jin Keon Park, M.D., Young Jong Kim, M.D., Won Sub Kang, M.D., Ph.D., Jong Woo Kim, M.D., Ph.D.

SUMMARY:
Introduction: Nitro Oxide (NO) is well known for the various function that regulation of neurotransmitter release, synaptic plasticity, and effects on the neurotransmission of various additional systems in the CNS, including the dopaminergic and the serotonergic. It primarily produced by nitric oxide synthase (NOS-1) gene which located on chromosome 12q24. Recent studies have found that association between schizophrenia and NO signaling which related to the glutamatergic theory and the role in mediating NMDA receptor mediated signaling. Also, it was suggested that genetic variation of NOS-1 has a role in

cognitive dysfunction, probably by mediating glutamatergic tone in schizophrenia patients. In this study, we investigated whether genetic polymorphisms of NOS-1 gene are associated with schizophrenia in Korean population.
Methods: Six single nucleotide polymorphisms (SNPs) of the NOS-1 gene considering their heterozigosity and minor allele frequency were genotyped in 203 schizophrenia patients and 330 control subjects. The genotypes of SNPs were performed by direct sequencing. All patients were evaluated by the operational criteria checklist for psychotic illness. Multiple logistic regression models (co-dominant, dominant, recessive, and overdominant) were performed to evaluate odds ratios (ORs), 95% confidence intervals (CIs), and p values controlling for age and gender as covariables. To avoid chance findings due to multiple testing, a Bonferroni correction was applied.
Results: The genotype frequencies of three SNPs showed significant association between schizophrenia and controls [rs545654, p=0.018, OR=1.56, 95%CI=1.11-2.16 in the co-dominant model (T/T vs. C/C) and p=0.005, OR=1.57, 95%CI=1.15-2.09 in the dominant model (C/T+T/T vs. C/C); rs499776, p=0.012, OR=1.22, 95%CI=1.01-2.89 in the co-dominant model (A/A vs. G/G) and p=0.003, OR=1.77, 95%CI=1.25-3.09 in the recessive model (A/A vs. G/G + A/G); rs567581, p=0.008, OR=1.78, 95%CI=1.51-3.19 in the co-dominant model (A/A vs. G/G) and p=0.008, OR=1.55, 95%CI=1.35-2.34 in the recessive model (A/A vs. G/G + A/G)].
Conclusions: These results suggest that NOS1 gene polymorphisms may have influence upon the risk of developing schizophrenia in Korean population.
Key Words: nitric oxide synthase (NOS-1) gene, synaptic plasticity, glutamatergic, schizophrenia

GENETIC ASSOCIATION BETWEEN CACNA1A POLYMORPHISMS AND SCHIZOPHRENIA IN KOREAN POPULATION

Lead Author: Jin Keon Park
Co-Author(s): Jin Keon Park, M.D., Mi Ae Oh, M.D., Young Jong Kim, M.D., Ji Young Song, M.D., Ph.D.

SUMMARY:

Introduction: The cerebellum has been implicated in the pathophysiology of schizophrenia, with the cortico-thalamo-cerebellar circuit receiving particular attention. Neurologic soft signs which were often found in schizophrenia were correlated with the cerebellar abnormalities. CACNA1A gene encodes the alpha1a subunit of voltage-gated Cav2.1 Ca2+ channels that play an important role in neurotransmitter release at most central brain synapses. Mutations on CACNA1A gene are associated with several neurological disorders including cerebellar ataxia. The present authors postulated that CACNA1A would be a candidate gene for involvement in the pathogenesis of schizophrenia. Therefore, we investigate whether genetic polymorphisms of CACNA1A gene are associated with schizophrenia in Korean population.

Methods: For our analysis, 211 patients with a diagnosis of schizophrenia and 270 healthy controls were recruited. Nine single nucleotide polymorphisms (SNPs) of the CACNA1A gene considering their heterozigosity and minor allele frequency were genotyped. SNP genotyping was conducted using direct sequencing. All patients were diagnosed by psychiatrists, according to the DSM-IV-TR. Multiple logistic regression models (co-dominant, dominant, and recessive) were performed to estimate odds ratios (ORs), their 95% confidence intervals (CIs) and corresponding p values, controlling for age and gender as covariables to analyze the associations between schizophrenia and SNPs.

Results: One coding SNP [rs16016 (p=0.0063 in the dominant model, OR=0.60, 95%CI=0.42-0.87)] and three intronic SNPs [rs4926252 (p=0.013 in the co-dominant model, OR=0.48, 95%CI=0.27-0.86), rs752079 (p=0.011 in the recessive model, OR=0.33, 95%CI=0.13-0.83), and rs1422259 (p=0.031 in the recessive model, OR=0.58, 95%CI=0.35-0.96)] had significant differences in the genotype frequencies between schizophrenia and controls.

Conclusions: We found significant association between CACNA1A gene polymorphism and schizophrenia in Korean population. Our results suggest that CACNA1A gene may be a considerable candidate gene in the pathogenesis of schizophrenia.

SUBSTANCE INDUCED PSYCHOTIC DISORDER SECONDARY TO "LOVE POTION NO. 9"

Lead Author: John A. Pesavento, M.D.
Co-Author(s): Asish Sharma, M.B.B.S
Rachel Faust, M.D

SUMMARY:

Introduction:
Substance induced psychotic disorders represent a very under researched area. Too often, it is assumed that only common drugs of abuse must be screened for in order to rule out a substance induced mood disorder. This is the first case report that documents a patient who developed a substance induced psychotic disorder from the over use of the supplement Love Potion No. 9. Love Potion No. 9 is advertised as a sexual mood enhancer and energy supplement. To the knowledge of the authors, neither Love Potion No. 9 nor any of its active ingredients have been documented as the cause of an acute psychotic disorder.

Case report:
The patient is a 43-year-old male with no previous psychiatric history. He presented to an Emergency Room with suicidal ideations, auditory and visual hallucinations and aggressive behavior. He reported that for the previous month he had been ingesting 15-20 one ounce containers of Love Potion No. 9 per day. He said that he recalled feeling paranoid and "thinking that a computer virus was threatening me and that it would expose my drug usage." He reported that it previously took about four days for Love Potion No. 9 to clear from his system and then his cognition returned to normal. He reported that he never had any problems when not using it.

Discussion:
Love Potion No. 9 is a supplement that is marketed by the companies Vitol and The Herbalist. It is available on several herb and dietary supplements websites. According the website "The Herbalist," Love Potion No. 9, "Promotes healthy libido, energy, and stimulation, and has mood-enhancing herbs that put one in just the right mood for love." The supplement's active ingredients include kava kava, cacao bean, damiana, yohimbe, licorice, cinnamon and cayenne pepper. It occurred to the authors that it may be a specific ingredient listed above that may be the cause of our patient's psychosis, as opposed to the combination of ingredients. Thus, a literature search was conducted looking for cases with each of the individual ingredients, looking for cases that cite one of them as a causative agent in a case of substance induced psychosis. Each ingredient was searched plus the term "psychosis" in Pub Med and the resulting articles were reviewed. None of the listed ingredients have had a reported case study causing substance induced psychosis. This case report demonstrates the importance of recognizing that some substances that will not cause a positive urine drug screen can cause psychosis.

Conclusion:

Love Potion No. 9 is a nutritional supplement that is advertised to enhance one's mood and libido. Similar to other over the counter supplements, it can be dangerous when abused. This case report demonstrates that substance induced psychosis can be debilitating and can often be the product of not so common drugs of abuse.

DOMAIN-SPECIFIC MCCB-ASSESSED COGNITIVE ASSOCIATIONS TO SYMPTOMS OF METABOLIC SYNDROME IN PATIENTS REFERRED TO AN EARLY PSYCHOSIS INTERVENTION CLINIC.

Lead Author: Sudhakar Sivapalan, M.D.
Co-Author(s): Rohit Lodhi, M.D., Virginia Newton, Ph.D., Brett Granger, B.A., Katherine J. Aitchison, B.M. B.Ch., Ph.D., Scot E. Purdon, Ph.D.

SUMMARY:

The metabolic syndrome (MetS) is a cluster of symptoms that have been identified as significant risk factors in the development of cardiovascular disease. MetS has been defined by the National Cholesterol Education Program's Adult Treatment Panel III (2001) as having three or more of the following: increased central obesity, decreased high density lipoprotein (HDL) cholesterol, elevated triglycerides, hypertension, and increased insulin resistance. The relevance of MetS to the psychiatric population has also been established, especially amongst those being treated with antipsychotic medications. The prevalence of MetS in a population of those with severe mental illness (SMI) was found to be about 43% in the Clinical Antipsychotic Trials of Clinical Effectiveness (CATIE) study (2005), and was predominantly attributed to the role that medications may play in promoting metabolic dysfunction. More recent studies, following these initial investigations, seem to indicate that simply having severe mental illness (SMI) may also put one at increased risk of developing MetS. Given this association, it is important to consider the role that cognitive dysfunction may play in the maintenance of health and mental well being in these individuals.

A number of studies have investigated the link between cognitive dysfunction and MetS. These studies mainly focus on older members of the general population, and often in the context of developing cardiovascular disease and dementia. A small review of the literature focusing on studies involving non-geriatric general populations, revealed that memory, executive functioning, processing speed, and general intellect were affected by having MetS, with specific MetS symptoms appearing to correlate with domain-specific cognitive changes. Unfortunately, the data was quite limited with respect to children and adolescents, and the average age of most participants was still approximately 57 years old.

More recently, several studies explored the role of cognitive dysfunction and MetS in SMI, but once again, the number of studies involving a younger population is limited. Here, we present the cognitive and metabolic profiles of a population of individuals presenting with early psychosis (less than one year of treatment) through the Edmonton Early Psychosis Intervention Clinic, in Edmonton, Alberta, Canada. A subgroup of this relatively young sample was administered the MATRICS Consensus Cognitive Battery (n = 65, mean age of 22 years old), most of whom were also assessed on all five markers of MetS (n=50). Triglyceride levels were inversely associated with verbal list learning, Fasting glucose levels were directly related to spatial working memory, recall of figures, and a measure of reasoning and problem solving. If replicated, the results suggest that in the earliest phases of a psychotic illness, dyslipidemia may have a detrimental influence on some cognitive skills, but hyperglycaemia may not.

COGNITIVE AND NEUROLOGIC DEVELOPMENTAL PROBLEMS PREDICTIVE OF INCREASED NEUROPSYCHOLOGICAL IMPAIRMENT IN SCHIZOPHRENIA

Lead Author: Andrew D. Snyder, M.S.
Co-Author(s): Jesse Hochheiser, Daniel R. Weinberger, M.D., Karen F. Berman, M.D., Dwight Dickinson, Ph.D., J.D.

SUMMARY:
Illness heterogeneity is a major challenge in schizophrenia research. To address this, various analyses have sought to identify robust, homogeneous psychosis subgroups based on clinical and behavioral characteristics. A number of studies have examined developmental patterns prior to illness onset to identify possible schizophrenia subgrouping schemes (e.g., Cole, et al., 2012).

Using principal components and clustering techniques, we analyzed data from a detailed, retrospective questionnaire addressing issues in developmental history (e.g., cognitive/academic problems, social issues, neurological conditions, behavioral problems) to examine subgroups within a large sample of people with schizophrenia. Subjects (n = 357) were participants in the Genetic Study of Schizophrenia conducted at the Clinical Brain Disorders Branch at the National Institute of Mental Health. Diagnoses were determined by research psychiatrists/psychologists. The developmental history questionnaire (DQ) was completed by parents. Participants in the study completed a comprehensive neuropsychological battery, symptom ratings, and other assessments.

Responses to each of 16 DQ items were coded into 7 dimensions of development: cognitive, behavioral, neurological, psychological, motor, social, and speech. Principal components analysis suggested that the 7 dimensions could be represented by 2 components (cognitive/neurological, behavioral/social). Using the two derived components as indicators, cluster analysis yielded three clusters: (1) primarily cognitive/neurological developmental issues, (2) primarily behavioral/social developmental issues, and (3) minimal developmental issues. ANOVAs and pairwise Â¬tÂ¬-tests revealed modest group-wise differences in demographic, neuropsychological, and clinical variables. Differences significant at the Î± = 0.05 level suggested somewhat more serious overall developmental compromise in cognitive/neurological group with impairments in speeded performance, verbal ability, mathematical ability, and memory relative to the other groups.

These data suggest that there may be fairly clear developmental history subgroups within a large schizophrenia sample which are distinguished by cognitive/neurological and social/behavioral developmental issues in childhood. Although the clustering was effective, differences in adult clinical and behavioral variables were more modest than expected. It appears that evidence of cognitive, academic, and neurological issues in early life are predictive of somewhat increased severity of illness in adulthood. These analyses are being expanded through various tests for robustness including formal assessment of marginal group-wise differences in testing; alternative clustering methods; and regression of developmental problem indicators against symptomatology and neuropsychological variables.

PREDICTIVE VALUE OF NEGATIVE SYMPTOMS FOR QUALITY OF LIFE IN FIRST EPISODE PSYCHOSIS

Lead Author: Alba Toll, M.D.
Co-Author(s): Anna ManÃ©, Ph.D., Daniel BergÃ©, Ph.D., Jose Maria GinÃ©s, M.D., Victor PÃ©rez-SolÃ , Ph.D.

SUMMARY:
Introduction: Previous studies have examined the prognostic values of

premorbid, sociodemographic, and psychopathological variables on outcome in patients with schizophrenia. Poor outcome in schizophrenia has been associated with the presence of the negative symptoms, poor premorbid adjustment, male gender, younger age at onset, insidious onset, longer interval from the onset to treatment, and the absence of any clear precipitating events1,2.
Although negative symptoms have been associated with poor outcome, the relationship between the psychotic and disorganized dimensions and subsequent outcome has been less clear1,3.

Aims: With this study, we want to know which symptoms (measured during the acutely disturbed state at the first psychiatric hospitalization) could predict best the subsequent quality of life in first episode psychosis (FEP) after 1 year follow - up.

Methods: 175 FEP patients were consecutively admitted to Hospital del Mar since January 2008 to September 2014 and entered the first episode programme of the institution. The included evaluation were, among others: sociodemographic data, duration of untreated psychosis (DUP), diagnosis, substance use, the Positive and Negative Symptoms Scale (PANSS) and the global assessment functioning scale (GAF) at baseline and 1 year follow â€“ up.
We studied the correlation between PANSS subscales scores (negative symptoms, positive symptoms and general psychopathology symptoms) at baseline and GAF scores at 1 year follow â€“ up, using Pearson Correlation.

Results: The mean age at onset of illness was 25,13 years (ds=5.02) and most of the subjects were male (58,9%). The mean DUP was 104,58 days and the most frequent diagnosis was Psychosis NOS (48,6%).
Negative symptom at baseline was negatively and significantly correlated with GAF scores at 1 year follow â€“ up (r = -2,239, p = 0,039). Nevertheless, correlation between positive symptoms (r = 0,139, p = 0,233) and general psychopathology symptoms (r = -0,05, p = 0,164) at baseline with GAF scores at 1 year follow â€“ up was not significative.

Conclusions: In our sample of first episode psychosis, severity of negative symptoms at index hospitalization may be a portent of poor outcome. In general, severity of positive or general psychopathology symptoms at intake does not appear to be related to subsequent quality of life in FEP patients. However, more studies should be done to confirm this issue.

COMPARISON OF USING CLOZAPINE MONOTHERAPY AND USING COMBINATION OF OTHER ATYPICAL ANTIPSYCHOTICS IN SCHIZOPHRENIC PATIENTS

Lead Author: Dilek SARIKAYA VARLIK, M.D.
Co-Author(s): Nese Ustun, M.D., Ozgur Onder, M.D., Dilek Sarikaya Varlik, M.D., Cenk Varlik, M.D., Sevilay Kunt, M. D., BÃ¼ÅŸra GÃ¼rel, M.D., Mustafa TunÃ§tÃ¼rk, M.D., Nezih Eradamlar, M.D.

SUMMARY:

OBJECTÄ°VE: In this study it is aimed to investigate schizophrenia patients, who use clozapine monotherapy and non-clozapine atypical antipsychotic combination, by comparing sociodemografic data, duration of illness, number of admissions, suicidal ideations and attempts, psychotic symptoms, depressive findings, side effects among them.
METHOD:The present study included 86 patients diagnosed with schizophrenia according to DSM-IV criteria who were followed up in outpatient clinic of Psychotic Disorders Centre and Outpatient Treatment Unit of BakÄ±rkÃ¶y Research and Training Hospital for Psychiatry, Neurology and Neurosurgery at least 3 months with the same antipsychotic.The patients were

assessed by using a sociodemographic data form, Positive and Negative Syndrome Scale (PANSS), Calgary Depression Scale for Schizophrenia, aggression scale, UKU Side Effects Rating Scale and Scale of Suicide Ideation.
RESULTS:The mean PANSS positive score in the clozapine group was 8,19 Â± 2,23, the mean value in the combination group was 8,87 Â± 2,12 and the difference between the two groups was statistically significant. Scores of suicidal ideation in the group using clozapine, ranged between 0-10 and 3,58 Â± 2,95 in average; and in the group using combination, it ranged between 0-13 and 5,85 Â± 3,64 in average. The difference in suicidal ideation scale averages was significant between the two treatment groups. The average scores in Calgary Depression Scale for Schizophrenia, that is used to scan depressive symptoms, were 2,69 Â± 2,12 in the clozapine group and 5,87 Â± 3,69 in the combination group and the difference between them was statistically significant. Autonomic side effect average scores were 3,13 Â± 2,61 in clozapine users and 1,32 Â± 1,50 in combination users. The difference in autonomic side effects between the two groups was statistically significant.
CONCLUSÄ°ON: When we compared the patients using clozapine mono therapy and the patients using non-clozapine atypical antipsychotic combination, clozapine monotherapy was more effective than combination treatment in decreasing severity of positive psychotic symptoms, depressive symptoms and suicidal ideation. Autonomic side effects were observed more in the patients using clozapine than the patients using non-clozapine atypical antipsychotic combination.

SLEEP IRREGULARITY IN THE PREVIOUS WEEK INFLUENCES ON THE FIRST-NIGHT EFFECT IN POLYSOMNOGRAPHIC STUDY

Lead Author: Dahye Lee

Co-Author(s): Chul-Hyun Cho, M.D., Ph.D., Changsu Han, M.D., Ph.D., Eunil Lee, M.D., Ph.D., Heon-Jeong Lee, M.D., Ph.D., Leen Kim, M.D., Ph.D.,

SUMMARY:
Objectives: The first night effect is a well-known phenomenon resulting from a subject's maladaptation to the unfamiliar environment of a sleep laboratory. To date, there are no reports regarding the previous sleep pattern of individuals on first-night effect. We aimed to investigate the effect of the previous sleep pattern before the sleep study on first-night effect.
Methods: Twenty-four young healthy male subjects had completed the study procedure. During one week prior to study, the participants kept sleep diaries and wore actigraphs to identify sleep-wake pattern. Two consecutive nights of polysomnography were conducted after that. Wilcoxon signed rank tests were applied to compare sleep variables of the two nights. The variance (standard deviation) of sleep onset time during the previous week was used as an index of irregularity. A Kendall's ranked correlation analysis and a linear regression test were applied to detect correlation between sleep irregularity and the first night effect in polysomnographic study.
Results: There were significant differences in the values of sleep efficiency ($p=0.01$) and WASO ($p=0.006$) between the two nights. The sleep study of the first night showed lower sleep efficiency and higher WASO compared to the study of the second night. Sleep irregularity in the previous week showed a negative correlation with sleep efficiency ($p<0.001$) of the first night, but did not show significant correlations with any other sleep parameters.
Conclusions: We replicated the existence of the first-night effect of sleep study. We demonstrate that sleep irregularity in the previous week may influence on the first night effect in polysomnographic study.

BULLYING INCREASES RISK OF FUTURE SUICIDAL BEHAVIOUR!

Lead Author: Nazanin Alavi, M.D.
Co-Author(s): Taras Reshetukha, M.D., Eric Prost, M.D.

SUMMARY:
Introduction: Bullying and victimization is a universal public health concern that affects a significant proportion of adolescents. In the last decade research has shown that about 10%-30% of children and adolescents are recurrently involved in school bullying, either as victims, bullies, or bully-victims. Within the last 5 years there have been several media reports on teenagers who have completed suicide due to bullying. Bullying has been identified as one of the factors that substantially increases the risk of mental health problems.
The present study aims to examine the between suicidality and past history of bullying.
Method: Charts of all patients seen by the psychiatry team in the emergency room from 2011 to 2013 were reviewed. Suicide predictors assessed, the clinical decision made and the suicide predictors missed at the time of assessment and history of bullying and abuse, were recorded.
Results: Our study shows significant link between suicidal behavior and history of bullying but this predictor was not commonly assessed in emergency risk assessment.
Conclusion: There was a significant link between bullying and future suicidal behaviour which is not commonly assessed. It is important that physicians identify this risk factor while assessing patients. Psychiatric assessment and treatment of patients presenting for risk assessment to hospital clinics, should include detailed questions on type and frequency of bullying. Bullying is more widespread than we assume as most victims do not disclose it, yet bullying deserves attention due to its potential for wide dissemination and consequent devastating effects on victim's mental health.

RISK FACTORS THAT ARE COMMONLY MISSED IN SUICIDE RISK ASSESSMENT IN EMERGENCY ROOM

Lead Author: Taras Reshetukha, M.D.
Co-Author(s): Nazanin Alavi Tabari, M.D., Eric Prost, M.D., FRCPC

SUMMARY:
Learning objectives: At the end of this session participants will be able to:

1. Understand and apply important suicide risk predictors assessing suicide risk in emergency room.
2. Understand suicide risk predictors commonly missed in suicide risk assessment in emergency room.
3. Understand how to improve suicide risk assessment in emergency room.

Introduction: Suicidal behavior is one of the most common reasons for presentation to emergency room. Perhaps the most frequently examined topic in the field of suicidology, is the degree to which death by suicide can be predicted. In spite of identifiable risk factors, completed suicide remains essentially unpredictable by current tools and assessments. Moreover, some suicide risk factors may not be included consistently in suicidal risk assessments in the emergency room by either emergency medicine physicians or psychiatrists.

Method: An online survey was sent to all psychiatry and emergency physicians at Queen's university to assess their opinion on predictors of suicide while assessing patients. The importance of predictors was compared between 2 groups. In addition, charts of all patients seen by psychiatry team in emergency room from 2011 to 2013 were reviewed. Suicide predictors assessed, the clinical decision made and suicide predictors missed at the time of

assessment, were recorded. The suicide risk factors assessed in emergency room were compared with the result from the screening questionnaire.

Results: Our study shows links between bullying and childhood trauma, and suicidal ideation but based on the screening questionnaire and the chart review, these predictors were not commonly assessed. The result of our study also shows that many predictors deemed important by physicians are missed on actual assessment.

Conclusion: Our study shows that many important suicidal risk factors are missed in emergency room assessments. In addition there was a significant link between bullying and childhood trauma, and future suicidal behavior which are not commonly assessed. It is important that physicians identify these risk factors while assessing suicide risk. We aim to use the results of this study to implement educational intervention that gears towards improving suicide risk assessment and documentation by emergency physicians and psychiatrists.

NEW RESEARCH POSTER SESSION 1

Volunteer Moderators: Pankaj Manocha, M.D., Godfrey D. Pearlson, M.D.

QUALITY OF LIFE RESULTS IN CHILDREN AND ADOLESCENTS WITH ADHD: PIVOTAL DATA ON A NEW FORMULATION OF EXTENDED-RELEASE METHYLPHENIDATE CAPSULES

Lead Author: Ann C. Childress, M.D.
Co-Author(s): Earl Nordbrock, Ph.D., Akwete L. Adjei, Ph.D., Wei-wei Chang, Ph.D.,Robert J. Kupper, Ph.D., Sharon B. Wigal, Ph.D., Lawrence Greenhill, M.D.

SUMMARY:

Introduction: Quality of life (QoL) measures are important for understanding the effect of therapeutic agents on physical function, emotional/social well-being, and school functional behavior in children diagnosed with attention deficit hyperactivity disorder (ADHD). A new multilayer extended-release methylphenidate product (MPH-MLR, provisional trade name Aptensio XRâ„¢) is under clinical investigation for ADHD in the US.
Hypothesis: In two phase 3 studies, MPH-MLR will improve QoL measures compared with placebo in children/adolescents with ADHD.
Methods: Two randomized, double-blind, placebo-controlled phase 3 studies were included in the MPH-MLR clinical development program. Study 1 evaluated the time course of response to MPH-MLR in an analog classroom setting and included four phases: screening (â‰¤28 days), dose optimization (4 weeks), double-blind crossover (2 weeks) and follow-up call. Study 2 was a forced-dose parallel evaluation of MPH-MLR safety/efficacy also including four phases: screening (â‰¤28 days), double-blind (1 week), open-label dose optimization (10 weeks) and follow-up call. In both studies, QoL was evaluated using several QoL measures including the Pediatric Quality of Life Inventoryâ„¢ (PedsQL), the Weiss Functional Impairment Rating Scale (WFIRS), and the Child or Adolescent Sleep Habits Questionnaire (CSHQ or ASHQ) during the double-blind and open-label periods and Daily Parental Rating of Morning and Evening Behavior (DPREMB-R) during the double-blind period only. PedsQL was administered using a yes/no option instead of the usual 5-point scale. For study 1, analysis of the double-blind portion of the study used analysis of variance (ANOVA) with terms for subject, treatment, period and sequence. For study 2, analysis of the double-blind portion of the study used analysis of covariance (ANCOVA) with terms for subject, treatment, and site and with each subject's baseline score as a covariate.
Results: Study 1 included 22 patients aged 6-12 years; study 2 included 221 patients aged 6-18 years. Statistically significant

differences among treatments were not evident in either study over the double-blind period. Studies 1 and 2 showed no significant difference among treatments for total or subscale PedsQL scores; pâ‰¥ 0.4402 (study 1, ANOVA), pâ‰¥ 0.3372 (study 2, ANCOVA). PedsQL score and all subscale scores decreased (indicating improvement) during the open-label phase in both studies. Results of WFIRS and CSHQ/ASHQ were similar. DPREMB-R scores (administered only in double-blind period) were not significantly different among treatments.
Conclusion: Decreases in PedsQL and improvements in other QoL measures over the open-label periods suggest that use of an optimized dose of MPH-MLR improves QoL in children/adolescents with ADHD. Prospective studies will need to confirm these findings.

ATOMOXETINE MONOTHERAPY COMPARED WITH COMBINATION THERAPY FOR TREATMENT OF ADHD: A RETROSPECTIVE CHART REVIEW STUDY

Lead Author: David Clemow, Ph.D.
Co-Author(s): Oren W. Mason, M.D., Elias H. Sarkis, M.D., Andre B. Araujo, Ph.D., Dustin D. Ruff, Ph.D., Shufang Wang, Ph.D., Wenyu Ye, Ph.D., Steven L. Able, Ph.D.

SUMMARY:

Introduction: This study analyzed mean Clinical Global Impression â€“ Severity (CGI-S) in Attention-Deficit/Hyperactivity Disorder (ADHD) patients treated with atomoxetine monotherapy versus atomoxetine combination therapy with another ADHD-indicated medication. Hypothesis: ADHD patients treated with combination therapy will have lower CGI-S endpoint scores. Methods: This was a retrospective observational chart review study of child and adult ADHD patients first treated with atomoxetine at 2 investigator sites, who had efficacy data captured, between 01Jan2011 and 31Dec2013. Patients did not have to be treatment naÃ¯ve. Patients had to be treated â‰¥50 days post baseline and have an endpoint assessment. To compare endpoint CGI-S between mono (N=77) and combination (N=108) therapy cohorts, an ANOVA was used and adjusted for therapy group, investigator, baseline CGI-S scores, propensity strata, interaction between propensity strata and therapy group, age group, interaction of propensity strata and age group, interaction of therapy group and age group, and duration of treatment. Results: Due to nonoverlapping propensity scores, 6 of 193 patients were excluded from analyses. There were no statistically significant cohort differences in age, gender, or comorbidities, although there were fewer children (6-12 years) and more depressed patients in the combination therapy cohort; ADHD subtype was statistically significant, with more combined-type patients in the combination cohort. Significantly more combination patients had previous ADHD treatment (83.3 vs 51.9%; P<0.0001). The adjusted least-squares mean endpoint CGI-S scores after a median 169 (mean: 264) days of treatment were not statistically significantly different between monotherapy (3.85) and combination therapy (3.84) cohorts (P=0.147). In the overall population, the monotherapy and combination therapy cohorts were similar in discontinuation due to any reason (35.4%, 29.4%), adverse event (7.3%, 6.4%), and lack of efficacy (6.1%, 5.5%). Conclusions: Atomoxetine combination therapy showed no evidence of additional benefit over atomoxetine monotherapy in a retrospective observational real-world setting.

ESTIMATING THE PREVALENCE OF DSM-5 ATTENTION DEFICIT/HYPERACTIVITY DISORDER (ADHD) IN A COMMUNITY SAMPLE

Lead Author: Manjiri Pawaskar, Ph.D.
Co-Author(s): Edward A. Witt, Ph.D., Eileen E. Ming, M.P.H., Sc.D., Manisha Madhoo, Manjiri Pawaskar, Ph.D.

SUMMARY:
Introduction: The Diagnostic and Statistical Manual Fifth Edition (DSM-5; 2013), changed diagnostic criteria for adult ADHD, requiring 5 of 9 hyperactive-impulsive or inattentive symptoms instead of 6 of 9 per the DSM-IV-TR edition. The purpose of this survey was to estimate prevalence of adult ADHD as defined in DSM-5, and to understand the socio-demographic profile and psychiatric comorbidities of those who meet DSM-5 criteria for ADHD in the general US adult population using a large community sample.

Methods: US adults who had participated in the 2013 internet-based National Health and Wellness Survey (NHWS) were recruited to participate in the current internet survey. The NHWS uses a stratified random sampling framework with strata based on age, sex, and race to obtain a representative sample of US adults. The current survey, conducted in October 2013, included measures of socio-demographics, general health, psychiatric comorbidities, and the Adult ADHD Self-Report Scale (ASRS). Symptomatic ADHD patients were identified based on endorsement of ASRS items representing DSM-IV and DSM-5 symptom criteria during the last six months.

Results: Among 22,397 respondents, 1,942 met criteria for DSM-5 ADHD (symptomatic) in the past 6 months as determined by ASRS. 20,028 participants didn't meet full DSM-5 criteria, screened negative on ASRS, and had no lifetime diagnosis of ADHD (No ADHD). The projected ADHD 6 month prevalence for adults increased from 6.7% (women: 5.9%; men: 7.6%) using DSM-IV-TM criteria to 10.1% (women: 9.4%; men: 10.8%) using DSM-5 criteria. This increase was larger for women (5.9% to 9.4%) than for men (7.6% to 10.8%). ADHD symptomatic adults were primarily Inattentive only (45.8%) followed by Inattentive/Hyperactive-Impulsive (37.3%) and Hyperactive-Impulsive only (17.0%). Based upon bivariate analyses, higher proportions of symptomatic adults were younger than No ADHD adults (%<29 yrs: 34.7% vs. 19.5%, p<.001). Fewer symptomatic adults were non-Hispanic white (75.7% vs. 79.5%, p<.001), married (48.0% vs. 56.9%, p<.001), or had a college degree (47.4% vs. 56.4%, p<.001) than No ADHD adults. Finally, a higher proportion of ADHD symptomatic adults reported lifetime diagnoses of bipolar disorder (10.3% vs. 1.3%, p<.001), anxiety (45.4% vs. 13.0%, p<.001), and depression (51.2% vs. 14.7%, p<.001) than No ADHD adults.

Discussion: Results show that the change in DSM-IV to DSM 5 criteria resulted in increased prevalence of ADHD in adults, with a greater increase among women than men. ADHD symptomatic adults more frequently reported psychiatric comorbidities than No ADHD adults, which could indicate higher comorbidity burden.

COMPARISON OF QUALITY OF LIFE, PRODUCTIVITY AND FUNCTIONING BETWEEN DIAGNOSED AND UNDIAGNOSED ADULTS WITH ATTENTION-DEFICIT/HYPERACTIVITY-DISORDER

Lead Author: Moshe Fridman, Ph.D.
Co-Author(s): Manjiri Pawaskar, Ph.D., Regina Grebla, Ph.D., Manisha Madhoo, M.D.

SUMMARY:
Objective: To estimate the impact of Attention-Deficit/Hyperactivity-Disorder (ADHD) diagnosis on health-related quality of life, work productivity, functioning and self-esteem in US adults.

Methods: A nationally-representative sample of 22,397 US adults recruited through the National Health and Wellness Survey completed an internet survey in October 2013. Data collected included socio-demographic and clinical characteristics. The validated Adult ADHD

Self-Reported Scale was used to determine ADHD symptomatic status. Outcome measures included the EuroQOL EQ-5D-5L utility index (EQ-5D), Work Productivity and Activity Impairment Index (WPAI) scale, Sheehan Disability Scale (SDS) and the Rosenberg Self-Esteem Scale (RSES). Adults diagnosed with ADHD were matched on socio-demographic and comorbid conditions to a variable number of symptomatic undiagnosed controls within the same gender and age group using propensity score methods. The effect of an ADHD diagnosis on each outcome was adjusted for covariates that remained imbalanced post-matching using generalized mixed models.

Results: We matched 444 respondents who reported an ADHD diagnosis with 745 of 1,649 respondents who were symptomatic but undiagnosed. After matching, respondents were on average 42.0 years old, 49.6% female and 76.1% white. Among matched diagnosed ADHD adults, 45.3% reported being treated for ADHD at the time of the survey. Diagnosed ADHD adults reported significantly ($p<0.0001$) better mean difference in health-related quality of life as measured by EQ-5D total score [0.05, (95% confidence interval) (0.03, 0.07)], and better health status using EQ visual analog scale [5.37, (3.13, 7.61)]. These adults reported significantly lower impairment in activity as measured by WPAI [-7.87, (-11.34, -4.39)] and lower functional impairment measured by SDS total score [-2.84, (-3.93, -1.77)] compared with undiagnosed symptomatic ADHD adults ($p<0.0001$). Diagnosed ADHD adults also reported higher self-esteem measured by RSES total score [3.25, (2.55, 3.94)] compared with undiagnosed symptomatic ADHD adults ($p<0.0001$). There was no statistically-significant difference in WPAI Productivity Loss between groups [-4.74, (-11.44, 1.95)], ($p=0.164$).

Conclusion: US adults diagnosed with ADHD reported significantly higher health-related quality of life, health status and self-esteem and lower activity impairment and functional impairment compared to undiagnosed symptomatic ADHD adults. These results highlight the need for increased ADHD awareness and diagnosis in the adult population.

PREDICTING ATTENTION DEFICIT HYPERACTIVITY DISORDER AND POSTTRAUMATIC STRESS DISORDER IN PATIENTS WITH A CONCUSSION HISTORY

Lead Author: Melissa Furtado, B.Sc.
Co-Author(s): Leena Anand, BA, Rosaria Sara Armata, BSc, Irvin Epstein, M.D., FRCPC; Isaac Szpindel, M.D., Catherine Cameron, M.D., CCFP, Martin A. Katzman, M.D., FRCPC

SUMMARY:

Recent scientific research has highlighted the impact of head trauma, such as concussions, on one's health and functioning, however its significant impact on psychiatric well-being is often overlooked. Symptoms following a concussion may be minor, such that they last a very brief period of time, or they may be severe and endure, which is often referred to as post-concussion syndrome. In turn, resulting impairment may progress without receiving appropriate treatment and potentially be the result of undetected psychiatric disorders. Individuals (n=610) referred to the START Clinic for Mood and Anxiety Disorders, a tertiary care clinic located in Toronto, completed a series of self-administered questionnaires, which included a Medical Information Questionnaire. On the Medical Information Questionnaire, individuals were asked as to whether or not they had previously sustained a head injury that resulted in a loss of consciousness or that produced lingering symptoms. Furthermore, psychiatric diagnoses for all patients during intake were confirmed by consensus between the MINI International Neuropsychiatric Interview Plus 5.0.0 (MINI

Plus) and treating physician. Analysis of variance and t-tests were performed in order to examine the relationship between concussions and psychiatric diagnoses. Statistical findings indicated that concussions served as a statistically significant predictor for Attention Deficit Hyperactivity Disorder (ADHD; p=0.008) and Posttraumatic Stress Disorder (PTSD; p=0.002), as well as comorbid ADHD and PTSD (p=0.006). Furthermore, concussions were present in 22.7%, 28.6%, and 38.9% of the ADHD, PTSD, and comorbid patients, respectively. These results demonstrate the significant impact of concussions on psychiatric health, specifically serving as a predictive risk factor for the development of ADHD and/or PTSD. A considerable amount of focus has been placed upon the potential association between major depression and concussions. However, these findings indicate that symptomatology that may initially appear to be consistent with a depressive diagnosis, is rather overlapping symptomatology of undetected ADHD and/or PTSD. It is therefore necessary to accurately detect the origin of patient symptomatology and account for all potential predictive factors in order to achieve optimal patient outcome.

EXAMINING ASTHMA AND ITS RELATION TO SOCIAL ANXIETY, AGORAPHOBIA, AND ATTENTION DEFICIT HYPERACTIVITY DISORDER

Lead Author: Melissa Furtado, B.Sc.
Co-Author(s): Rosaria Sara Armata, BSc (Hons), Leena Anand, BA (Hons), Irvin Epstein, BSc, MD, FRCPC, Isaac Szpindel, MD, Catherine Cameron, MD, CCFP, Martin A. Katzman, BSc, MD, FRCPC

SUMMARY:
Asthma is a common respiratory disease caused by the inflammation and obstruction in the lung airways. Research has shown that there is a connection between asthma and psychiatric illnesses, in particular anxiety disorders and Attention Deficit Hyperactivity Disorder (ADHD). The present study analyzed the prevalence of psychiatric diagnoses among asthmatic patients. Data was collected from 588 intake assessments at the START Clinic for Mood and Anxiety Disorders to examine patient psychiatric and medical history. Patients completed a series of self-administered questionnaires, which included a Medical Information Questionnaire. On the Medical Information Questionnaire, patients were asked whether or not they suffered from asthma. The MINI International Neuropsychiatric Interview 5.0.0 Plus (M.I.N.I. Plus) was used by the treating psychiatrist to formulate patient diagnoses. Analysis of variance and t-tests were used to assess the relationship between patient diagnoses and the occurrence of asthma. Results showed that asthma was present in 15.7% of patients with Social Anxiety Disorder, 26.7% with Agoraphobia and 25.2% with ADHD. Statistical findings indicated that asthma served as a statistically significant predictor for Social Anxiety Disorder ($F=4.01$; $p<.05$), Agoraphobia ($F=5.51$; $p<.05$), and ADHD ($F=5.04$; $p<.05$). The findings demonstrated that asthma is a predictive risk factor for the development of Social Anxiety Disorder, Agoraphobia and ADHD compared to other mental health illnesses. There is evidence showing that there are similar inflammatory mechanisms and neurotransmitters associated with asthma, anxiety disorders, and ADHD as well as meditating behavioural factors that play a role in both having asthma and theses psychiatric illnesses. As such, it is crucial to understand how these illnesses interplay with one another in terms of treatment and management, in order to increase quality of life for the patient.

DASOTRALINE FOR THE TREATMENT OF ATTENTION-DEFICIT/HYPERACTIVITY DISORDER: A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED TRIAL IN ADULTS

Lead Author: Kenneth S. Koblan, M.D.
Co-Author(s): Seth C. Hopkins, Ph.D., Kaushik Sarma, M.D., Fengbin Jin, Ph.D., Robert Goldman, M.D., Scott H. Kollins, Ph.D., Antony Loebel, M.D.

SUMMARY:
Introduction: Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder characterized by symptoms of inattention, hyperactivity and impulsivity. ADHD has an early onset, but frequently persists, with a prevalence estimate of 4% in adults. Dasotraline is a novel compound that is a potent inhibitor of dopamine and norepinephrine transporters, and achieves stable plasma concentrations with once-daily dosing. The primary objective of the current study was to evaluate the efficacy of dasotraline for the treatment of adult patients with ADHD. Secondary objectives were to evaluate the safety of dasotraline, and to assess the relationship between the plasma concentrations of dasotraline, improvement in efficacy measures, and plasma concentrations of 3,4-dihydroxyphenylglycol (DHPG).
Methods: Adult outpatients meeting DSM-IV-TR criteria for ADHD (N=341) were randomized to 4 weeks of double-blind, once-daily treatment with dasotraline 4 mg/d, 8 mg/d, or placebo. The primary efficacy endpoint was change from baseline at Week 4 in the ADHD Rating Scale, Version IV (ADHD RS-IV) total score. Secondary efficacy endpoints included the Clinical Global Impression, Severity (CGI-S) scale, modified for ADHD symptoms.
Results: Least squares (LS) mean improvements at Week 4 in ADHD RS-IV total score were significantly greater for dasotraline 8 mg/d versus placebo (-13.9 vs -9.7; P=0.019), and non-significantly greater for 4 mg/d (-12.4; P=0.076). The LS mean improvements in modified CGI-S were significantly greater at Week 4 for dasotraline 8 mg/d versus placebo (-1.1 vs -0.7; P=0.013), and for 4 mg/d versus placebo (-1.1 vs -0.7; P=0.021). The most frequent adverse events reported were insomnia, decreased appetite, nausea, and dry mouth. Discontinuations due to treatment-emergent adverse events were 11.2% and 29.7% of patients in 4 mg/d and 8 mg/d treatment groups, respectively. No evidence of drug liking was observed on the Drug Effects Questionnaire for either dose of dasotraline, nor was any drug misuse or diversion detected through the Abuse Potential Monitoring Plan. In addition, no signs or symptoms of withdrawal were observed on the Physician Withdrawal Checklist for either dose of dasotraline. For the 4 mg/d and 8 mg/d doses, mean dasotraline plasma levels increased during the first 2 weeks of treatment, and then plateaued at Weeks 3 and 4. Plasma concentrations of DHPG decreased in the first week of treatment for both dasotraline doses, and then plateaued at Weeks 3 and 4.
Conclusions: The results of this study found once-daily dosing with dasotraline, a novel, long-acting dopamine and norepinephrine reuptake inhibitor, to have statistically and clinically significant effects in adults with ADHD. Dasotraline was generally well-tolerated, with higher rates of insomnia observed at 8 mg/d. Further evaluation of the clinical utility of dasotraline in ADHD is warranted.
NCT01692782
Sponsored by Sunovion Pharmaceuticals Inc.

ASSESSMENT OF HUMAN ABUSE POTENTIAL OF DASOTRALINE COMPARED TO METHYLPHENIDATE AND PLACEBO IN RECREATIONAL STIMULANT USERS

Lead Author: Kenneth S. Koblan, M.D.
Co-Author(s): Seth C. Hopkins, Ph.D., Kaushik Sarma, M.D., Nadia Senmartin, Naama Levy-Cooperman, Ph.D., Kerri A. Schoedel, Ph.D., Antony Loebel, M.D.

SUMMARY:
Introduction: Dasotraline is a novel dopamine and norepinephrine reuptake inhibitor with slow absorption/elimination

permitting stable plasma concentrations with once-daily dosing. Dasotraline is currently in development for the treatment of ADHD at doses up to 8 mg/d. The aim of this study was to evaluate the abuse potential of dasotraline. Based on its pharmacologic and pharmacokinetic profile, it was hypothesized that dasotraline would have less drug liking than the psychostimulant methylphenidate.
Methods: Recreational stimulant users (N=48) were enrolled who reported recurrent, non-therapeutic use (â‰¥10 in lifetime) of a CNS stimulant; and who reported, in the 12 weeks prior to Screening, at least one use of a CNS stimulant, and separate use of cocaine. To qualify for enrollment, subjects received single doses of either 60 mg MPH or matching placebo in a randomized, double-blind crossover manner, separated by approximately 24 hours, and were only eligible for study participation if they were able to discriminate between MPH and placebo. Qualified subjects were then randomized, in a 6-period, double-blind, double-dummy, active-controlled, crossover Williams square design, to receive single doses of dasotraline 8 mg, 16 mg, and 36 mg, MPH 40 mg and 80 mg, and placebo. A washout period between each test dose was at least 21-days. Drug effects were assessed over 72 hours postdose using standard 100 mm visual analog scales (VAS) to measure drug Liking and additional subjective effects. The primary endpoint was Emax on Drug Liking VAS and the Hochberg-Benjamini procedure was used to control for Type I error arising from multiple treatment comparisons.
Results: Both doses of MPH were associated with significantly greater VAS-drug liking scores compared with placebo (P<.001 for both comparisons), thus validating assay sensitivity. Both doses of MPH demonstrated significantly greater VAS-drug liking scores compared with all 3 doses of dasotraline at the time of maximal effect (Emax). All VAS-drug liking comparisons between the 3 doses of dasotraline and placebo were non-significant. Dasotraline doses of 8 mg and 16 mg were not associated with differences from placebo in most secondary subjective measures of drug effect and were associated with a similar incidence of adverse events (AEs) as placebo. A greater number of AEs and negative subjective effects (VAS Emin, p<0.004 vs. placebo) were observed at 36 mg dasotraline. Among potentially abuse-related AEs, incidence with dasotraline was lower than with methylphenidate.
Conclusions: The results of this study in recreational stimulant users found single doses of dasotraline, up to a dose of 36 mg, to be associated with no drug liking, and minimal other subjective effects observed in drugs with abuse potential. These findings are consistent with the pharmacologic and PK profile of dasotraline, and suggest that it is unlikely to be recreationally abused.
Supported by Sunovion Pharmaceuticals Inc.

A PHASE III, 6-WEEK, OPEN-LABEL, DOSE OPTIMIZATION STUDY OF HLD200 IN CHILDREN WITH ATTENTION-DEFICIT HYPERACTIVITY DISORDER

Lead Author: Mary Ann A. McDonnell, M.S.N., Ph.D.
Co-Author(s): Ann Childress, MD, Sharon Wigal, PhD, Scott Kollins, PhD, Norberto J. DeSousa, Randy Sallee, MD, PhD

SUMMARY:

Introduction: Attention Deficit Hyperactivity Disorder (ADHD) is a common childhood disorder that can persist throughout adolescence and adulthood. Several long-acting attention-deficit hyperactivity disorder (ADHD) stimulant formulations utilize methylphenidate (MPH) in different controlled-release drug delivery platforms. Despite improvements with drug delivery systems of MPH, early morning functioning (EMF) before school remains an issue for

many children with ADHD, and their parents. HLD200 incorporates MPH into a novel delayed- and controlled-release drug delivery platform, allowing for nighttime dosing to control early morning ADHD symptoms and symptoms throughout the following day. Methods: This was a 6-week open label, dose optimization phase for an 11-week trial (N=43). Optimal daily dose and evening dosage administration time were assessed and are reported here (study visits 2-8). Males and females with ADHD, age 6-12, were enrolled. Subjects had current or prior response on MPH and no other major medical condition. During week-1 (v2-v3) of dose optimization, subjects initiated HLD200 at their previous MPH dose equivalent or approximately 1.4 mg/kg HLD200 at investigator discretion. Five subsequent weekly dose adjustments determined: a) optimal daily dose, and b) optimal evening dosage administration time; prior to the start of double-blind, placebo-controlled test phase at the end of visit 8. This analysis will report the ADHD-RS-IV, BSFQ and PREMB-R results for the dose optimization period. Results: Forty-three subjects were included in this analysis including 20 girls and 23 boys. Two-tailed, paired sample t-tests were used for all statistical comparisons. The mean starting dose at Visit 2 was 33.02 mg (SD = 17.93) and the mean optimal dose achieved was 65.58 mg (SD = 24.81) at Visit 8 ($p<0.0001$). No statistically significant change in evening administration time was measured; at Visit 2 the mean time was 9:00 PM Â± 0 minutes and 8:56 PM Â± 19.8 minutes at Visit 8 ($p = 0.18$). Mean ADHD RS-IV scores (Â± SD) for Visit 2 were 38.23 Â± 8.90 compared to mean Visit 8 scores of 12.51 Â± 6.62 ($p<0.0001$). Mean BSFQ scores (Â± SD) for Visit 2 were 36.21 Â± 13.31 compared to mean Visit 8 scores of 10.12 Â± 7.25 ($p<0.0001$). DPREMB-R AM and PM scores (Â± SD) also showed statistically significant differences, with an AM mean of 4.91 Â± 2.42 at Visit 2 and 1.21 Â± 1.21 at Visit 8 ($p<0.0001$) and a PM mean of 15.14 Â± 5.91 at Visit 2 and 7.65 Â± 5.68 at Visit 8 ($p<0.0001$). Conclusions: Initial results from this 6-week dose optimization phase indicate that when taken at night before bedtime, HLD200 produces statistically significant reductions in early morning ADHD symptoms as well as symptom control throughout the day, as measured by the ADHD-RS-IV, BSFQ and DREMB-R. Full results from this exploratory Phase III trial are forthcoming.

RANDOMIZED, DOUBLE-BLIND, ACTIVE- AND PLACEBO-CONTROLLED TRIALS OF LISDEXAMFETAMINE IN ADOLESCENTS WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER

Lead Author: Glen Frick, M.D.
Co-Author(s): Peter Nagy, M.D., Ann C. Childress, M.D., Glen Frick, M.D., Ph.D., Brian Yan, Ph.D., Lisa Politza, B.S., Steven Pliszka, M.D.

SUMMARY:
Introduction: Two randomized controlled studies (1 flexible-dose; 1 fixed-dose) compared the efficacy and safety of lisdexamfetamine dimesylate (LDX) and osmotic controlled-release methylphenidate (OROS-MPH) in adolescents with attention-deficit/hyperactivity disorder (ADHD).
Hypothesis: Ho: LDX = OROS-MPH ADHD-RS-IV total score change; Ha: LDX â‰ OROS-MPH ADHD-RS-IV total score change.
Methods: Eligible adolescents (13â€“17 yrs) met ADHD DSM-IV-TR diagnostic criteria and had a baseline ADHD-RS-IV total score â‰¥28. Study 1 was an 8-week flexible-dose study (30â€“70 mg LDX; 18â€“72 mg OROS-MPH; placebo [PBO]); study 2 was a 6-week forced-dose titration study (70 mg LDX; 72 mg OROS-MPH; PBO). Change from baseline to week 8 (study 1) or week 6 (study 2) on ADHD-RS-IV total score (primary efficacy endpoint) was assessed with mixed-effect models for repeated measures; Clinical Global Impressionsâ€“Improvement (CGI-I) was the key secondary efficacy endpoint. Safety

assessments included adverse events (AEs) and vital signs.
Results:The safety and full analysis sets, respectively, included 459 (PBO, 91; LDX, 184; OROS-MPH, 184) and 452 (PBO, 89; LDX, 179; OROS-MPH, 184) participants in study 1 and 547 (PBO, 110; LDX, 218; OROS-MPH, 219) and 532 (PBO, 106; LDX, 210; OROS-MPH, 216) participants in study 2. In studies 1 and 2, respectively, LS meanÂ±SEM changes from baseline ADHD-RS-IV total score were â€“13.4Â±1.19 and â€“17.0Â±1.03 for PBO, â€“25.6Â±0.82 and â€“25.4Â±0.74 for LDX, and â€“23.5Â±0.80 and â€“22.1Â±0.73 for OROS-MPH. In both studies, LDX and OROS-MPH were statistically superior to PBO (LS meanÂ±SEM differences vs PBO for studies 1 and 2, respectively: â€“12.2Â±1.45 and â€“8.5Â±1.27 for LDX; â€“10.1Â±1.43 and â€“5.1Â±1.27 for OROS-MPH; all P<0.0001). The LS meanÂ±SEM change was statistically greater with LDX than OROS-MPH in the fixed-dose study (study 2: â€“3.4Â±1.04; P=0.0013) but not the flexible-dose study (study 1: â€“2.1Â±1.15; P=0.0717). CGI-I scores of 1 or 2 (much/very much improved) were reported in 34.8% and 50.0% of PBO, 83.1% and 81.4% of LDX, and 81.0% and 71.3% of OROS-MPH participants in studies 1 and 2, respectively (all Pâ‰¤0.0002 vs PBO). CGI-I was significantly greater with LDX than OROS-MPH in the fixed-dose study (study 2: P=0.0188) but not the flexible-dose study (study 1: P=0.6165). In studies 1 and 2, respectively, treatment-emergent AEs (TEAEs) were reported in 63.7% and 44.5% of PBO, 83.2% and 66.5% of LDX, and 82.1% and 58.9% of OROS-MPH participants. Consistent with known effects of LDX and OROS-MPH, TEAEs occurring in â‰¥10% of participants were decreased appetite and headache (LDX and OROS-MPH in both studies), weight decreased (study 1: LDX and OROS-MPH; study 2: LDX), and irritability (study 1: LDX).
Conclusions: LDX was statistically superior to OROS-MPH in a forced-dose design but not in a flexible-dose design. Safety and tolerability profiles of LDX and OROS-MPH were consistent with those in previous studies. (Sponsored by Shire Development LLC)

GENDER DIFFERENCES IN THE IMPACT OF ER DEXMETHYLPHENIDATE AND MIXED AMPHETAMINE SALTS AT DIFFERENT DOSAGES ON THE SLEEP OF CHILDREN WITH ADHD

Lead Author: Jose A. Santisteban, M.B.B.S., M.Sc.
Co-Author(s): Mark A. Stein, Ph.D., Reut Gruber, Ph.D.

SUMMARY:

Introduction. Attention-Deficit/Hyperactivity Disorder (ADHD) is characterized by impulsivity, hyperactivity, and inattention, which affects 5-10% of school-age children. The first-line treatments for ADHD are stimulant medications, such as methylphenidate and amphetamine. These medications are highly effective, but not always tolerated. Sleep side effects, such as insomnia, can lead to treatment discontinuation. They are reported for both methylphenidate and amphetamine stimulants and are usually, but not always, mild and transitory(1). MAS increase norepinephrine (NE) and dopamine (DA) levels by increasing release as well as blocking reuptake, in contrast to d-MPH which only blocks reuptake, and hence could affect sleep differently. Males and females tend to present ADHD symptoms differently(2). Gender has an effect on sleep maturation and studies that include only males report different results in sleep measures compared to those that include males and females(3). However, no studies have been conducted to compare objective sleep measures between males and females during ADHD treatment. We sought to examine the effect of gender on objective measures of sleep during treatment of ADHD with extended-release

(ER) dexmethylphenidate (d-MPH) and ER mixed amphetamine salts (MAS) at different dosages.

Methods: Children aged 10-17 (n=37), of which 27 (73%) were male and 10 (27%) were female, participated in a double-blind crossover study comparing two stimulants (extended release D-MPH, MAS) at three doses (10, 20, 30 mg) and placebo. Each treatment session lasted one week, for a total protocol duration of eight weeks. Sleep was assessed in all conditions using actigraphy and sleep questionnaires.

Results: There was a significant interaction between medication and gender on sleep duration ($F=4.464$, $p<0.05$), with girls having shorter sleep durations during MAS treatment compared to d-MPH ($p<0.05$). No significant effects between medications were found in males. There were no significant interactions between gender and dosage.

Conclusions: Regarding sleep side effects in stimulant treatment of ADHD, gender should be considered in the choice of medication. Future studies of ADHD treatment should include both males and females as there may be different responses to stimulant medication.

CLASSIC ADHD, OR IS IT? IMPACT OF IMMUNE AND INFLAMMATORY DYSFUNCTION ON ATTENTION - A CASE REPORT

Lead Author: Christina Shayevitz, M.D.
Co-Author(s): Michael Goldstein, M.D., Michael Serby, M.D.

SUMMARY:

Background: Attention-deficit hyperactivity disorder (ADHD) continues to be a complex multifactorial disorder with unclear pathophysiology, although it is highly heritable. The prevalence of ADHD ranges from 2 to 18% in the US, with an average annual increase of 5% per year. It is a major public health burden because it is a chronic neurobehavioral disorder that affects several aspects of life, including social relationships, work performance, self-esteem and academic achievements, in both childhood and adulthood. In addition, the current treatment of ADHD sometimes fails in achieving full symptom reduction or relief of associated consequences and comorbidities. Recently, more attention has been focused on possible inflammatory and immunologic etiologies contributing towards some of the symptoms of ADHD. We report on the treatment of a woman who was diagnosed and treated for ADHD as a child with good effect, but suffered recurrence of symptoms as an adult.

Case report: Mrs. A is an 18 year old Caucasian female with past psychiatric history of ADHD who was referred to her new psychiatrist to continue her stimulant treatment due to relocation for start of college. She presented with the chief complaint of "I can't concentrate and my energy is low". Upon entering her freshman year in college, she noticed a precipitous drop in her ability to attend in lectures and to complete tasks, as well as feeling "foggy in the head". She noted some of the symptoms were not the same as the symptoms of ADHD she had as a child, especially her chronic fatigue.

Result: Complete endocrine, immunologic, neurologic, and physical exams were done. Patient was found to have vitamin D and B12 deficiency, hypothyroidism, elevated EBV titers, celiac intolerance, sleep apnea, Raynaud's disease and Behcet's syndrome. A multidisciplinary approach was initiated, including anti-inflammatory agents, vitamin supplements, dietary changes, exercise, air filter, and individual and family therapy, which effectively resulted in remission of ADHD symptoms. Stimulants were reduced to use only as needed prior to exams.

Discussion: We review the psychiatric literature on the relationship between

inflammatory and immunologic dysfunction, and ADHD. We discuss how a pro-inflammatory state affects cognition and further examine the evidence for the role of anti-inflammatory agents and dietary changes in improving attention.

POOLED ANALYSIS OF TWO DOUBLE-BLIND, PLACEBO-CONTROLLED, RANDOMIZED ATOMOXETINE TRIALS IN ADULTS WITH ADHD TREATED FOR UP TO 6 MONTHS

Lead Author: Linda Wietecha, B.S.N., M.S.
Co-Author(s): Shufang Wang, Ph.D., Joel Young, MD, Elias Sarkis, MD, Andrew Buchanan, B.S. Pharm, Robert L. Findling, MD, MBA

SUMMARY:
Objective: Changes in the magnitude of efficacy throughout approximately 6 months of atomoxetine treatment were evaluated in adults with attention-deficit/hyperactivity disorder (ADHD) from two similarly designed randomized, double-blind, placebo-controlled atomoxetine studies.
Methods: Patients in the pooled analysis were randomized to treatment with atomoxetine (n=518) or placebo (n=485) for up to 26 weeks. Daily atomoxetine doses between studies ranged from 25 mg to 100 mg, with a target daily dose of 80 mg. Two measures were examined to evaluate the efficacy of atomoxetine: the Conners' Adult ADHD Rating Scale-Investigator Rated (CAARS) Total ADHD Symptoms score (pooled analysis primary measure) and the Adult ADHD Investigator Symptom Rating Scale (AISRS) total score (pooled analysis secondary measure). The change from baseline measure was analyzed using mixed-model repeated measures (MMRM). The MMRM analysis included treatment, investigator, visit, treatment-by-visit interaction, and baseline score of the outcome measure as predictors. The least squares mean (LSM) change and difference and Cohen's d effect size (ES) were calculated at 1, 2, 4, 8, 12, 16, 22, and 26 weeks.
Results: In the 2 studies, the atomoxetine mean daily doses were 84 mg and 90 mg. At one week, the LSM change on the CAARS Total ADHD Symptoms score from baseline (baseline score=35 for both groups) in atomoxetine-treated patients was -7.53 compared with -5.32 in placebo-treated patients and the LSM difference of -2.21 was statistically significant (p=.002). Decreases on the CAARS for atomoxetine-treated patients continued to be statistically significantly greater compared with placebo-treated patients at every timepoint. By 4 weeks, the LSM change on the CAARS for the atomoxetine group was -13.19 and for placebo group was -8.84, with an LSM difference of -4.35 (p<.0001). By 26 weeks, the LSM change was -15.42 in the atomoxetine group and -9.71 in the placebo group, with an LSM difference of -5.71 (p<.0001). A small effect size, evident by 4 weeks (ES=0.45), was persistent throughout subsequent timepoints. By 26 weeks, the ES was moderate (ES=0.52). Similar results were demonstrated on the AISRS total score on LSM change and difference as well as on effect size.
Conclusions: Atomoxetine treatment in adults with ADHD was effective in decreasing ADHD symptoms early in treatment, with decreases continuing throughout the duration of the studies. Small effect sizes were evident after 4 weeks of atomoxetine treatment, and the magnitude of efficacy was maintained with moderate effect sizes achieved by 6 months of treatment. The pooled analysis supports previously reported individual study results showing sustained symptom reduction and increased effect size over longer-term treatment.

FRAMINGHAM RISK SCORE FOR STROKE IS ASSOCIATED WITH NEUROCOGNITIVE IMPAIRMENT IN OLDER ADULTS WITH HIV DISEASE

Lead Author: Alan T. RodrÃguez Penney, B.S.

Co-Author(s): Jennifer E. Iudicello, Ph. D., Ronald J. Ellis, M.D., Ph. D., Scott L. Letendre, M.D., Steven Paul Woods, Psy. D., and The HIV Neurobehavioral Research Program (HNRP) Group

SUMMARY:
Cardiovascular disease (CVD) risk factors are elevated in HIV disease and are thought to play a prominent role in the expression of neurocognitive impairment among older HIV-infected adults. This study sought to determine the association specifically between Framingham Risk Score for Stroke (FRS-S) and HIV-associated neurocognitive disorders (HAND) across the lifespan. Participants included 64 HIV+ individuals with HAND (43 aged 50 and older, 21 aged 40 and younger) and 105 HIV- persons (61 older and 44 younger). HAND was diagnosed according to Frascati criteria and operationalized using a comprehensive research neuropsychological, psychiatric, and medical assessment. Multivariable regression controlling for hepatitis C infection, psychiatric comorbidities, and other demographics revealed a significant interaction between age and HIV on FRS-S (p=.02). Planned post-hoc tests showed that the older HIV+ group had higher FRS-S scores than the older HIV- participants (p=.002), but there was no serostatus effect among the younger cohort (p=.43). Older HIV+ adults with Minor Neurocognitive Disorder had slightly higher FRS-S scores than those with Asymptomatic Neurocognitive Impairment (p=.06). Within the older HIV+ group, higher FRS-S scores were most strongly related to poorer scores on measures of delayed verbal memory (ps<.05). Findings indicate that cerebrovascular risk factors may play a differential role in the expression of HAND across the lifespan. Future neuroimaging, biomarker, and neuropathological studies may shed light on the specific mechanisms of vascular injury in older HIV+ persons.

NEW ONSET ANXIETY DISORDER IN A PATIENT WITH POSSIBLE NEUROCYSTICERCOSIS

Lead Author: Andrea Bulbena
Co-Author(s): Norma Ramos Dunn MD
Ronnie Gorman Swift MD

SUMMARY:
Neurocysticercosis is the most common parasitic CNS (central nervous system) infection in humans, occurring endemically in developing countries of Asia, Africa, Latin America, Central Europe and in urban areas of developed countries among certain ethnic groups. Parenchymal brain calcifications may be found after a neurocysticercosis infection and have been implicated in numerous neuropsychiatric symptoms. We report a case of an adult male with a new onset anxiety disorder and brain imaging showing a right thalamic calcification. Based on the symptoms, history and results from head CT (computerized tomography) scan, we believe that our patient suffered from neurocysticercosis. Increasing immigration and availability of world traveling have made neurocysticercosis an important infection to consider in USA.

EFFECTS OF VILAZODONE ON SEXUAL FUNCTION IN PATIENTS WITH GENERALIZED ANXIETY DISORDER: A POOLED ANALYSIS OF 3 RANDOMIZED CONTROLLED TRIALS

Lead Author: Anita H. Clayton, M.D.
Co-Author(s): Suresh Durgam, M.D., Xiongwen Tang, Ph.D., Adam Ruth, Ph.D., Carl P. Gommoll, M.S.

SUMMARY:
Introduction: Generalized anxiety disorder (GAD) is a prevalent mental illness characterized by persistent high levels of worry and anxiety. Reduced sexual function is commonly seen in patients with anxiety, which can both increase overall anxiety levels and reduce quality of life. Unfortunately, many medications that are commonly prescribed for GAD (eg,

selective serotonin reuptake inhibitors [SSRIs] and benzodiazepines) may also negatively impact sexual function, complicating the treatment of this disorder. Vilazodone (VLZ) is a SSRI and 5-HT1A receptor partial agonist approved for the treatment of major depressive disorder (MDD) in adults. In MDD studies, vilazodone was associated with low adverse impact on sexual function. Vilazodone has shown efficacy in the treatment of GAD in 3 positive double-blind placebo (PBO)-controlled trials. Post hoc analyses of pooled data from these trials evaluated the effects of vilazodone on sexual function in patients with GAD.

Methods: The 3 GAD studies were pooled for analysis: 1 fixed-dose study of VLZ 20 mg/d and 40 mg/d (NCT01629966) and 2 flexible-dose studies of VLZ 20-40 mg/d (NCT01766401, NCT01844115). All VLZ doses were combined for analyses. Sexual functioning was assessed using the Changes in Sexual Function Questionnaire (CSFQ). Evaluation of sexual function was conducted on the CSFQ analysis population, defined as all patients with CSFQ baseline and â‰¥1 postbaseline assessments. Analyses included mean change from baseline to end of treatment (EOT) in CSFQ total scores and percentage of patients with sexual dysfunction at baseline and EOT. Sexual dysfunction was defined as CSFQ score â‰¤47 for men and â‰¤41 for women. All statistics were descriptive in nature; no inferential statistics were performed to compare treatment groups.

Results: The pooled CSFQ analyses population comprised 577 PBO patients and 796 VLZ patients; 66% of the patients were women. Mean CSFQ scores at baseline for men were 50.1 (PBO) and 49.0 (VLZ); mean baseline CSFQ scores in women were 42.2 (PBO) and 41.7 (VLZ). Baseline sexual dysfunction was seen in 36% (PBO) and 40% (VLZ) of men, and 47% (PBO) and 49% (VLZ) of women. Improvements in CSFQ scores were seen for men and women in both treatment groups. Mean CSFQ score change from baseline to EOT in men was +1.7 (PBO) and +0.9 (VLZ); for women, mean CSFQ score changes were +1.2 (PBO) and +1.4 (VLZ). In men with baseline sexual dysfunction, 40.6% of PBO patients and 35.7% of VLZ patients improved to normal sexual function at EOT. In women with sexual dysfunction at baseline, 24.9% of PBO patients and 34.9% of VLZ patients improved to normal sexual function at EOT.

Conclusions: Patients with GAD had a high prevalence of sexual dysfunction at baseline. Treatment with VLZ and PBO was associated with mean improvements in sexual function in both men and women. Supported by funding from Forest Laboratories, LLC, an affiliate of Actavis, Inc.

ONYCHOPHAGY (NAIL BITING):A NEW APPROACH TO CHRONIC NAIL AND SKIN BITING AS PART OF ANXIETY SPECTRUM DISORDERS: 5-HTP AS A COMPULSION CONTROL FACTOR

Lead Author: Cristian Y. Herrera, M.D., Ph.D.
Co-Author(s): Juan Ybarra M.D., Maria Dalmau, Helio Herrera

SUMMARY:

INTRODUCTION

Chronic Onychophagy as part of severe anxiety disorders is often refractory to most types of treatment strategies.
We observed that in spite of using complex combined psycho pharmachologic treatments for severe anxiety spectrum disorders, nail biting did not improve or very little so.
Therefore we conceptualized this sign as a moderate compulsive self mutilating pattern, probably related to low serotonin activity, that in some cases correlated with very low 5-HT blood levels (mean<18 micrograms).

We avoided CSF 5-HT and 5-HIAA or 24 h urine as per ethical or cumbersome reasons.
As 5-HTP vs Tryptophane reaches the brain across the BBB, minimizing its peripheral metabolism, we chose this Serotonin precursor (5-HTP) to enhance the desired hypothetic anti compulsive effect and to improve tolerance through a mainly CNS action.

OBJECTIVES

To identify patient subgroups of different age groups that show refractory or partial responses to chronic nail biting.
To develop effective treatment strategies that may improve both Onychophagy and other anxiety related symptoms if still present.
To try to avoid as much as possible severe side effects as serotonergic syndrome (1 patient showed mild signs of it) or gastrointestinal reactions as diarrhea or cramps, nightmares, etc, described elsewhere, by using a very slow titration of 5-HTP dosages starting at 12.5mg. daily.

METHOD

12 patients: 5 children , 3 adolescents and 4 adult were recruited.
In 2 of the children nail biting included toe nails.
1 woman peeled off the skin around her nails.
All had shortened at least half of their normal nail length
When possible (9 out of 12 patients) had lab work to determine 5-HT blood levels before and after 5-HTP supplements.
5-HTP slow augmentation added at least to part of their previous treatments proven non effective enough for Onychophagy for several weeks or months.

RESULTS

Mean blood level of 5-HT: <18 micrograms +- 12 (40-200 normal range) prior to 5-HTP supplements.
Significant increase after at least 12 weeks of large doses of 5-HTP (average 250 mg).
11 out of 12 patients either stopped or diminished markedly their nail biting (as per a quasi normal length)
1 did not tolerate 5-HTP.

CONCLUSIONS

Onychophagy is a socially evident, shameful, worrying and stigmatizing sign of moderate to severe anxiety that affects self image and self esteem and that when it is not self limited it is difficult to treat and it is as well often overseen by Mental Health Professionals. Therefore we consider this new approach a possibly valuable tool to foster QOL (Quality Of Life) of these patients. Although it may seem a rather trivial sign; more sound and better controlled research could bring light to its relationship to 5-HT anxiety spectrum disorders, and other mechanisms, etc.
As with smokers it is hard to believe that present nail biting does not coexist with some moderate degree of anxiety or at least inner tension.

POST HOC ANALYSES OF ANXIETY MEASURES IN ADULT PATIENTS WITH GENERALIZED ANXIETY DISORDER TREATED WITH VILAZODONE

Lead Author: Arif Khan, M.D.
Co-Author(s): Suresh Durgam, M.D., Xiongwen Tang, Ph.D., Adam Ruth, Ph.D., Maju Mathews, M.D., Carl P. Gommoll, M.S.

SUMMARY:

Introduction:Generalized anxiety disorder (GAD) is characterized by a broad range of psychic and somatic symptoms. Many patients do not adequately respond to current treatments and new medications are needed to improve the management of GAD. Vilazodone (VLZ), a selective serotonin reuptake inhibitor and 5-HT1A

partial agonist approved for the treatment of major depressive disorder in adults, is being investigated for the treatment of GAD. In 3 double-blind, randomized, placebo (PBO)-controlled GAD trials, VLZ was superior to PBO on the primary efficacy outcome, mean change in total score on the 14-item Hamilton Anxiety Rating Scale (HAMA). A pooled analyses evaluated the efficacy of VLZ across GAD symptom domains.
Methods:The 3 GAD studies were pooled for analysis: 1 fixed-dose study of VLZ 20 mg/d and 40 mg/d (NCT01629966) and 2 flexible-dose studies of VLZ 20-40 mg/d (NCT01766401, NCT01844115). All VLZ doses were combined for analyses. Post hoc analyses evaluated mean change from baseline to Week 8 in the HAMA total score, Psychic (items 1-6, 14) and Somatic (items 7-13) Anxiety Subscale scores, and individual HAMA item scores in the intent-to-treat (ITT) population using a mixed-effects model for repeated measures; effect sizes (ES) were estimated using least squares mean differences (LSMDs). HAMA response (â‰¥50% improvement from baseline in total score) and remission (total score â‰¤7) rates and associated odds ratios (OR) were analyzed using a logistic regression model.
Results: The pooled ITT population comprised 618 PBO and 844 VLZ patients. Mean baseline scores on the Psychic (14) and Somatic (10) Anxiety Subscales indicated that generally patients had greater levels of psychic vs somatic anxiety. VLZ- vs PBO-treated patients had significantly greater improvements in HAMA total score (LSMD=-1.83; P<.0001; ES=0.26), Psychic Anxiety Subscale score (LSMD=-1.21; P<.0001; ES=0.28), and Somatic Anxiety Subscale score (LSMD=-0.63; P=.0012; ES=0.19). Significantly greater improvements for VLZ compared with PBO were seen on all HAMA psychic anxiety items (P value range: <.0001 to <.0280; ES range: 0.13 to 0.32) except insomnia. For somatic anxiety items, significantly greater improvements were observed for VLZ vs PBO on all items (P value range: .0005 to .0134; ES range: 0.15 to 0.20) except gastrointestinal symptoms and genitourinary symptoms. The VLZ group relative to the PBO group showed significantly higher rates of HAMA response (47.5% vs 38.7%; P=.0008; OR=1.44) and remission (26.7% vs 20.6%; P=.0061; OR=1.42).
Conclusions:In this post hoc pooled analyses, VLZ patients compared with PBO patients showed significantly greater improvement in HAMA total score, HAMA Somatic and Psychic Anxiety Subscale scores, and on 11 of 14 HAMA items. These results suggest that VLZ showed broad efficacy across the diverse range of psychic and somatic symptoms associated with GAD. Supported by funding from Forest Laboratories, LLC, an affiliate of Actavis Inc.

EFFICACY OF A MINDFULNESS-BASED INTERVENTION FOR SOCIAL ANXIETY DISORDER THAT INTEGRATES COMPASSION MEDITATION AND MINDFUL EXPOSURE

Lead Author: Diana Koszycki, Ph.D.
Co-Author(s): Jennifer Thake, Ph.D., CÃ©line Mavounza, M.A., Jean-Philippe Daoust, Ph.D., Monica Taljaard, Ph.D., Jacques Bradwejn, M.D.

SUMMARY:

Objectives: There is growing interest in the clinical application of mindfulness meditation for diverse psychiatric disorders. In the present study we evaluated the acceptability and initial efficacy of a mindfulness-based intervention adapted for social anxiety disorder (MBI-SAD). The program included elements of the standard MBSR curriculum and was adapted to include psychoeducation about social anxiety, compassion-based meditations to help patients cultivate unconditional kindness and understanding towards themselves, especially in the face of social blunder, failure or inadequacy, and a "mindful exposure" component to help

them respond more mindfully to internal experiences in feared social situations.
Method: Thirty-nine patients were randomized to 12-weekly group sessions of the MBI-SAD (n=21) versus the wait-list (WL) condition (n=18). Primary outcomes included the Liebowitz Social Anxiety Scale (LSAS) administered by blind clinical evaluators and the Social Phobia Inventory (SPIN). Secondary outcomes included the CGI-S, BDI-II, and Social Adjustment Scale-Self-Report (SAS-SR). Changes in mindfulness and self-compassion were evaluated with the Five Facet Mindfulness Questionnaire (FFMQ) and the Self-Compassion Scale-Short version.
Results: At week 12, the MBI-SAD fared better than WL in reducing scores on the LSAS and SPIN (psâ‰¤.0001), with large between-group effect sizes (d=1.78 and 2.05, respectively). Similar results were obtained for the secondary outcomes CGI-S, BDI-II and SAS-SR. The MBI-SAD was superior to WL in enhancing self-compassion and mindfulness, with large effects found for the mindfulness facets observe (d=0.98), describe (d=1.06) and non-judge (d=1.05). Attrition with the MBI-SAD was low, with 86% of patients attending 8 or more of the 12 group sessions.
Conclusions: This trial demonstrates that a MBI that includes elements of self-compassion training and mindful exposure is a promising intervention for SAD. Research is needed to compare this intervention to the gold standard cognitive behavior therapy and to explore if increases in mindfulness and self-compassion mediate the beneficial effects of this intervention on social anxiety symptoms.

TWELVE-MONTH PREVALENCE AND CORRELATES OF ANXIETY DISORDERS IN FINNISH POPULATION - AN ELEVEN-YEAR FOLLOW-UP OF THE HEALTH 2000-2011 SURVEY

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SUMMARY:
Introduction: Mental disorders are the leading cause of disability among middle aged and younger adults, and anxiety disorders are among the most prevalent. Up-to-date information on prevalence changes is needed to plan health care. When estimating prevalence rates, current or last year rates are considered more reliable compared to life-time prevalence estimates due to recall bias when interviewing past symptoms. The aim of the current study was to examine change in prevalence rates and socioeconomic correlations of anxiety disorders in a large general population survey followed up for 11 years.
Methods: In a nationally representative sample (The Health 2000 Study) of Finns aged 30 and above, anxiety disorders were diagnosed with the Composite International Diagnostic Interview (M-CIDI) in 2000 and 2011 (www.health2000.fi) Total number of participants were 8028 (year 2000) and 8 135 (year 2011). The 12-month prevalence of general anxiety disorder (GAD), panic disorder with and without agoraphobia, agoraphobia without panic disorder and social phobia were assessed.
As the CIDI response rates dropped from 75% (2000) to 57% (2011) we used two methods to account for missing data: Multiple imputation (MI) and statistical weighting. The MI utilizes register data on psychiatric symptoms and hospitalizations, and therefore better corrects for the effects of missing data.
Results: The MI-corrected 12-month prevalence for GAD year 2000 was 1.6% (95%CI 1.2-2.0) and 3.9% (3.0-4.8) in 2011. Corresponding figures for agoraphobia without panic disorder were 1.3% (0.9-1.6) and 2.0% (1.2-2.8), for panic disorder with agoraphobia 0.9% (0.6-1.2) and 2.0% (1.1-2.9), for panic disorder without agoraphobia 1.7% (1.3-2.1) and 1.7% (0.9-2.6), for social

phobia 1.4% (1.0-1.7) and 2.4% (1.6-3.1). The trends were relatively similar in men and women and throughout all age groups, except for panic disorder without agoraphobia, where the prevalence increased among men but decreased among women. Prevalence rates calculated using weighting were significantly lower, and the difference between methods increased with increased non-response.
Discussion: In the current study we combined the strengths of register-based approach and nationally representative population based study to investigate changes in prevalence rates of anxiety disorders during an 11-year follow-up. The prevalence rates of all measured anxiety disorders seemed to increase during the follow up, except for panic disorder without agoraphobia among women. MI and weighting gave significantly different results. When the MI and weighting methods were compared in predicting survey data that could be verified from registers (e.g. disability pensions) as outcome variables, MI was found to correct for missingness more accurately than weights. Non-participation of persons with mental disorders lead to unrealistically low prevalence of mental disorders in population-based studies.

VILAZODONE IN PATIENTS WITH GENERALIZED ANXIETY DISORDER: A DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED, FLEXIBLE-DOSE STUDY

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SUMMARY:

Introduction:Generalized anxiety disorder (GAD) is characterized by persistent worries, psychic anxiety, and somatic symptoms; it is one of the most common anxiety disorders in the general population. Treatment options for GAD include selective serotonin reuptake inhibitors (SSRIs) and the 5-HT1A receptor partial agonist, buspirone. Vilazodone (VLZ) is an SSRI and 5-HT1A receptor partial agonist approved for the treatment of major depressive disorder (MDD) in adults. This study evaluated the safety and efficacy of flexibly dosed VLZ in the treatment of GAD.
Methods:This was a multicenter, randomized (1:1), double-blind, parallel-group, flexible-dose study comparing VLZ 20-40 mg/d and placebo (PBO) in patients (age, 18-70 years) with GAD (NCT01766401 ClinicalTrials.gov). Primary and secondary efficacy outcomes were mean change from baseline to Week 8 in the Hamilton Rating Scale for Anxiety (HAMA) and Sheehan Disability Scale (SDS) total score, respectively, analyzed using a mixed-effects model for repeated measures (MMRM) on the intent-to-treat (ITT) population. Safety assessments included adverse events (AEs), laboratory and vital sign measures, and the Changes in Sexual Functioning Questionnaire (CSFQ).
Results:There were 198 PBO patients and 200 VLZ patients in the safety population; 197 PBO patients and 198 VLZ patients were in the ITT population. Significantly greater improvements in HAMA total score from baseline to Week 8 were seen for VLZ vs PBO (LSMD [95% CI], -1.50 (-2.96, -0.04); P=.0438). At Week 8, the mean change from baseline in SDS total score was numerically larger with VLZ (-8.53) vs PBO (-7.12), but the difference was not statistically significant (P=.0868). On additional efficacy parameters, significantly greater improvements for VLZ vs PBO were seen on the SDS Work/School item (P=.0375) and the HAMA Psychic Anxiety subscale (P=.0109); numerically greater improvements without statistical separation from PBO were seen on the SDS Social Life and Family Life items, the HAMA Somatic Anxiety subscale, and HAMA Items 1 (anxious mood) and 2 (tension). Treatment-emergent AEs (TEAEs) were reported by 60% of PBO- and 83% of VLZ-treated patients; the majority of TEAEs were

considered to be mild or moderate in severity. TEAEs that were reported in â‰¥5% of VLZ patients and at least twice the rate of PBO were nausea, diarrhea, vomiting, somnolence, and abnormal dreams. No serious AEs were reported in either treatment group. Mean changes in laboratory values, vital signs, and CSFQ scores were low and similar between groups; no patient had a QTcB or QTcF interval increase >500 msec.
Conclusions:In this positive clinical trial in patients with GAD, statistically significant improvement on HAMA total score at Week 8 was seen for VLZ 20-40 mg/d vs PBO. VLZ was generally well tolerated in patients with GAD and no new safety concerns were identified. This study was supported by funding from Forest Laboratories, LLC, a subsidiary of Actavis plc.

A DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED, FLEXIBLE-DOSE STUDY OF VILAZODONE IN PATIENTS WITH GENERALIZED ANXIETY DISORDER

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SUMMARY:

Introduction: Generalized anxiety disorder (GAD) is characterized by pervasive worries that cause psychiatric symptoms, physical symptoms, and functional impairment. Poor remission and high relapse rates support the need for additional treatment options for the 6.8 million US adults with GAD. Vilazodone (VLZ) is a selective serotonin reuptake inhibitor (SSRI) and 5-HT1A receptor partial agonist approved for the treatment of major depressive disorder (MDD) in adults. The objective of this study was to evaluate the safety and efficacy of flexibly dosed VLZ in the treatment of GAD.

Methods: This was a multicenter, randomized (1:1), double-blind, parallel-group, flexible-dose study comparing VLZ 20-40 mg/d and placebo (PBO) in patients (age, 18-70 years) with GAD (NCT01844115 ClinicalTrials.gov). Primary and secondary efficacy outcomes were total score change from baseline to Week 8 on the Hamilton Rating Scale for Anxiety (HAMA) and Sheehan Disability Scale (SDS), respectively, analyzed using a mixed-effects model for repeated measures (MMRM) on the modified intent-to-treat (m-ITT) population. Safety assessments included adverse events (AEs), laboratory and vital sign measures, and the Changes in Sexual Functioning Questionnaire (CSFQ).

Results: The safety and m-ITT populations comprised 404 patients (VLZ=202; PBO=202) and 400 patients (VLZ=200; PBO=200), respectively; 81% of PBO patients and 71% of VLZ patients completed the study. The LSMD (95% CI) versus PBO in Week 8 total scores was statistically significant in favor of VLZ on the HAMA (-2.20 [-3.72, -0.68]; P=.0048) and SDS (-1.89 [-3.52, -0.26]; P=.0236). Statistically significant Week 8 differences for VLZ versus PBO were also seen on each SDS domain score (Work/School: P=.0423; Social Life: P=.0012; Family Life: P=.0036), the HAMA Psychic (P=.0024) and Somatic (P=.0250) Anxiety subscales, and HAMA Anxious Mood (P=.0038) and Tension (P=.0042) items. Treatment-emergent AEs (TEAEs) were reported by 64% of PBO- and 79% of VLZ-treated patients; the majority of TEAEs in both groups were considered to be mild or moderate in severity. TEAEs that were reported in â‰¥5% of VLZ patients and at least twice the rate of PBO were nausea, diarrhea, dizziness, fatigue, ejaculation delayed, and erectile dysfunction. Serious AEs (SAEs) were reported in 3 VLZ patients; none were considered treatment related or resulted in study discontinuation. Mean changes in laboratory values, vital signs, and CSFQ scores were low and similar

between groups; no patient had a QTcB or QTcF interval increase >500 msec.

Conclusion: Statistically significant differences in HAMA and SDS total scores were seen in favor of VLZ over PBO suggesting improvement in anxiety symptoms and functional impairment for VLZ patients in this study. VLZ was generally well tolerated among patients with GAD; no new safety concerns were identified. This study was supported by funding from Forest Laboratories, LLC, an affiliate of Actavis, Inc.

INTOLERANCE OF UNCERTAINTY IN GENERALIZED ANXIETY DISORDER AND MAJOR DEPRESSIVE DISORDER COMORBID WITH GENERALIZED ANXIETY DISORDER

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SUMMARY:

Background: Comorbidity is a term that was first used to refer to patients who had co-occurring mental disorders. Comorbid disorders are especially common in patients with generalized anxiety disorder (GAD), which has experts in the field investigating whether this disorder is an independent disorder. Of the disorders that are comorbid with GAD, major depressive disorder (MDD) is among the most comorbid, resulting in treatment resistance and a decreased likelihood of remission. There are several symptoms that depict both generalized anxiety disorder and major depressive disorder including worry, poor concentration and sleep difficulty. There is also evidence illustrating that generalized anxiety disorder and major depressive disorder have a shared genetic predisposition. While intolerance of uncertainty (IU) has been studied in patients with GAD, its role in GAD comorbid with MDD has not been well studied. The relationship of IU to GAD+MDD may, in part, explain the poorer treatment outcomes and decreased remission in comorbid individuals. Cognitive manifestations of both GAD and MDD may be associated with an individual's limited tolerance of uncertainty with worry and GAD severity having been shown to be related to intolerance of uncertainty (IU). This study was initiated to examine the role IU plays on patients with GAD+MDD and to assess for specific factors in the IU scale (IUS), which could separate GAD vs. GAD+MDD.
Methods: Data from consecutively diagnosed psychiatric referrals (with consensus between treating physician and MINI International Neuropsychiatric Interview 6.0.0) was evaluated using factor analysis to examine for relationships between IUS and diagnosis.
Results: IU was shown to be predictive of GAD, with two factors associated with GAD development: (i) Factor 1 (questions 14, 13, 12, 9, 16, 15, 20, 17, 23, 25, 27, 2, 24, 22, 1, 3) and (ii) Factor 2 (7, 5, 8, 11, 10, 19, 18, 6, 21, 26, 4). However, two different factors were associated with comorbid GAD and MDD: Factor 1 (12, 22, 14, 1, 20, 13, 16, 15, 2, 17, 9) and (ii) Factor 2 (18, 5, 6, 24, 7, 3, 4, 25, 26, 19, 11, 10, 27, 21, 8, 23).
Conclusion: The results from this study suggest that IU is present in both GAD and GAD+MDD, and could be separated on the IUS, suggesting a unique pathway from GAD to MDD. The results also suggest that aspects of uncertainty effect patients with GAD and GAD comorbid with MDD differently. Therefore, uncertainty plays a unique role in patients with GAD compared with patients with both GAD and MDD.

THE RELATIONSHIP BETWEEN SELF-ESTEEM AND IMPULSIVITY IN MOOD DISORDERS

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SUMMARY:
Objective: Among patients with mood disorders, impulsivity is often associated with suicidal and other dangerous behaviors. Greater understanding of the correlates of impulsivity across different mood disorders could be of significant clinical import. The aim of this study is to explore the relationship between self-esteem and impulsivity in mood disordered psychiatric inpatients, and further, how this relationship varies across different types of mood disorders or mood episodes.

Method: Ninety-three (93) subjects (50 bipolar, 36 MDD, and 7 substance-induced mood disorder) 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 from three self-report measures, the Rosenberg Self Esteem Scale (RSES), the Behavioral Inhibition Scale/Behavioral Activation Scale (BIS/BAS), and the Barratt Impulsivity Scale(BIS) were analyzed for this study.

Results: In the whole sample, there was a a significant negative correlation between self-esteem and multiple measures of impulsivity (r= -.237 - -.369). In patients with MDD, self esteem was negatively correlated with BIS Nonplanning Impulsiveness, BAS Drive and BAS Fun Seeking (r= -.340 - -.503). In bipolar patients, self esteem was negatively correlated with BIS Attentional and Nonplanning Impulsiveness (r= -.308 - -.420). The findings were similar across bipolar polarities but strongest among currently manic patients (r= -.405 - -.603).

Discussion: The results above suggest that promoting healthy and positive self-esteem could be one way to address patients who are experiencing manic or depressive episodes. It remains unclear whether poor self-esteem is a result of bipolar impulsivity or a contributor to it (or both). Nonetheless, it is likely that improved self-esteem could contribute to improved health behaviors which might in turn help reduce impulsivity in the context of bipolar episodes.

IMPULSIVITY IN BIPOLAR DISORDER TYPES I, II AND MAJOR DEPRESSIVE DISORDER

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SUMMARY:
Introduction: Increased impulsivity has been associated with mood disorders, in particular bipolar disorder (BP) when compared to controls.Few studies, however, have compared impulsivity between major depressive disorder (MDD) and BP. Furthermore, there has been little research pertaining to the differentiation between levels of impulsivity in BP subtypes, including bipolar type I (BPI) and bipolar type II (BPII). Objectives: To examine differences in impulsivity between BPI, BPII, and MDD. Methods: Participants were recruited from the Mood Disorders Program of the McGill University Health Center in Montreal, Quebec. Data was gathered using structured diagnostic interviews (SCID), family history of psychiatric illness questionnaire and medical chart review. Impulsivity scores were gathered using the Barratt Impulsiveness Scale (BIS); a self-reported questionnaire measuring the attentional, motor, and nonplanning subscales of impulsivity. Linear regressions were conducted to examine the association between type of mood disorder diagnosis and impulsivity in mood disorder subjects. Results: Subjects with BP (I andII), when compared to subjects with MDD scored higher on the BIS total (Unst. B = 5.073, p = .014) as well as on the motor (Unst. B = 2.043, p = .012) and non-planning (Unst. B = 1.998, p = .020) subscales. When the BP subjects were divided into BPI and II groups, the BPII group scored higher on the

BIS total (Unst. B = 10.361, p = .000), as well on the attentional (Unst. B = 2.364, p = .004), motor (Unst. B = 2.986, p = .004), and nonplanning (Unst. B = 4.050, p = .000) subscales when compared to MDD group. BPII subjects also scored higher on the BIS total (Unst. B = 5.945, p = .033), as well on the attentional (Unst. B = 2.136, p = .035), and nonplanning (Unst. B = 2.485, p = .027) subscales when compared to BPI subjects. BPI subjects scores were not significantly different on either the BIS total or its subscales when compared to MDD subjects. Discussion: In accordance with previous research, the BP group reported significantly higher levels of total, motor and nonplanning impulsivity than the MDD group. More specifically BPII subjects scored significantly higher on all scales of impulsivity than the MDD subjects. Of interest, BPII subjects, when compared to BPI subjects, reported significantly higher levels of total, attentional and nonplanning impulsivity but not motor impulsivity. These findings suggest that impulsivity traits in BPII are distinct when compared to other mood disorder subtypes.

CHILDHOOD ADVERSITY LINKED TO INSECURE ATTACHMENT STYLES WITHIN A MOOD DISORDER POPULATION

Poster Presenter: Erin Luxenberg, B.Sc.
Lead Author: Tamara Cassis, B.Sc.
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SUMMARY:

Background: Mood disorders affect 10% of the Canadian population and may involve persistent states of depression or mania. Insecure attachment styles are more prevalent in individuals with mood disorders compared to those without. Insecure attachment can influence the course of illness in mood disorders, while a secure attachment is linked to more positive health behaviors, such as greater adherence to health plans and preventive health behaviors. Moreover, childhood adversities, in the form of physical abuse and neglect have been associated with insecure attachment styles in adulthood. Objectives: To examine the association between childhood adversity and adult attachment styles. Methods: For this cross-sectional study, 160 participants were recruited from the Mood Disorders Program of the McGill University Health Center in Montreal, Quebec. Childhood adversity was assessed with the Childhood Experience of Care and Abuse Questionnaire, which measures antipathy, parental loss, neglect, role reversal, and physical, psychological, and sexual abuse. Attachment styles were assessed using the Experiences in Close Relationships Questionnaire. Anxious and avoidant attachment styles were examined. Linear regressions were conducted to examine the association between specific types of childhood adversity and insecure attachment. Results: Parental antipathy was found to be associated with anxious attachment style ($Î² = 0.228$, p = .007), as was role reversal ($Î² = 0.237$, p = .011). Antipathy, neglect and psychological abuse were associated with avoidant attachment ($Î² = 0.356$, p = <.001, $Î² = 0.239$, p = .004, $Î² = 0.237$, p = .006, respectively). Discussion: This study provides further support for the link between childhood adversity and insecure attachment in a mood disorders population. It would be beneficial to assess childhood adversity and attachment style in mood disorder subjects when patient adherence emerges as a problem in the course of clinical care.

AN 8-WEEK, DOUBLE-BLIND, PLACEBO-CONTROLLED STUDY OF CARIPRAZINE MONOTHERAPY FOR THE TREATMENT OF BIPOLAR I DEPRESSION

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SUMMARY:

Introduction:The majority of time spent unwell for a patient with bipolar disorder is accounted for by depressive symptoms, which are the most enduring, prevalent, and disabling symptoms of the disorder. Cariprazine (CAR), a potent dopamine D3 and D2 receptor partial agonist with preferential binding to D3 receptors, is in late-stage clinical development for treatment of schizophrenia and bipolar mania. The objective of this study was to evaluate the efficacy, safety, and tolerability of CAR, an atypical antipsychotic candidate, in patients with bipolar depression.

Methods:This was an 8-week multinational, multicenter, randomized, double-blind, placebo (PBO)-controlled, parallel-group, fixed-dose study in adult patients (age, 18-65 years) with bipolar I disorder; the primary efficacy endpoint was Week 6 (NCT01396447 ClinicalTrials.gov). Patients were randomized (1:1:1:1) to PBO or CAR 0.75 mg/d, 1.5 mg/d, or 3.0 mg/d. The primary and secondary efficacy parameters were change from baseline to Week 6 on the Montgomery-Ã…sberg Depression Rating Scale (MADRS) and Clinical Global Impressions-Severity (CGI-S), respectively, analyzed using a mixed-effects model for repeated measures (MMRM) on the intent-to-treat (ITT) population; P values were adjusted for multiple comparisons. Cohen's d effect size estimates were calculated for the primary analysis and MADRS single items were evaluated in post hoc analyses.

Results:The ITT population comprised 571 patients (PBO=141, CAR: 0.75 mg/d=140, 1.5 mg/d=145, 3.0 mg/d=145); 73% of patients completed the study (PBO=72%, CAR: 0.75 mg/d=73%, 1.5 mg/d=80%, 3.0 mg/d=64%). The LSMD (95% CI) for MADRS total score change from baseline to Week 6 was statistically significant in favor of CAR 1.5 mg/d versus PBO (-4.0 [-6.3, -1.6]); adjusted P=.0030, unadjusted P=.0010). CAR 3.0 mg/d was nominally significant versus PBO (-2.5 [-4.9, -0.1], unadjusted P=.0374), but the difference was not significant when adjusted for multiplicity (adjusted P=.1122); 0.75 mg/d was similar to PBO. Effect sizes for the CAR 0.75-, 1.5-, and 3.0-mg/d groups after 6 weeks of treatment were 0.20, 0.42, and 0.26, respectively. A similar pattern of significance versus PBO was seen on the CGI-S (CAR: 1.5 mg/d=-0.4 [-0.6, -0.1], adjusted P=.0132; 3.0 mg/d=-0.3 [-0.5, -0.0], unadjusted P=.0489). In post hoc analyses, statistically significant improvement for CAR 1.5 mg/d versus PBO was seen on 6 of 10 MADRS single items (P<.05 each). The only adverse events (AEs) that occurred at â‰¥10% in any CAR group were akathisia, and insomnia. Serious AEs were reported in 5 PBO patients and 1, 2, and 2 CAR 0.75-, 1.5-, and 3.0 mg/d-patients, respectively.

Conclusions:CAR 1.5 mg/d demonstrated consistent efficacy versus PBO across outcomes and was generally well tolerated, suggesting potential efficacy for the treatment of bipolar depression. This study was supported by funding from Forest Laboratories, LLC, an affiliate of Actavis, Inc., and Gedeon Richter Plc.

EARLY ONSET ROBUSTLY ESCALATES PRIOR SUICIDE ATTEMPT RATE IN BIPOLAR II DISORDER

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Co-Author(s): Shefali Miller M.D., Po W. Wang M.D., Farnaz Hooshmand M.D., Bernardo Dell'Osso M.D., Jessica N. Holtzman B.A., Terence A. Ketter M.D.

SUMMARY:

Background: Although suicide attempts are common in patients with bipolar disorder (BD), and have been consistently associated with early onset, findings vary regarding the effect of BD illness subtype, that is having bipolar II disorder (BDII) versus bipolar I disorder (BDI), and little is known regarding relationships between early onset and prior suicide attempt in BDII. We explored the effects of early onset

upon risk of prior suicide attempt rate in BDII and BDI.

Methods: BD patients referred to the Stanford Bipolar Disorder Clinic during 2000-2011 were assessed with the Systematic Treatment Enhancement Program for BD Affective Disorders Evaluation. Rates of prior suicide attempt were compared in patients with early (age <13) and later (age â‰¥ 13) onset stratified by bipolar subtype (BDII versus BDI). Categorical comparisons were assessed with Chi-square tests, using a two-tailed significance threshold of $p < 0.05$.

Results: Among 503 outpatients (259 BDII, 244 BDI, 107 early onset, 396 later onset; meanÂ±SD age 35.6Â±13.1 years), rate of prior suicide attempt in early compared to later onset BD, was nearly double in BDII (46.3% versus 23.7%, $p < 0.01$), but only non-significantly elevated in BDI (41.0% versus 30.2%, p = NS). Although BDII compared to BDI more frequently entailed early onset (26.2% versus 16.0%, $p < 0.01$) and early onset more frequently entailed prior suicide attempt (44.3% versus 27.1%, $p < 0.01$), prior suicide attempt rates were statistically similar in BDII compared to BDI (29.5% versus 32.1%, p=NS), possibly related to a nonsignificantly lower prior suicide attempt rate in later onset BDII compared to BDI (23.7% versus 30.2%, p=NS).

Conclusions: Further studies are needed to assess the impact of early onset versus illness subtype in BD patients, in particular to assess whether or not the increase in risk of prior suicide attempt with early onset is more prominent in BDII compared to BDI.

BIOMARKERS IN BIPOLAR DISORDER AND CARDIOVASCULAR DISEASE: CLINICAL CORRELATES AND SYMPTOMATIC STATE MARKERS

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SUMMARY:
Objective: 1) To assess whether these biological markers vary with symptomatic state. 2) To assess leading biomarkers in bipolar disorder (BD) and cardiovascular disease (CVD), for association with demographic and clinical factors. Introduction: BD is a mood disorder in which moods may fluctuate from depression to mania. CVD is the leading cause of death in those with BD. Assessment of biomarkers which may underlie the BD-CVD link have not yet been investigated in adolescents. Early assessment is vital for potential prevention strategies and disease staging. Methods: 60 adolescents (13-19 years old), with no CVD (40 adolescents with BD, and 20 healthy controls) were recruited. Semi-structured interviews (Kiddie-Sads-Present and Lifetime Version (K-SADS-PL)), were used for psychiatric assessment. Standard procedures were used for measurements of carotid intima media thickness (cIMT) and flow-mediated dilation (FMD). ELISA kits were used for serum levels of inflammatory and oxidative stress markers. Non-parametric analyses were performed using SPSS 22. Results: Biomarkers and CVD risk measures are not significantly associated with current depression in adolescents with BD or healthy controls. However, current mania was significantly associated with greater levels of interferon (IFN)-gamma ($U(59)= 19$, $Z=-2.25$, $p=0.025$), interleukin (IL) 10 ($U(59)= 11$, $Z=-2.59$, $p=0.010$), IL 1-alpha ($U(59)= 7$, $Z=-2.63$, $p=0.009$), IL 1-beta ($U(59)= 17$, $Z=-2.39$, $p=0.017$), IL 4 ($U(59)= 8$, $Z=-2.84$, $p=0.004$), tumor necrosis factor (TNF)-alpha ($U(59)= 12$, $Z=-2.44$, $p=0.015$) and vascular endothelial growth factor (VEGF) ($U(59)= 17$, $Z=-2.28$, $p=0.023$). Gender associations were mixed: males had significantly greater fasting glucose and waist circumference ($U(59)= 250.5$, $Z=-2.30$, $p=0.02$ & $U(59)= 246.5$, Z=-

2.73, p=0.006; respectively), while females had significantly greater maximum cIMT, and mean cIMT, (U(59)= 253, Z=-2.42, p=0.015 and U(59)= 249, Z=-2.47, p=0.013, respectively), as well as greater levels of IL-1alpha (U(59)= 210.5, Z=-2.62, p=0.009) and systolic blood pressure (U(59)= 247.5, Z=-2.65, p=0.008). Current tobacco use was not significantly associated CVD risk and biomarkers, however non-users had significantly greater waist circumference and TNF-alpha (U(59)= 68, Z=-2.32, p=0.020 & U(59)= 65, Z=-2.22, p=0.027; respectively). Current use of second generation antipsychotics was associated with significantly greater pulse pressure, as well as IL-4 and IL-6 (U(59)= 203.5, Z=-3.45, p=0.001), U(59)= 271, Z=-1.97, p=0.049), and U(59)= 255.5, Z=-2.05, p=0.040), respectively). Lastly, those with a family history of CVD had significantly greater HDL, LDL, and IL-6 (U(59)= 219.5, Z=-2.59, p=0.010, U(59)= 244.5, Z=-2.11, p=0.035, U(59)= 214, Z=-2.35, p=0.019), respectively). Conclusion: In adolescents with BD, inflammation may be a state marker of mania. Medication use and family history of CVD may play a role in CVD risk in adolescents with BD.

THE VALUE OF EARLY IMPROVEMENT AS A PREDICTOR OF SHORT-TERM RESPONSE DURING TREATMENT OF BIPOLAR DEPRESSION WITH LURASIDONE

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SUMMARY:

Introduction: Lurasidone has demonstrated efficacy in the treatment of bipolar depression both as monotherapy and when used adjunctively with lithium or valproate. Early clinical improvement is a potentially important predictor of response that may guide treatment selection. The aim of this analysis was to evaluate the utility of early improvement in the Montgomery-Asberg Depression Rating Scale (MADRS) and the Clinical Global Impressions Bipolar Version, Severity of Illness (CGI-BP-S) scale as predictors of response to lurasidone in patients with bipolar depression.
Methods: Patients with bipolar I depression were randomized to 6 weeks of double-blind treatment with lurasidone in a monotherapy study with fixed-flexible doses of 20-60 mg/day and 80-120 mg/d, or placebo; and in a study with flexible doses of 20-120 mg/d or placebo, adjunctive with either lithium or valproate. For both the monotherapy and adjunctive therapy studies, the relationship between early improvement and response at Week 6 was assessed using two separate criteria (MADRS improvement â‰¥25%; CGI-BP-S improvement â‰¥1-point). Early improvement was examined at Week 2. The sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) of early improvement for the prediction of endpoint response were estimated; endpoint response was defined as â‰¥50% reduction from baseline in MADRS total score. Receiver operating characteristic (ROC) curves were used to evaluate the performance characteristics of early improvement criteria for the prediction of endpoint response, reported as area under the ROC curve (AUCROC).
Results: In the monotherapy study, the proportion of patients showing early improvement at Week 2 using the MADRSâ‰¥25% criterion was 47.6%, and the proportion using the CGI-BP-Sâ‰¥1 criterion was 52.0%. For prediction of endpoint response at Week 2, the MADRSâ‰¥25% criterion had 64.9% sensitivity, 78.6% specificity, 82.0% PPV, 59.7% NPV, and AUCROC=0.877; and the CGI-BP-Sâ‰¥1 improvement criterion had 62.8% sensitivity, 64.3% specificity, 72.7% PPV, 53.4% NPV, and AUCROC=0.852. In the adjunctive therapy study, the proportion of patients showing early improvement at Week 2 using the MADRSâ‰¥25% criterion was 51.7%, and the proportion

using the CGI-BP-Sâ‰¥1 criterion was 64.3%. For prediction of endpoint response at Week 2, the MADRSâ‰¥25% criterion had 68.5% sensitivity, 78.4% specificity, 85.1% PPV, 58.0% NPV, and AUCROC=0.919; and the CGI-BP-Sâ‰¥1 improvement criterion had 77.2% sensitivity, 58.8% specificity, 77.2% PPV, 58.8% NPV, and AUCROC=0.883.
Conclusions: Early improvement (by Week 2) was found to robustly predict clinical response at Week 6 in patients treated with lurasidone for bipolar depression. Both definitions of early improvement, the CGI-BP-S and the MADRS, performed similarly in predicting response. Further analyses are needed determine the utility of early improvement for clinical decision-making.
Sponsored by Sunovion Pharmaceuticals Inc.

RISK FACTORS FOR SUICIDE ATTEMPTS IN BIPOLAR PATIENTS: A STUDY WITH THE COLUMBIA-SUICIDE SEVERITY RATING SCALE

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SUMMARY:

Bipolar patients (BP) are at high risk of suicide. It has been stated that around 30 to 40% of BP have suicidal ideation and about 25-50% of them will commit at least one suicide attempt throughout their lives. In this sense, the Columbia-Suicide Severity Rating Scale (C-SRSS) emerges as a promising tool for both prospective and retrospective assessment of suicidal ideation severity and intensity, as well as suicidal behaviour. Our aim was to analyze sociodemographic and clinical differences between non suicidal patients, patients presenting with only suicidal ideation and patients with both suicidal ideation and behaviour, according to C-SRSS criteria. Secondarily, we also investigated whether C-SRSS Intensity Scale would be useful to predict suicidal attempt in bipolar patients.
METHODS: For this investigation 102 BP were included. All patients were recruited from the Bipolar Disorder Unit of the Hospital Clinic of Barcelona and from primary care settings from Oviedo. Inclusion criteria were (a) bipolar I/II diagnosis, (b) age>18 years and (c) fulfill estrict euthymia criteria during at least 3 months before the study entry. Exclusion criteria were the presence of (a) mental retardation and (b) severe organic disease. A semi-estructured interview based on the SCID, the C-SRSS, HDRS, YMRS, CTQ and BIS-11 were used to assess sociodemographic, clinical and psychosocial data. Patients were grouped according to C-SRSS criteria: those who scored â‰¤ 1 on the Severity Scale were classified as non suicidal patients. The remaining patients were in turn grouped into two groups ("only suicidal ideation" and "suicide attempters") according whether they fulfil or not the Actual Attempt item from the Suicidal Behavior Scale. Analyses were performed using SPSS 20. All procedures were approved by the research ethics committees in each institution.
RESULTS: Our results showed that three analyzed groups differed in terms of age at illness onset (p=.046), age at first depressive episode (p=.030) and at first hospitalization (p=.038), illness duration (p=.002), number of depressive (p=.022) and mixed episodes (p=.007), level of impulsivity (p=.049), history of childhood trauma (p=.024), axis II comorbidity (p=.024), family history of psychiatric (p=.016) and affective diseases (p=.009), as well as lifetime misuse of benzodiazepines (p=.024) and alcohol (p=.010). Concerning Intensity Scale items scores, all item scores (Frequency (p=.018); Duration (p=.015); Controllability (p=.038); Deterrents (p=.035)) were found to be significantly increased in BP who have committed a suicidal act,

except in the case of Reason for ideations item.
CONCLUSIONS: Our results suggest that the three analyzed groups significantly differed in terms of clinical and psychosocial features. In general terms, patients belonging to the suicidal attempter group showed a worse clinical and psychosocial profile compared to the other two groups in a manner commensurate with suicidality severity.

RELATIONSHIP BETWEEN DDR2 SNPS AND BIPOLAR I DISORDER

Lead Author: Hwang-Bin Lee, M.D.
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SUMMARY:
Objective: We investigated whether seven single nucleotide polymorphisms (SNPs) of discoidin domain receptor tyrosine kinase 2 (DDR2) were contributed to susceptibility of bipolar I disorder in Korean population.

Methods: A total of 72 bipolar I disorder patients (mean aged 47.5 Â± 6.6; 33% female) and 360 healthy controls (mean aged 48.5 Â± 11.1; 47.5% female) were compared using case-control association analysis. We searched the SNPs of the DDR2 gene in the NCBI website. SNPs with <0.1 minor allele frequency (MAF), <0.1 heterozygosity, and unknown genotype frequencies were excluded. The seven SNPs (rs6702820, intron; rs10494373, intron; rs10917589, intron, rs2806424, intron, rs4038287, intron, rs189870832, Ser311Asn; rs2298258 Leu420Leu) were finally selected. For analysis of data, SNPStats, SPSS18.0, and Haploview version 4.2 were used. Multiple logistic regression models (codominant1, codominant2, dominant, recessive, and log-additive models) were performed.

Results: There were significant association between two SNPs (rs2806424, intron; rs4038287, intron; and rs2298258, Leu420Leu) and bipolar I disorder ($p<0.05$). These minor alleles of the SNPs showed increasing risk of bipolar. Rs2806424 SNP (intron) in DDR2 gene showed significant association with the bipolar I disorder [codominant model 2 (T/T genotype vs. C/C genotype), OR = 4.12, 95% CI = 2.04-8.33, p = 0.000083; recessive model (T/T genotype + T/C genotype vs. C/C genotype), OR = 3.27, 95% CI = 1.88-5.72, p < 0.0001; log-additive model (T/T genotype vs. T/C genotype vs. C/C genotype), OR = 2.09, 95% CI = 1.45-3.02, p = 0.0001]. Rs4038287 SNP (intron) in DDR2 gene showed significant association with the bipolar I disorder [codominant model 1 (T/T genotype vs. T/A genotype), OR = 2.30, 95% CI = 1.33-3.96, p = 0.003; dominant model (T/T genotype vs. T/A genotype + A/A genotype), OR = 2.25, 95% CI = 1.32-3.83, p = 0.0035; log-additive model (T/T genotype vs. T/C genotype vs. C/C genotype), OR = 1.90, 95% CI = 1.20-3.02, p = 0.0078]. Rs2298258 SNP (Leu420Leu) in DDR2 gene also showed significant association with the bipolar I disorder [codominant model 2 (C/C genotype vs. G/G genotype), OR = 3.43, 95% CI = 1.70-6.93, p = 0.001; recessive model (C/C genotype + C/G genotype vs. G/G genotype), OR = 3.12, 95% CI = 1.76-5.50, p = 0.0001; log-additive model (C/C genotype vs. C/G genotype vs. G/G genotype), OR = 1.91, 95% CI = 1.31-2.77, p = 0.0006]. Genotype distributions of four SNPs (rs6702820, rs10494373, rs10917589, rs189870832) in DDR2 gene did not show any difference between the bipolar group and the control group.

Conclusion: Our results suggest that DDR2 gene may be contributed to the susceptibility of bipolar I disorder in Korean population.

KEY WORDS; polymorphism; bipolar I disorder; DDR2 SNPs

REMISSION AND RECOVERY IN LURASIDONE-TREATED PATIENTS WITH BIPOLAR DEPRESSION

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SUMMARY:
Background
The objective of this post-hoc analysis was to evaluate symptomatic and functional remission and recovery in patients with bipolar depression treated with lurasidone.

Methods
Outpatients meeting DSM-IV-TR criteria for bipolar I depression, with or without rapid cycling, were randomized to 6 weeks of once-daily, double-blind treatment with either lurasidone 20-60 mg (LUR20-60), lurasidone 80-120 mg (LUR80-120) or placebo (PBO). A total of 318 subjects enrolled in a 6-month, open extension study of lurasidone. Subjects initially treated with placebo were started at extension baseline with flexible once-daily doses of lurasidone 40-160 mg/d (PBO-LUR; N=107). Symptomatic and functional recovery was defined as meeting criteria for both sustained symptomatic remission (Montgomery-Asberg Depression Rating Scale [MADRS] total score â‰¤ 12) and sustained functional remission (Sheehan Disability Scale [SDS] mean score â‰¤ 3 and all SDS domain scores â‰¤ 3 representing no more than mild impairment) for at least 3 months (i.e., at months 3 and 6 of the open extension study).

Results
At the end of the 6-week acute phase, a significantly higher proportion of subjects met both symptomatic and functional remission criteria in the lurasidone group (33%, pooling the LUR20-60 and LUR80-120 groups) compared to the placebo group (21%, $p<0.05$, NNT = 9). The proportion of subjects attaining symptomatic remission at week 6 was also significantly higher in the lurasidone group (41%) compared to the placebo group (25%, $p<0.01$, NNT = 7). Likewise, the proportion of subjects attaining functional remission at week 6 was significantly higher in the lurasidone group (48%) compared to the placebo group (31%, $p<0.01$, NNT = 6).The NNT for lurasidone (versus placebo) attaining functional remission at week 6 was 8 for work domain ($p<0.05$), 6 for social life domain ($p<0.001$), and 5 for family life domain ($p<0.001$).

In the 6-month extension study, the proportion of subjects achieving both sustained symptomatic and functional remission (recovery), that is, symptomatic and functional remission at both months 3 and 6 of the extension study was 61% and 45% in the LUR-LUR and PBO-LUR groups, respectively. Sustained symptomatic remission ("recovery") rates were 73% for LUR-LUR and 67% for PBO-LUR at extension study endpoint. Sustained functional remission ("recovery") rates were 65% for LUR-LUR subjects and 57% for PBO-LUR subjects at extension study endpoint. Multivariate logistic regression analysis revealed that statistically significant predictors of symptomatic and functional recovery included: lower baseline symptom (CGI-BP overall) severity, non-white race, and taking lurasidone (rather than placebo) during the acute phase.

Discussion
These findings derived from a 6-week acute and 6-month extension study period suggest that lurasidone is associated with substantial rates of symptomatic and functional remission and recovery in patients with bipolar depression.

IMPROVING MANAGEMENT OF DEPRESSION IN BIPOLAR I DISORDER THROUGH CONTINUING MEDICAL EDUCATION

Lead Author: Jovana Lubarda, Ph.D.
Co-Author(s): Piyali Chatterjee, Roger S. McIntyre, M.D.

SUMMARY:
Study objectives
Bipolar disorder affects 10.4M people in the US, yet gaps exist in distinguishing unipolar and bipolar depression and selecting appropriate treatments for the depressive phase. This study assessed effects of online continuing medical education (CME) on improving clinical performance of psychiatrists and primary care physicians (PCPs) who provide care for adults with bipolar I disorder (BP-I).

Methods
An online survey was administered to measure effectiveness of an online CME program on a website dedicated to lifelong learning. Participants were exposed to archived enduring expert perspectives in managing depression in BP-I. Linked participants (i.e., the learners), who served as their own controls, were pre-assessed with a set of 3 case-based performance questions and 1 self-efficacy question (i.e., difficulty in clinical decision-making) from patient cases before exposure to CME. Effectiveness of knowledge transfer/exchange was evaluated immediately after CME, and again in 30-60 days. McNemar's chi-squared test was used to determine statistical significance. Cramer's V was used to calculate the effect size of the educational intervention, based on the strength of association between the pre- and post- CME performance.

Results
Online CME in BP-I with depression improved percent of physicians who answered all 3 clinical performance questions correctly immediately post-CME, for psychiatrists (n = 411, from 28% pre-CME to 55% correct responses post-CME, P <.001) and PCPs (n = 324, from 6% pre-CME to 42% correct responses post-CME, P <.001), with moderate educational effect sizes (V=0.45 for psychiatrists; V=0.32 for PCPs). CME was particularly effective at elevating skills on the use of recently approved antipsychotics for BP-I depression; psychiatrists demonstrated a 34% improvement while PCPs demonstrated a 60% improvement in knowledge from pre- to immediate post-CME assessment. Follow-up 30-60 days after CME was performed on smaller linked participant samples. Psychiatrists retained performance on correct responses to 3 out of 3 questions (n=51; from 55% correct responses post-CME to 57% correct responses on follow-up) while PCPs declined in retention (n = 28; from 42% correct responses post-CME to 25% correct responses on follow-up), but still performed better on follow-up than pre-CME (V = 0.278; P =.001). Interestingly, PCPs reported that clinical decision-making was 11% easier on follow-up despite declining in knowledge retention, while 31% psychiatrists rated that clinical decision-making was more difficult from post- to follow-up assessment.

Conclusions
Online CME intervention was successful in improving practice performance on diagnosis and management of BP-I with depression. Psychiatrists and PCPs would benefit from additional tailored education on diagnostic strategies and new agents to drive knowledge transfer and retention with the overarching aim of improving health outcomes in patients with BP-I.

EFFICACY AND SAFETY OF ASENAPINE 5 MG BID AND 10 MG BID IN ADULTS WITH A MANIC OR MIXED EPISODE ASSOCIATED WITH BIPOLAR I DISORDER

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SUMMARY:
Introduction: Sublingual asenapine (ASN) is an approved novel antipsychotic agent with demonstrated efficacy in the treatment of

manic and mixed episodes associated with bipolar I disorder as well as schizophrenia.[1] In the pivotal trials for ASN, patients (pts) had the option to flexibly titrate from 10 mg twice daily (bid) to 5 mg bid if clinically indicated.[2,3] However, <10% of pts had their dose reduced to 5 mg bid.

Hypothesis: This study aimed to further characterize, by a fixed-dose design, the efficacy and safety of ASN 5 mg bid and 10 mg bid vs placebo (PBO) in adults currently in an acute manic or mixed episode associated with bipolar I disorder.

Methods: This was a phase IIIb, multicenter, international, double-blind, fixed-dose, parallel-group, 3-week, PBO-controlled trial in pts aged â‰¥18 years with a current manic (DSM-IV 296.4x) or mixed (DSM-IV 296.6x) episode. Pts were randomized 1:1:1 to PBO, ASN 5 mg bid, or ASN 10 mg bid. The primary efficacy outcome was the difference between ASN and PBO in the change in Young-Mania Rating Scale (YMRS) total score from baseline to day 21. Secondary efficacy outcomes included the difference between ASN and PBO in the change from baseline to day 21 in the Clinical Global Impression Scale for use in Bipolar Illnessâ€“Severity subscale (CSGI-BP-S), response (ie > 50% improvement in total YMRS score), Positive and Negative Symptom Scale (PANSS) score, and Montgomeryâ€“Ã…sberg Depression Rating Scale (MADRS) score.

Results: 367 pts were randomized and 264 completed the study, with similar numbers completing across the 3 groups. The mean age was 43.8 years. The least-squares (LS) mean change from baseline at day 21 in YMRS total score was â€“10.9, â€“14.4, and â€“14.9 for PBO, ASN 5 mg bid, and ASN 10 mg bid, respectively. Significant differences were observed between both doses of ASN and PBO. Both doses of ASN were superior to PBO in improving CGI-BP-S overall scores. Both the PANSS and MADRS total score results support these findings, with significant differences observed between ASN and PBO for both scales at day 21. There was no significant difference between ASN and PBO in response rates at day 21. Oral hypoesthesia, sedation, akathisia, somnolence, and headache were the most commonly reported adverse events.

Conclusion: This is the first study to demonstrate that ASN administered 5 mg bid has similar efficacy as the currently approved 10 mg bid dose. Both doses of ASN were shown to be efficacious in the treatment of manic and mixed episodes associated with bipolar I disorder.

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PATTERNS OF IMPROVEMENT IN PATIENTS WITH ACUTE DEPRESSIVE EPISODES OF BIPOLAR I DISORDER AND BIPOLAR II DISORDER

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Co-Author(s): Catherine J. Datto, M.D., M.S., William Pottorf, Ph.D., Scott LaPorte, B.S., Charles Liss, M.S.

SUMMARY:

Introduction: Few studies of acute depressive episodes of bipolar disorder (BD) include patients with either BD type I or II. Five studies were examined of BDI and II patients treated with quetiapine (QTP; immediate and extended release), placebo and either lithium or paroxetine to illustrate clinical patterns of response and safety profiles.

Methods: The primary results of the 5 randomized, 8-week, bipolar depression studies are reported elsewhere.1-5 Here efficacy and safety are examined according to BDI and II status. QTP 300 mg and 600 mg treatment arms were pooled because their efficacy was similar.1-4 Efficacy assessments included MADRS, CGI-BP-S and HAM-A scores and safety was

assessed by adverse event (AE) and discontinuation adverse event (DAE) rates.
Results: BDI patients randomized to QTP totaled 1162, placebo 486, lithium 87 and paroxetine 74, while BDII patients randomized totaled 598, 231, 49 and 44. Demographic characteristics (sex, age and weight) and baseline severity of illness (MADRS, CGI-BP-S and HAM-A) were similar across treatment groups. In the first 4 weeks of treatment, BDII patients randomized to lithium demonstrated the slowest rates of symptom improvement, measured by change in MADRS total score. BDI and II patients randomized to QTP demonstrated fastest symptom improvement in the first 4 weeks. In the last 4 weeks of treatment, BDI or II patients randomized to placebo and paroxetine showed slower symptom improvement, while those treated with lithium nearly reached the symptom improvement achieved by those randomized to QTP. Similar patterns of response were seen for CGI-BP-S and HAM-A scores. For MADRS item changes, QTP showed greater improvement across BD subgroups and most items, but items 3, 5, 7 and 9 responded similarly well to lithium. Proportions of BDI patients reporting any AE were: QTP 76.7%, placebo 72.4%, lithium 54.0% and paroxetine 71.1%; and DAE rates were 9.9%, 3.8%, 5.7% and 11.8%, respectively. Proportions of BDII patients reporting any AE were 74.5%, 66.5%, 65.3% and 66.7%, respectively; and DAE rates were 14.2%, 4.1%, 10.2% and 4.4%. Patterns of AEs were consistent with the known side-effect profiles of these agents.
Conclusion: These subanalyses provide important insights on efficacy and safety in acute depressive episodes of BDI and II. BDII patients initially have a slower response to treatment, but by 8 weeks reach treatment improvement levels similar to BDI, with the exception of paroxetine in BDII patients. No clear pattern of tolerability differences was identified between BDI and BDII by randomized treatments.

Research sponsored by AstraZeneca.
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THE ASSOCIATION BETWEEN LIPID LEVELS AND NEUROCOGNITIVE PERFORMANCE IN ADOLESCENTS WITH BIPOLAR DISORDER

Lead Author: Melanie Naiberg, B.Sc.
Co-Author(s): Dwight F. Newton, BScH., Benjamin I. Goldstein, MD, PhD, FRCPC.

SUMMARY:

Objective: To compare lipid abnormalities and cognitive dysfunction among adolescents with bipolar disorder (BD) compared to controls without mood disorders.

Background: BD is a psychiatric disorder, which affects 1-5% of adolescents. Individuals with BD also experience psychiatric comorbidities and neurocognitive impairment. In adults, it has been previously determined that BD is associated with an increased risk of cardiovascular disease and associated risk factors. BD has also been shown to be associated with impaired neuropsychological function. Findings have found that lipid abnormalities, including high low-density lipoprotein (LDL), low high-density lipoprotein (HDL), and elevated triglyceride (TG) levels, have been linked with cognitive dysfunction. In these individuals, performance on frontal-executive tasks is impaired. This study aims to compare lipid abnormalities and cognitive dysfunction among adolescents with BD compared to controls who do not exhibit any mood disorders. We

hypothesized that BD youth will have poorer performance on set-shifting tasks compared to controls. As well, lipid abnormalities will be associated with poorer task performance.

Methods: Subjects were English-speaking adolescents (13-20 years old), including 30 BD adolescents (mean age 16.8 years old) and 25 healthy control adolescents without mood disorders (mean age 15.4 years old). Fasting blood levels of HDL, LDL and TGs were obtained. Cognitive function was assessed using the computerized Cambridge Neuropsychological Test Automated Battery. Subjects completed an attention, executive functioning and set-shifting task entitled the Intra-Extra Dimensional task (IED). One-way ANOVA tests, Pearson correlations, and Spearman correlations were used to detect significant results.

Results: In the overall sample of 55 adolescents, the IED total errors z-scores were significantly associated with cholesterol (r=-0.374, p=0.013), LDL (r=-0.333, p=0.029), and TGs (r=-0.314, p=0.040). There was a stronger correlation between LDL and the IED total trials z-scores in the BD group (Ï =-0.487, p=0.022) than seen in the control group (Ï =-0.168, p=0.455). There is also a trend in the overall sample where an increase in the number of cardiovascular risk factors is associated with poorer neurocognitive performance (Ï‡2=5.074, p=0.280).

Conclusions: These preliminary findings suggest that lipid abnormalities are associated with executive function among BD adolescents, but not healthy controls. This may be due to the fact that LDL and TG elevation may contribute to atherogenesis, leading to cognitive impairment. This study provides preliminary insights into one of the leading challenges in BD, cognitive impairment. This suggests the potential value of utilizing pharmacological and behavioral strategies for improving lipid abnormalities, and perhaps cognitive impairment. This will help to reduce stigma and to identify novel treatment strategies.

INFLAMMATION AND COGNITIVE DYSFUNCTION IN ADOLESCENTS WITH BIPOLAR DISORDER

Lead Author: Dwight F. Newton, B.Sc.
Co-Author(s): Dwight F. Newton, BScH, Melanie R. Naiberg, HBMSc, Benjamin I. Goldstein, M.D., PhD

SUMMARY:

Background: Multiple studies have implicated inflammation in the pathophysiology of bipolar disorder (BD). Similarly, cognitive dysfunction, particularly in frontal-executive processes, is observed during symptomatic episodes of BD, and can persist in periods of euthymia. Adult studies have shown associations between inflammatory markers and cognition. No previous study has examined the association between inflammation and cognitive dysfunction among adolescents with BD, a population that may allow enhanced signal detection by minimizing the effects of aging and years of symptom burden.

Methods: We measured high sensitivity CRP levels in 30 BD and 25 healthy control participants. Cognitive function was assessed using the Cambridge Neuropsychological Test Automated Battery (CANTAB), utilizing the Intra-Extra Dimensional shift (IED) subtest and three other subtests measuring frontal-executive processes. Age and sex-adjusted Z-scores were obtained using the CANTAB normative database. A composite score for IED performance was calculated with the mean of the Z-scores for the IED sub-scores. Independent-samples t-tests or Mann-Whitney U tests were used for between-group comparisons, and associations between CRP and cognitive outcomes were assessed with Pearson or Spearman correlations.

Results: Z-scores for total errors (adjusted for stages completed) (p=0.041), total errors (p=0.031), total trials adjusted for stages completed (p=0.013), pre-extra-dimensional shift errors (p=0.024), as well as the composite score (p=0.019) from the IED task were significantly lower in the BD group compared to controls. Within the whole sample there was a significant correlation between CRP levels and the IED composite score (Ï =-0.324, p=0.044). Furthermore, the IED composite Z-score (p=0.031) and the total errors (adjusted) Z-score (p=0.046) were significantly lower in individuals who had high CRP (â‰¥1 mg/L) compared to low CRP (<1 mg/L).

Conclusions: Adolescents with BD have impaired set-shifting and reversal learning compared to controls. hsCRP may, in part, modulate these deficits in BD. Larger studies employing dimensional measures of BD liability are needed to determine the degree to which this association is based on diagnosis versus trait. Similarly, studies of anti-inflammatory therapeutic approaches are warranted to examine whether these approaches ameliorate cognitive dysfunction.

METABOLIC PROFILE OF CARIPRAZINE IN PATIENTS WITH ACUTE MANIA ASSOCIATED WITH BIPOLAR I DISORDER

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Co-Author(s): Willie Earley, M.D., Kaifeng Lu, Ph.D., GyÃ¶rgy NÃ©meth, M.D, Suresh Durgam, M.D.

SUMMARY:

Background: Acute manic or mixed episodes associated with bipolar I disorder are often managed with atypical antipsychotics. Although these drugs can be effective in alleviating manic symptoms, they have also been associated with adverse metabolic effects.

Cariprazine is a potent dopamine D3 and D2 partial agonist antipsychotic with preferential binding to D3 receptors. Safety data from Phase II/III studies of cariprazine in the treatment of manic/mixed episodes associated with bipolar I disorder were analyzed to evaluate the effects of this drug on various metabolic parameters.

Methods: A post hoc analysis was conducted using pooled data from three 3-week, double-blind, placebo-controlled trials (N=1065) and one 16-week, open-label study of cariprazine (N=402) in patients with acute mania. Cariprazine doses (3 to 12 mg/day) were pooled for this analysis. Assessments included mean change from baseline in metabolic parameters and the percentage of patients with potentially clinically significant (PCS) postbaseline values for weight (â‰¥7% increase from baseline), total cholesterol (1.3 x upper limit of normal [ULN]), fasting triglycerides (1.2 x ULN), and fasting glucose (1.2 x ULN). The percentage of patients with metabolic syndrome before and after 16 weeks of cariprazine was determined using National Cholesterol Education Program criteria as a guideline.

Results: At the end of double-blind treatment, mean changes in weight were similar for cariprazine vs placebo (0.5 vs 0.2 kg); the percentage of patients with PCS weight increase was also similar between groups (1.9% vs 1.6%). For other metabolic parameters, mean changes from baseline and the percentage of patients with a shift to PCS postbaseline values during short-term treatment were as follows (cariprazine vs placebo): total cholesterol (0.7 vs 3.8 mg/dL; PCS, 4.2% vs 5.7%), triglycerides (3.1 vs -4.4 mg/dL; PCS, 14.4% vs 11.6%), and glucose (7.0 vs 1.7 mg/dL; PCS, 6.1% vs 3.7%).

In the 16-week, open-label study, mean changes and shifts to PCS postbaseline values for cariprazine were as follows: weight (0.9 kg; PCS, 9.3%), total

cholesterol (-5.0 mg/dL; PCS, 5.7%), triglycerides (4.8 mg/dL; PCS, 26.3%), and glucose (5.5 mg/dL; PCS, 11.1%). The percentage of patients with metabolic syndrome was similar before and after long-term treatment (15.9% and 16.4%, respectively).

Conclusions: In patients receiving 3 weeks of treatment with cariprazine, mean changes in weight, cholesterol, triglycerides, and glucose were generally small and similar to placebo; the percentage of patients experiencing PCS postbaseline values with cariprazine was also generally similar to placebo. Mean changes in metabolic parameters in the 16-week open-label study were similar to those seen in the short-term studies. Overall, cariprazine was associated with relatively low adverse metabolic effects. Supported by funding from Forest Laboratories, LLC, an affiliate of Actavis Inc., and Gedeon Richter Plc.

LIGHT THERAPY FOR BIPOLAR DEPRESSION: A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROL TRIAL

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Co-Author(s): James McGowan, BA, Christopher Wiltrout, BS, Jonathan Weingarden, PsyD, Rasim Somer Diler, MD, Jesse Dills, MLS, James Luther, MA, Howard Seltman, MD, PhD, Stephen Wisniewski, PhD, Michael Terman, PhD, Katherine L Wisner, MD, MS

SUMMARY:

Background
Bipolar Disorder (BD) is a major public health concern that is associated with chronic disability, lost productivity, plus increased suicide risk. Although studies have uncovered effective drugs for mania, treatments for bipolar depression are few. Building on earlier findings, the objective was to confirm the efficacy of midday light therapy for depressed patients with BD Type I or II in a 6-week randomized, double-blind placebo-control trial. The aims were to examine the change in depression levels and the proportion of subjects who responded and remitted. We assessed predictors of response with measures of side effects, suicidality and circadian rhythms.
Methods
We enrolled 18-75 year old patients with a SCID-confirmed diagnosis of BD-I or II, a current major depressive episode, and stableâ€“dosed antimanic drug therapy. Exclusion criteria were acute psychosis, rapid cycling, obsessive compulsive disorder, alcohol or substance use disorders, current hypomania, mania or mixed episode, recent suicide attempt or active suicidal ideation, beta blockers, exogenous melatonin, or chronic NSAIDS therapy. Subjects were assigned randomly to receive 7000 lux broad spectrum light therapy (active) OR 50 lux dim red light (inactive) for 15-60minutes daily between NOON-2PM for 6-weeks. To assess response, remission and polarity switch, the blinded-clinician rated mood symptoms with the Structured Interview Guide for the Hamilton Depression Scale with Atypical Depression Supplement (SIGH-ADS) and the Mania Rating Scale (MRS), safety and tolerability with the Scale for Suicidal Ideation (SSI) and the Systematic Assessment for Treatment Emergent Effects at weekly visits.
Results
We evaluated 93 potential participants. Main reasons for exclusion were rapid cycling, mild depression, mania and hypomania. We randomized 46 patients, 23 to active and 23, to the inactive treatment groups; 83% of patients completed all visits. Baseline demographics and clinical features did not differ between groups. Under still blind-conditions, analyses indicated at time of randomization (Week 0), most patients had moderately-severe to severe depression levels. At Week 0, the SIGH-ADS depression scores (meanÂ±standard deviation) of patients in treatment groups X

and Y were 30.1Â±6.1 and 26.1Â±5.2 (U(1)=5.68, p=0.02, f=0.38), respectively. At the final visit (Week 6), SIGH-ADS scores differed significantly between groups: depression levels in group X vs Y were 17.4Â±9.8 vs 10.4Â±8.1, respectively (U(1)=6.40 p=0.01, f=0.41). The rate of remission (SIGH-ADS<8) differed significantly between groups; 14.3% (3) of patient in group X vs 56.5% (13) in group Y had minimal depressive symptoms by study completion (XÂ²(1) = 8.46, p=0.004).

Discussion

Original findings provide robust evidence to confirm the efficacy of midday light therapy for major depressive episodes in patients with BD. Added benefits include improved sleep quality and reduced suicidality.

EARLY SLEEP SYMPTOMS PREDICTED NON-REMISSION IN PATIENTS TREATED WITH CITALOPRAM FOR DEPRESSION IN STAR*D

Lead Author: Cynthia Siu, Ph.D.

Co-Author(s): Cynthia Siu, Ph.D., Mary Waye, Ph.D., Carla Brambilla, M.Sc., Shitao Rao, M.Sc., Marco HB Lam, M.D., Wing-Kit Choi, M.D., Yun-Kwok Wing, M.D.

SUMMARY:

Objectives

Sleep disturbance is a core symptom of depression. Residual sleep disturbances, including insomnia and nightmares, were also reported in remitted depressed patients. Previous studies have shown that frequent insomnia and nightmares are linked to increased severity of clinical symptoms, worse treatment response, higher risk of relapse, and increased likelihood of suicidal ideation and suicide attempts. The nature and severity of the sleep symptoms have significant impact on treatment outcomes and quality of life in patients with depression. The objective of this study was to investigate predictors of remission using early sleep symptoms (assessed at week 2), as well as demographic and clinical characteristics.

Methods

Data from the Sequenced Treatment Alternatives to Relieve Depression (STAR*D) trial were analyzed. All participants received citalopram as the initial treatment (Level 1 of STAR*D). A total of 2,876 adult outpatients with a primary clinical diagnosis of nonpsychotic major depressive disorder (MDD) from primary and psychiatric public and private practice settings across the United States enrolled in the Level 1 study of STAR*D. Sleep disorder was assessed at each visit using the Patient Rated Inventory of Side Effects (PRISE). The primary outcome (i.e., symptom remission) was defined as a total score of 7 or less on the 17-item Hamilton Depression Rating Scale (HRSD-17).

Results

Remission was significantly less likely in those patients experiencing sleep disorder symptoms ($p<0.01$ for difficulty sleeping, OR=0.47; $p<0.001$ for sleeping too much, OR=40) than those with no symptoms. The proportion of patients with no sleep disorder symptom at week 2 visit was significantly higher in the remitted group (59%) compared to the non-remitted group (29%). Other significant predictors of remission included lower baseline symptom severity, younger age, female gender, non-black subjects, and higher education level. A multivariate function based on these baseline clinical and early side effect predictors showed statistically acceptable calibration performances based on c-statistics.

Conclusions

Our findings suggest that early sleep symptoms predicted poorer treatment outcome in outpatients who sought treatment for nonpsychotic MDD in typical clinicalsettings.

USING MULTI-CRITERIA DECISION ANALYSIS (MCDA) TO EVALUATE PATIENT PREFERENCES FOR ATYPICAL

ANTIPSYCHOTIC TREATMENT OF BIPOLAR DISORDER

Lead Author: Shawn X. Sun, Ph.D.
Co-Author(s): Kevin Marsh, Ph.D., Leslie Citrome, M.D., Tereza Lanitis, M.S., Jolanta Poplawska, Ph.D.

SUMMARY:
OBJECTIVE: Among branded atypical antipsychotic agents, aripiprazole and quetiapine are the atypical antipsychotics preferred by payers, while newer atypical antipsychotics, such as asenapine, are considered undifferentiated. The aim of this study was to use multi-criteria decision analysis (MCDA) to estimate patient preferences for the newer atypical antipsychotic, asenapine (10-20 mg BID), and two older atypical antipsychotics, aripiprazole (30mg QD) and quetiapine XR (400-800 mg QD).
METHODS: Eight value criteria encompassing clinical benefit, risks, and convenience of atypical antipsychotic treatments for bipolar disease were identified from a targeted literature review and clinician consultation. For each treatment, outcome measures for each value criterion were obtained from published clinical trials. Scores and weights were elicited during a two-day workshop from four practicing psychiatrists in the US who were asked to reflect the preferences of their patients. These data were aggregated in an Excel-based model to obtain an overall value score for each criterion. One-way and probabilistic sensitivity analyses were conducted to assess the robustness of model conclusions.
RESULTS: The most important value criteria were judged to be: the YMRS total score and risks of somnolence, weight gain, akathisia and non-akathisia extrapyramidal symptoms; prolactin levels, frequency of administration and QTc prolongation differences were judged to be of lesser importance by the four participants. A value scale ranging from -68 to 32 was generated by the MCDA through combining these weights with the performance scores of treatments. On this scale asenapine scored 9.6, aripiprazole scored 0.6 and quetiapine XR scored -2.4, suggesting the clinical profile of asenapine may be preferred by patients to older generation atypical antipsychotics. A Monte Carlo simulation suggested that asenapine would be preferred 82% and 86% of the time when compared to aripiprazole and quetiapine XR, respectively.
CONCLUSIONS: Aripiprazole and quetiapine are often the payer-preferred atypical antipsychotic agents for the treatment of bipolar disorder. This study demonstrates the value of methods that capture the broad range of attributes of treatments, how treatments differ across these attributes, and clinicians' views of the importance of these differences. The results suggest that when such methods are applied, there is a case for payers to provide clinicians with access to a broader range of antipsychotics to help them serve patients' varied individual needs. Limitations include the small number of workshop participants.

THE EFFECT OF PERSONALITY DISORDER AMONG BIPOLAR PATIENTS ON THE COURSE OF DISORDER

Lead Author: Cenk Varlik
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SUMMARY:
OBJECTÄ°VE:In this research, our purpose is to inspect past attacks among patients who are diagnosed with bipolar I disorder according to DSM-IV and their hospitalisation, to determine personal disorders by applying SCID-II to these patients, to designate the effect of personal disorder additional diagnosis on clinical variants among patients suffering from

bipolar I disorder and relation between this additional diagnosis and clinical variants.
METHOD: Between December 2009-March 2010 in Bakirkoy Prof. Dr. Mazhar Osman Psychiatric Training and Resarch Hospital Rasit Tahsin Duygudurum Centre (RTDDM), 121 patients who are observed with inspection form, which has been structured since 2003, and diagnosed with bipolar I disorder according to DSM-IV-TR criterias have been consecutively included in our research. Sociodemographic data form and SCID-II interview table have been applied to patients suffering from bipolar I disorder and having participated in the research.According to DSM-IV-TR diagnosis criteria, patients who have personal disorder additional diognosis and patients who do not have, have been compared in terms of sosciodemographic attributes and clinical progress.
RESULTS: In our research that we searched the frequency of personality disorder among the patients having bipolar I disorder, at least one personalty disorder was found in 38,4% of the patients. The avarage hospitalization duration of patients not having personal disorder has been determined significantly higher than the ones having personal disorder (t=2,697 p<0,05). (t=2,768 p<0,05). The number of depressive attacks among patients having personal disorder has been determined significantly higher than the ones not having personal disorder. The past attempts of committing suicide are significantly high in the group suffering from personality disorder.
CONCLUSÄ°ONS:The group having personality disorder have had more depressive attacks than the group not having personalty disorder. This condition reguires acting more carefully against depressive attacks during treatment of bipolar patients having personalty disorder. In addition to this, among the group having personality disorder, the rate of patients attempting to commit suicide was found higher. On the other hand average hospitalization days of the group not having personality disorder was found higher than the one having personality disorder.

EFFICACY OF CARIPRAZINE IN SUBGROUPS OF BIPOLAR PATIENTS WITH MANIC EPISODES, MIXED EPISODES, AND WITH OR WITHOUT PSYCHOTIC SYMPTOMS

Lead Author: Eduard Vieta, M.D., Ph.D.
Co-Author(s): Kaifeng Lu, Ph.D., Dayong Li, Ph.D., Paul Ferguson, M.S., IstvÃ¡n Laszlovszky, Pharm.D., Suresh Durgam, M.D.

SUMMARY:

Introduction: Cariprazine is a potent dopamine D3 and D2 receptor partial agonist with preferential binding to D3 receptors. The general efficacy and tolerability of cariprazine in patients with bipolar mania has been supported by 3 phase II/III studies (NCT00488618, NCT01058096, NCT01058668). However, the efficacy of cariprazine in specific subpopulations of patients based on diagnostic features has not been assessed. This pooled analysis of the 3 phase II/III studies evaluated the efficacy of cariprazine versus placebo in patients with manic versus mixed episodes and in patients with and without psychotic symptoms.

Methods: Data were pooled from 3 similarly designed, 3-week, randomized, double-blind, placebo-controlled trials. Cariprazine was flexibly dosed (3-12 mg/day) in 2 studies; the third study used a fixed/flexible dose design (3-6 mg/day, 6-12 mg/day); all doses were combined for the pooled analysis. Patients were required to have Young Mania Rating Scale (YMRS) total score â‰¥20 and Montgomery-Asberg Depression Rating Scale (MADRS) total score â‰¤18 for inclusion in the studies. Using DSM-IV-TR criteria, patients were stratified by manic or mixed episode and were stratified by presence of psychotic symptoms. Efficacy assessments included change from baseline to Week 3 in YMRS total score, YMRS response (â‰¥50%

improvement) rates, and YMRS remission (YMRS total score â‰¤12) rates.

Results: Of the 1037 patients in the ITT population, 892 patients (86%) met criteria for manic episodes and 145 (14%) met criteria for mixed episodes; 282 patients (27%) presented with psychotic features. Cariprazine treatment was associated with significantly greater mean improvement in YMRS total vs placebo regardless of type of episode or presence of psychotic features. Least square mean differences (LSMD) for change in YMRS total score at Week 3 were: manic, -5.7 (P<.0001); mixed, -4.0 (P=.0254); psychotic, -6.2 (P<.0001); non-psychotic, -5.0 (P<.0001). A significantly greater proportion of cariprazine vs placebo patients met criteria for response and remission in the manic (response, 58% vs 36% [P<.0001]; remission, 45% vs 29% [P<.0001]), psychotic (response, 53% vs 32% [P=.0005]; remission, 43% vs 25%; P=.0017]), and non-psychotic subgroups (response, 59% vs 38% [P<.0001]; remission, 47% vs 31% [P<.0001]). Cariprazine versus placebo showed numerically greater response (cariprazine, 57%; placebo, 40%; P=.065) and remission (cariprazine, 49%; placebo, 34%; P=.058) rates in patients with mixed episodes; differences did not achieve statistical significance, probably due to small sample size.

Conclusions: In this pooled post hoc analysis, cariprazine was effective in reducing mania symptoms across multiple diagnostic subgroups, including patients with manic or mixed episodes and patients with and without psychotic features. This study was supported by funding from Forest Laboratories, LLC, an affiliate of Actavis Inc. and Gedeon Richter Plc.

HEALTHCARE RESOURCE USE AND EXPENDITURES FOR BIPOLAR DISORDER PATIENTS ON ASENAPINE WITH PRIOR ATYPICAL ANTIPSYCHOTIC USE

Lead Author: Rosa Wang, B.Sc., M.H.A.

SUMMARY:

OBJECTIVES: Bipolar disorder (BPD) has a significant economic burden associated with its treatment, including medical and pharmacy costs. This study examined the change in health resource utilization (HRU) and direct healthcare costs prior to and after the initiation of asenapine in patients with BPD.

METHODS: This retrospective cohort study used Truven Health MarketScanÂ® Commercial and Medicare Supplemental Insurance databases to identify patients with BPD (â‰¥18 years old) who initiated asenapine with prior use of atypical antipsychotic therapy between 2009 and 2012. Patients were required to be continuously enrolled for medical and pharmacy benefits for at least 6 months before (baseline) and 6 months after (follow-up) starting asenapine. All-cause and BPD-related HRU (psychiatrist use, hospital admissions, outpatient visits, length of hospital stay, physician office visits, and emergency room [ER] visits) and healthcare costs (total, inpatient, outpatient, ER, and pharmacy) were assessed over the baseline and follow-up periods.

RESULTS: A total of 932 BPD patients were identified that initiated asenapine with prior use of atypical antipsychotic therapy. The patients had an average (SD) age of 43 (14.1) and 72.2% were female. The average (SD) Charlson Comorbidity Index score was 0.48 (1.1) and 45.9% had comorbid depression. From baseline to follow-up, there was a significant reduction in the proportion of BPD patients that had any hospital admissions (32.1% vs. 20.9%, p-value<0.05) or any ER visits (26.9% vs. 20.4%, p-value<0.05), and a significant drop in the average length of hospital stays (4.1 vs. 2.2, p<0.05) for all-cause. The patterns observed for BPD-related HRU were similar. The average per-patient costs for all-cause healthcare services

significantly decreased from baseline to follow-up for inpatient ($ 6,206 to $3,969, p<0.05), but increased for pharmacy ($4,328 to $4,898, p<0.05) services. The average total all-cause healthcare costs were significantly lower at the follow-up as compared with the baseline ($11,500 vs. $ 13,273, p<0.05) period. BPD-related healthcare costs had similar trends including a significant decrease in total costs at follow-up compared with baseline ($5,783 vs. $7,316, p<0.05).
CONCLUSION: Six months after initiating asenapine, HRU and costs were lower. The observed increase in pharmacy costs were more than offset by the reduct

RESPONSE AND REMISSION RATES AND NUMBER NEEDED TO TREAT WITH CARIPRAZINE IN PATIENTS WITH BIPOLAR MANIA: ANALYSES FROM 3 PHASE II/III TRIALS

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Co-Author(s): Kaifeng Lu, Ph.D., Adam Ruth, Ph.D., GyÃ¶rgy Nemeth, M.D., IstvÃ¡n Laszlovszky, Pharm.D., Willie Earley, M.D., Suresh Durgam, M.D.

SUMMARY:

Introduction: Atypical antipsychotics are widely used for the treatment of bipolar mania. However, many of these agents are associated with metabolic side effects, sedation, or extrapyramidal side effects such as akathisia. New medications with strong efficacy coupled with better tolerability are needed to improve treatment response and the likelihood of achieving disease remission.
Cariprazine is a potent dopamine D3 and D2 receptor partial agonist with preferential binding to D3 receptors. The efficacy and tolerability of cariprazine in the treatment of manic and mixed episodes associated with bipolar I disorder are supported by 3 phase II/III studies. A pooled analysis was conducted to further characterize the efficacy of cariprazine and translate the results into clinically relevant measures.
Methods: Data were pooled from 3 cariprazine studies in patients with bipolar mania. Studies were generally similar in design with 3 weeks of double-blind treatment. Cariprazine was flexibly dosed (3-12 mg/day) in 2 studies; the third study used a fixed/flexible dose design (3-6 mg/day, 6-12 mg/day); all cariprazine doses were combined for these analyses. Improvement in manic symptoms, measured by changes in Young Mania Rating Scale (YMRS) scores, was the primary efficacy measure in all 3 studies. Pooled analyses evaluated response (improvement â‰¥50%) and remission rates using different YMRS thresholds: â‰¤12, â‰¤8, â‰¤4. Number needed to treat (NNT) and 95% confidence intervals (95%CI) were calculated for each outcome.
Results: The pooled study population consisted of 429 placebo patients and 608 cariprazine patients. Cariprazine patients showed significantly higher rates of response relative to placebo patients (57% vs 36%; P<.0001); the NNT (95%CI) for response was 5 (4, 7). Rates of remission using the standard definition (YMRSâ‰¤12) were also significantly higher for cariprazine compared with placebo (46% vs 30%; P<.0001); NNT (95%CI) for remission was 7 (5, 10). The advantage for cariprazine relative to placebo was also seen when more stringent definitions of remission were used. Remission rates using the YMRSâ‰¤8 criteria were 30% for cariprazine versus 19% for placebo (P<.0001). Using the most stringent criteria,YMRSâ‰¤4, which represents patients who have obtained an asymptomatic state, remission rates were 15% for cariprazine versus 9% for placebo (P=.0012). The NNT (95%CI) for YMRSâ‰¤8 and YMRSâ‰¤4 were 9 (7, 17) and 17 (11, 49) respectively.
Discussion: A significantly higher proportion of cariprazine vs placebo patients met the standard definitions of treatment response and disease remission; low NNT (<10) suggested cariprazine treatment was associated with clinically meaningful

benefits. Using more stringent remission criteria that represent patients who achieve complete symptom resolution, cariprazine showed superiority over placebo. This study was supported by funding from Forest Laboratories, LLC, an affiliate of Actavis Inc., and Gedeon Richter Plc.

CATEGORICAL IMPROVEMENT ACROSS MANIA SYMPTOMS: POOLED ANALYSES OF CARIPRAZINE PHASE II/III TRIALS

Lead Author: Stephen R. Zukin, M.D.
Co-Author(s): Kaifeng Lu, Ph.D., Adam Ruth, Ph.D., Marc Debelle, M.D., Suresh Durgam, M.D.

SUMMARY:
Background: Bipolar mania is characterized by a wide spectrum of symptoms. Antipsychotics are a first-line treatment option for bipolar mania, although many patients fail to achieve full remission with currently available therapies. Cariprazine, a dopamine D3/D2 receptor partial agonist with preferential binding to D3 receptors, has demonstrated efficacy in 3 positive Phase II/III clinical trials in patients with manic or mixed episodes associated with bipolar I disorder. Previous analyses showed that cariprazine was associated with significantly greater mean changes vs placebo on all YMRS single items. Evaluating mean change from baseline in a group of patients, however, may not represent clinically meaningful improvements in individual symptoms. This pooled post hoc analysis assessed clinically relevant symptom improvement in individual YMRS items by evaluating the percent of patients that shifted from a more severe symptom category at baseline to a less severe category at end of study.
Methods: Pooled 3-week data (N=1037) from 3 double-blind, randomized, placebo-controlled trials (NCT00488618, NCT01058096, NCT01058668) was analyzed. All cariprazine doses (3-12 mg/d) were pooled. For categorical shift analyses, the percentage of patients that shifted from at least moderate severity (YMRS item score â‰¥2 [items scored 0-4] and â‰¥4 [items scored 0-8]) at baseline to mild/no symptoms (score <2 [0-4 items] and <4 [0-8 items]) at Week 3 were determined for all 11 YMRS items. Additional analyses included the percentage of patients that shifted from at least moderate to mild/no symptoms concurrently on all 4 core YMRS symptoms (irritability, speech, content, and disruptive-aggressive behavior) and the percentage of patients with mild/no symptomatology at endpoint concurrently on all 11 items.
Results: The percentage of patients that shifted from moderate or worse severity at baseline to mild/no symptoms at Week 3 was significantly higher for cariprazine vs placebo on each of the YMRS single items. Odds ratios (OR) ranged from 1.6 (increased motor activity-energy) to 2.7 (irritability); all, P<.001. Category shifts on all 4 YMRS core items concurrently were observed in a significantly greater percentage of cariprazine (50.5%) vs placebo (29.1%) patients (OR=2.43; P=.0002). The percentage of patients with mild/no symptoms on all 11 YMRS domains at endpoint was also significantly higher in the cariprazine (22.5%) vs placebo (13.5%) group (OR=1.85; P=.0004).
Conclusions: In this novel post hoc YMRS category shift analysis, a significantly greater proportion of cariprazine-treated compared with placebo-treated patients showed clinically meaningful categorical improvements on all 11 YMRS symptom domains. These results suggest that cariprazine is associated with clinically meaningful improvements across a broad spectrum of mania symptoms. This study was supported by funding from Forest Laboratories, LLC, an affiliate of Actavis Inc, and Gedeon Richter Plc.

MOTHER, FATHER, AND TEACHER AGREEMENT ON VICTIMIZATION AND BULLYING IN CHILDREN WITH PSYCHIATRIC AND NEURODEVELOPMENTAL DISORDERS

Lead Author: Raman Baweja, M.D., M.S.

Co-Author(s): Susan D. Mayes, Ph.D., Susan L. Calhoun,Ph.D., Farhat Siddiqui, M.D., Daniel A. Waschbusch, Ph.D., Richard E. Mattison, M.D., Dara E. Babinski, Ph.D.

SUMMARY:
Parents and teachers rated bullying and victimization for 1,723 children with psychiatric and neurodevelopmental disorders ages 2-16. Mothers and fathers did not differ in rating their child as a bully. Mothers were slightly more likely to consider their child a victim than fathers. Parent-teacher agreement was poor. Half of mothers and fathers thought their child was a victim, which was twice the percentage for teachers. Parents were 1.2 times more likely than teachers to perceive their child as a bully. Most parents reported that their child was a victim and/or bully, whereas most teachers reported that the children were neither. These findings are consistent with large general population studies showing that parents rate victimization, bullying, externalizing problems, internalizing problems, and prosocial behavior higher than teachers. For all informants in our study, victim percentages were twice as high as percentages reported by parents and teachers in population-based studies, suggesting that both parents and teachers perceive that victimization is considerably more common in children with psychiatric and neurodevelopmental disorders than the norm. Our study and others indicate that the choice of informant affects who is identified as a bully or victim, and consequently, who needs and receives intervention. Information must be obtained from parents, teachers, and the student to insure that problems, like bullying and victimization, are not missed. School-wide anti-bullying programs should pay particular attention to students with psychiatric and neurodevelopmental problems, because they have twice the risk of victimization and bullying as students in the general population.

STABILITY OF IRRITABLE-ANGRY MOOD AND TEMPER OUTBURSTS THROUGHOUT CHILDHOOD AND ADOLESCENCE IN A GENERAL POPULATION SAMPLE

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SUMMARY:
Mothers rated DSM-5 DMDD symptoms (irritable-angry mood and temper outbursts) as "not at all or almost never," "sometimes," "often," or "very often" a problem on the Pediatric Behavior Scale in a population-based sample of 376 children. Children were evaluated at 6-12 years (M 9) and again an average of 8 years later at 12-23 (M 16). The mean irritable-angry mood plus temper outburst score at baseline and follow-up was below "sometimes a problem," but was somewhat higher at baseline than at follow-up. Irritable-angry mood and temper outburst scores were both "often to very often a problem" for 9% of children at baseline, 6% at follow-up, and 3% at both baseline and follow-up. Scores were "very often a problem" for 0.8% at baseline, 1.1% at follow-up, and 0.3% (one child) at both baseline and follow-up. When the threshold for defining the presence of irritable-angry mood and temper outbursts was "sometimes a problem," 1/3 had symptoms at both baseline and follow-up, 1/3 were symptom free at baseline and follow-up, and 1/3 were discrepant, with twice as many improving as worsening. When the symptom thresholds were "often" or "very often" a problem, overall stability was much higher because 88% and 98%, respectively, were below threshold at both baseline and follow-up. Remitting was relatively common. Approximately half with mild and with severe symptoms at baseline were symptom free at follow-up. Although

half of children with severe symptoms at baseline had at least mild symptoms at follow-up, only 29% continued to have severe symptoms. Interestingly, percentages of children who were symptom free at follow-up were slightly higher for children whose baseline symptoms were "often to very often a problem" (51%) than for children whose baseline symptoms were milder (at least "sometimes a problem" 42%). Therefore, children with more severe symptoms were not less likely to remit than those with milder symptoms. New cases were rare, and only 25% with at least mild follow-up symptoms had been symptom free at baseline. Almost all with severe symptoms at follow-up had at least mild symptoms at baseline. Interestingly, differences between baseline and follow-up scores were not related to age at baseline or at follow-up or duration between baseline and follow-up, indicating that the stability of irritable angry mood and temper outbursts did not differ as a function of age across the 6-18 year DSM-5 DMDD age range.

A FOLLOW-UP INVESTIGATION OF RESTITUTIONAL FORGIVENESS AND ANGER-RELATED EMOTIONS

Lead Author: Shih-Tseng T. Huang, Ph.D.
Co-Author(s): Liwen Lee, Ph.D.

SUMMARY:

The present study attempted to examine the forgiveness and anger-related emotions in adolescents. Previous research suggested adolescents were likely to consider restitution in their forgiveness (Level 2 of Enright theory of forgiveness). They are likely to engage in forgiveness when and after words or gestures of compensation were granted from the offender as a necessary condition. In the study, participants were selected from an initial screening of 2461 students from high schools and colleges from southern Taiwan. And, then selected those were restitutional and those who considered forgiveness as love (Level 6 of Enright theory of forgiveness). Only those who had had an interpersonal conflict within the past three years which they reported resolved through forgiveness were selected. They were then further matched in terms of the type, severity, length of conflict, age, gender, and religion. Following the screening, 58 participants participated in the study and then, they were followed up three times within twenty weeks. Results found on the Enright Forgiveness Inventory (EFI), there was a interaction between phases and levels on the negative affect subscale. Follow up analysis revealed that, at Time 3, the level 2 forgivers scored higher than that of the level 6 forgivers. For the negative behavior subscale, the main effect of phases was significant, with the forgivers' scores at time 2 were lower than time 1. For the negative cognitive subscale, significant interaction between phases and levels was found. For the difference scores of systolic blood pressure, the main effect of phase was significant. The difference scores at time 3 were higher than time 1 and time 2. At the 2nd minute, the systolic blood pressures of the level 2 were also higher than the level 6 forgivers. For the different scores of diastolic blood pressures, the main effect of phase was significant. The different scores at time 3 were higher than time 1 and time 2. The significant interaction between levels and numbers of reading was also found. As expected, there was found that the adolescent forgivers will decrease their negative emotions (include affect, cognitive and behaviors) toward the conflict and offenders during interview after a period of time. However, the restitutional forgivers will release less negative emotion than the level 6 forgivers.

PREVALENCE AND CLINICAL CORRELATES OF NON-SUICIDAL SELF INJURY IN ADOLESCENTS WITH BIPOLAR DISORDER

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SUMMARY:
Background: Non-suicidal self-injury (NSSI) refers to any purposeful physical harm that an individual inflicts on oneself without intent to die. Most of the literature on the correlates of NSSI is largely based on epidemiologic samples or heterogeneous samples of adolescent psychiatric patients. Only the Course and Outcome of Bipolar Illness in Youth (COBY) study on the correlates of NSSI in bipolar (BD) adolescents found that depressive symptom severity, a suicide attempt, a mixed episode, and poor psychosocial functioning were associated with NSSI.
Objective: The purpose of this study is to examine the clinical, psychosocial, and family psychiatric correlates of NSSI among BD adolescents.
Methods: One hundred and sixteen adolescents from ages 13-19 years (16.3 Â± 1.5 years, 66.4% female) with BDI (n=30), BDII (n=46), or BDNOS (n=40) determined by the Schedule for Affective Disorders and Schizophrenia for School Age Children, Present and Lifetime Version (K-SADS-PL) were included. Participants were recruited from the Centre for Youth Bipolar Disorder, a tertiary clinic at Sunnybrook Health Sciences Centre in Toronto. A Safety Assessment Form was used to verify lifetime NSSI. Correlates of NSSI were examined using chi-square analyses and independent samples t-tests.
Results: Lifetime NSSI was reported by 50.9% of BD subjects. BD subjects with NSSI were significantly more likely to be female (83.1% vs. 49.1%, p<0.001) and were significantly younger (15.9 vs. 16.7 years old, p=0.003) than subjects without NSSI. BD subjects with NSSI reported significantly higher rates of passive death wishes (98.3% vs. 62.5%, p<0.001), active suicidal ideation (81.0% vs. 41.1%, p<0.001), and suicide attempts (42.1% vs. 8.8%, p<0.001) than subjects without NSSI. BD subjects with NSSI were also significantly more likely to have BDII (49.2% vs. 29.8%, p=0.033), a current major depressive episode (62.7% vs. 38.6%, p=0.009), panic disorder (30.5% vs. 8.8%, p=0.003), generalized anxiety disorder (59.3% vs. 36.8%, p=0.015), and post-traumatic stress disorder (8.5% vs. 0.0%, p=0.025), but significantly less likely to have lifetime ADHD (28.8% vs. 47.4%, p=0.039). With regards to treatment, BD subjects with NSSI were significantly less likely to be on psychiatric medications (64.4% vs. 82.5%, p=0.028), lithium (11.9% vs. 26.3%, p=0.047), and stimulants (10.2% vs. 24.6%, p=0.040), but significantly more likely to be on SSRI antidepressants (45.8% vs. 24.6%, p=0.017). Finally, BD subjects with NSSI were significantly less likely to have a first or second-degree family history of mania (27.1% vs. 49.1%, p=0.015).
Conclusions: NSSI is highly prevalent among adolescents with BD, and is associated with indicators of suicide risk and with substantial burden of anxiety disorders. Future prospective studies are warranted to better understand the timing of the observed associations, and to better understand the psychiatric and neurocognitive factors that confer risk for NSSI.

CHARACTERISTICS OF ADOLESCENT SUBSTANCE USE DISORDERS IN A COMMUNITY HOSPITAL SETTING

Lead Author: Dilip Mohan Velu, M.D.
Co-Author(s): Sharic Cid Colon, M.D., Maria Bodic, M.D., George Alvarado, M.D., Theresa Jacob, Ph.D, M.P.H

SUMMARY:
Introduction: Adolescent substance use continues to be an ongoing major issue contributing to emergency room visits for patients with or without co-morbid Axis I psychiatric diagnoses. The extent of the problem, the contributing factors and the specific required interventions are expected to vary depending on multiple parameters including demographics, socio economic variables, and catchment area. Knowing

these characteristics is of paramount importance to providing appropriate care to a difficult patient population in a challenging setting like the emergency room (ER).
Objective: The objective is to examine the demographics, chief complaints, primary and secondary diagnoses of substance related disorders for adolescents requiring a psychiatric evaluation; compare these to the national average, and identify factors contributing to the differences.
Methods: An IRB-approved retrospective study was conducted in the Pediatric ER at Maimonides Medical Center, a community-based, independent academic medical center in Brooklyn, NY, Basic information for all the psychiatric evaluations of the children and adolescents performed between January 2014 and December 2014 was recorded. Analyzed variables included demographics, chief complaint, primary and secondary diagnoses. A search was performed on the Center for Behavioral Health Statistics and Quality (part of the Substance Abuse and Mental Health Services Administration) to obtain the average national data for this patient population.
Results: Preliminary analyses identified a total of 320 psychiatric consults performed in the pediatric ER during the study period. Of these, 18 adolescents ages 12 to 17 (10 males and 8 females) had a substance related Axis I diagnosis. Of these, 11 (61.1%) were cannabis related, 1 (5.5%) alcohol related, 4 (22.2%) polysubstance dependence and 2 (11.1%) were with other substance related diagnoses. This is lower than the national average for all adolescents with co-morbid major psychiatric and substance related Axis I diagnoses. Additionally, it was identified that the most common clinical presentation was suicidality, with agitation/aggressive behavior being the second most common.
Conclusion: The lower prevalence of substance related diagnosis in adolescents identified in this study could be in part due to the demographic in the catchment area of our medical center which is predominantly that of conservative Orthodox Jewish population and that of recent immigrants with strong family ties/support. However, inadequate screening for substance use in the ER or deficient documentation contributing to lower recognition cannot be ruled out and need to be further investigated.

FACTORS ASSOCIATED WITH OBSTETRICAL COMPLICATIONS AMONG ADOLESCENTS WITH BIPOLAR DISORDER

Lead Author: Geraldine O' Hagan, M.Sc.
Co-Author(s): Antonette Scavone, HBSc., Vanessa Timmins, BSc., Benjamin Goldstein, MD, PHD.

SUMMARY:

Background: Exposure to obstetrical complications has been found to be etiologically significant in schizophrenia. Research into obstetrical complications and bipolar disorder (BD) however, has produced mixed findings, with small sample sizes, in mainly adult BD populations.
Objective: This study compares the prevalence of obstetrical complications (OCs) among adolescents with vs. without BD, and further examines the correlates of OCs among adolescents with BD.
Methods: One hundred and twelve adolescents, age 13-19 years old with a BD diagnosis (16.5 Â± 1.5 years, N=112, 67.0% female) and 60 healthy controls (15.5 Â± 1.8 years, N=60, 46.8% female) were recruited from the Centre for Youth Bipolar Disorder (CYBD), a tertiary sub-specialty clinic at Sunnybrook Health Sciences Centre in Toronto. Data was extracted from research registries maintained by CYBD. Research ethics approval was obtained, and all participants and their parents provided written informed consent prior to commencing study procedures. Diagnoses were assessed using the Schedule for Affective Disorders and Schizophrenia for School Age Children,

Present and Lifetime Version (KSADS-PL). Obstetrical complications were assessed by administering the Child & Adolescent Health Screening Report to primary care-givers; this measure has been utilized in previous OC & BD research. Chi-square analyses and independent samples t-tests were employed to examine demographic and clinical correlates of OCs.
Results: There was no significance difference between BD adolescents and controls in relation to exposure to OCs (39.3% vs. 33.3%, X2 = 0.592, p = 0.441). Among adolescents with BD, presence vs. absence of OCs was associated with: BD II subtype (56.8% vs. 30.9%, X2 = 7.425, p = 0.006), Attention Deficit Hyperactivity (ADHD) (38.6% vs. 19.1%, X2 = 5.190, p = 0.023), substance dependence (34.1% vs. 16.2%, X2 = 4.810, p = 0.028), and with family history of depression (88.6% vs. 72.1%, X2= 4.360, p = 0.037), hypomania (34.1% vs. 16.2%, X2 = 4.810, p = 0.028) and schizophrenia (18.2% vs. 4.4%, X2 = 5.719, p = 0.017).
Conclusions: This preliminary study identifies several clinical correlates of OCs among adolescents with BD. Higher rates of familial depression, hypomania, and schizophrenia among BD adolescents with OCs provide tentative support for a diathesis-stress model (family psychiatric history x OC) of early-onset BD in a subset of subjects. Future studies are warranted that include larger samples, severity ratings of OCs, and examination of the differential illness course and/or treatment response among BD adolescents with vs. without OCs.

OUTCOMES OF CLOZAPINE USE AMONG 27 YOUTH WITH TREATMENT-REFRACTORY PSYCHIATRIC DISORDERS IN A RESIDENTIAL TREATMENT CENTER

Lead Author: Nana Okuzawa, M.D.
Co-Author(s): Heidi J. Wehring, Pharm.D., Hamid Tabatabai, M.D., Sarah Edwards, D.O., Kristin Bussell, M.S., CRNP, Caitlin Rush, B.A., Raymond C. Love, Pharm.D., Susan dosReis, Ph.D., Jason Schiffman, Ph.D., Gloria Reeves, M.D.

SUMMARY:
Background: Research on pediatric clozapine treatment has primarily focused on management of early onset schizophrenia. However, in community care this medication is also used for off-label treatment of complex and treatment-refractory pediatric mental illness. Our goal was to characterize patterns of clozapine use in youth in a residential treatment center (RTC) and to examine its potential benefits and risks. Since youth had high rates of psychiatric comorbidities, especially mood, anxiety and disruptive behavior disorders, we also studied changes in overall medication regimen and intensity of treatment setting post-clozapine treatment.
Methods: We retrospectively collected data from the health records of 27 youth who initiated clozapine between August 2002 and May 2014. Abstracted information included demographics, age at first contact with mental health treatment, psychiatric and medical diagnoses and symptoms, family history, laboratory values, prior and current use of other psychotropic medications, clozapine start/stop dates and discontinuation reason, dosing and side effects, and length of stay and discharge setting from the RTC. Data were analyzed to determine clozapine tolerability, the impact on the need for polypharmacy, time to discharge and the ultimate setting of discharge.
Results: The cohort included 5 females and 22 males with a mean age of 10.7 years (range 6-14). The mean time of clozapine titration was 9.7Â±1.8 months, and the mean maximum daily dose was 350Â±37 mg. The most common diagnoses were Bipolar Disorder, ADHD and PTSD; all patients had at least two diagnoses. The mean age at first mental health treatment was 6 years. The average number of psychotropic medications prior to initiating clozapine was 11.7Â±0.6, of which

3.7Â±0.2 were antipsychotics. Following dose stabilization, clozapine use was associated with a significant reduction in polypharmacy in 85% of subjects; the average number of psychotropic medications decreased from 3.1Â±0.2 to 1.7Â±0.2 (p<0.01). Clozapine was discontinued in 37% of subjects due to minimal improvement (n=4), weight gain (n=2), leukopenia (n=3), and seizure (n=1). Most (67%) subjects experienced significant weight gain (â‰¥5%). Discharge to a less restrictive setting occurred in 71% of the patients who continued clozapine. Average length of stay at the RTC was 37 months and average time from the initiation of clozapine to discharge from RTC was 14 months.
Conclusions: Among our subjects with treatment-refractory mood, anxiety, and disruptive behavior disorders, clozapine was relatively well tolerated using a gradual dosing titration. Further, clozapine, in a specialized RTC, reduced the need for polypharmacy in the majority of subjects and ultimately led to discharge to a less intense setting. Long-term prospective investigations are needed to examine the outcome and safety of clozapine use in these youth following discharge from the residential treatment center.

CORRELATES OF CIGARETTE SMOKING AMONG CANADIAN ADOLESCENTS WITH BIPOLAR DISORDER

Lead Author: Antonette Scavone, B.S.
Co-Author(s): Brenda Swampillai, HBSc, Vanessa Timmins, BSc, Benjamin I. Goldstein, M.D., Ph.D.

SUMMARY:

Background: Although a growing body of literature has examined the prevalence and correlates of cigarette smoking among adults with bipolar disorder (BP), little is known about smoking among adolescents with BP, and no studies have examined smoking in samples of Canadian adolescents with BP. We therefore sought to examine the prevalence and correlates of smoking among Canadian adolescents with BP. Methods: Participants were adolescents ages 13-19 years, including 114 with BP-I,-II, or -NOS (16.28 Â± 1.51 years, 65.8% female) and 61 psychiatrically healthy controls (HC; 15.62 Â± 1.88 years, 47.5% female). Diagnoses were determined via the Schedule for Affective Disorders and Schizophrenia, Present and Lifetime version (KSADS-PL), during which participants reported lifetime tobacco use. The Life Problems Inventory (LPI) measured mood dysregulation and the Children's Global Assessment Scale measured global functioning. A Safety Assessment Form outlined lifetime aggression and suicidality. Demographic and clinical correlates of cigarette smoking were examined using Chi-square analyses and independent samples t-tests. Variables associated with smoking (p<0.1) among those with BP were included in logistic regression analyses. Results: Fifty-four BP participants (47.4%) and three HC participants (4.9%) reported ever having tried a cigarette (p<0.001). Forty-two BP participants (36.8%) reported lifetime regular cigarette use (1 or more cigarettes a day); average age of first regular use was 14.19 Â±2.64 years. Controlling for age, sex, and race, BP participants continued to be significantly more likely to be smokers vs. HCs (p<0.001). Among BP participants, ever smoking was associated with a greater prevalence of comorbid conduct disorder, oppositional defiant disorder, substance use disorder, lifetime homicidal ideations, and non-suicidal self-injurious behaviours, and greater impulsivity, emotional dysregulation, and total LPI scores. Participants that ever smoked were significantly less likely to have ever used a second generation antipsychotic, lithium, and stimulants. Those that ever smoked reported poorer global functioning at intake and the year prior to intake, as well as greater depression scores at intake. After regression analyses, smoking was significantly associated with depression scores at intake (p=0.02) and trait

impulsivity (p<0.001). Conclusions: These findings from a Canadian sample replicate previous U.S. findings. Dimensional lability was prominent among adolescents that smoked, including anger and disinhibition, suggesting that preventative strategies targeting lability may be beneficial in this group of adolescents. Participants that smoked reported more severe depression and worse global functioning, suggesting a worse course of BP illness among adolescents that smoke. Given the high rates of smoking and challenges of smoking cessation in this population, preventive interventions and early cessation strategies are warranted.

EXPLORING THE RELATION BETWEEN SYMPTOMS OF BORDERLINE PERSONALITY DISORDER AND DEPRESSION IN A CLINICAL SAMPLE OF SELF-HARMING FEMALE ADOLESCENTS

Lead Author: Victoria E. Stead, B.A.
Co-Author(s): Louis A. Schmidt, Ph.D., Khrista Boylan, M.D., Ph.D.

SUMMARY:

Borderline personality disorder (BPD) is a severe mental disorder that is increasingly being recognized in adolescents. BPD co-occurs with other Axis I disorders, most commonly depression. Depression can sometimes mask BPD symptoms, leading clinicians to make erroneous diagnoses and suggest less effective treatments for patients (Zanarini et al., 1998). It is important to correctly identify BPD, although this is likely to be difficult in clinical samples of adolescent girls, many of whom are presenting with a first episode of depression.

The main objective of this study was to determine the prevalence of Major Depression and BPD in a clinical sample of adolescent females with a primary presenting concern of self-harm and suicidal ideation. We also tested the association between BPD and depressive symptoms. Specifically, we examined whether common comorbidity of a disruptive behaviour disorder, oppositional defiant disorder (ODD), moderated the relation between depressive symptoms and BPD to potentially aid in differential diagnosis.

Method: Our sample comprised of 12-18 year old females (N=59) referred to a tertiary care youth mental health clinic for concerns related to self-injury and suicidal ideation. Axis I diagnosis was obtained using the best estimate (parent and youth) Development of Well-Being Assessment (DAWBA; Goodman, Ford, Richards, et al., 2000). BPD severity was assessed through the Borderline Personality Questionnaire (BPQ; Poreh et al., 2006) and BPD diagnosis was made using the Revised Diagnostic Interview for Borderlines (DIB-R, Gunderson & Zanarini, 1992).

Results: Scores from the DIB and BPQ were highly correlated (r= .71, p< .001), as were depression and BPQ scores (r= .78, p< .001). ODD was not significantly correlated with BPQ scores (r= .25, p> .05), or with depression (r= .23, p>.05). Our analyses indicated that prevalence of BPD was 18%, major depressive episode was 19%, and 37% meet criteria for ODD. We performed a multiple regression using depression and ODD as predictors of BPQ scores. The overall model was significant (F(3, 52)= 29.24, p<.001), and explained 63% of the variance in BPQ scores, R2= .63. Depression was significant in predicting BPQ scores (Î²= .86, p< .001); however, neither ODD scores nor the interaction between depression and ODD were significant predictors of BPQ scores.

Conclusions: These results demonstrate the strong association between depression and BPD symptomatology. Furthermore, they indicate the complexity in differentiating these symptoms in a clinical sample of girls who would be at high risk for BPD on the basis of experiencing self-injury.

Additionally, ODD symptoms do not moderate this relation between depressed mood and BPD symptoms in a clinical sample of female adolescents. Though, the high prevalence of ODD suggests important linkages with selfâ€“harm, which warrants further inquiry.

THE IMPACT OF SMARTPHONE OVERUSE IN ADOLESCENTS IN TAIWAN- A CROSS-SECTIONAL STUDY

Lead Author: Chen-Ying Wu, M.D., M.P.H.
Co-Author(s): Yu-Hsuan Lin, M.D., Theresa Jacob, Ph.D., M.P.H, Sheng-Hsuan Lin, M.D.

SUMMARY:
Introduction: There is growing evidence of problematic smartphone use being associated with behavioral concerns in adolescents, such as somatic symptoms, attentional deficits, and aggression. Limited studies have explored the usage pattern of smartphone use among adolescents, the association between wireless accessibility, smartphone overuse/addiction and sleep quality. We hypothesize: 1) smartphone overuse has negative influence on sleep quality, 2) wireless accessibility is associated with smartphone overuse behavior and sleep quality, 3) length of smartphone use is positively associated with withdrawal symptoms of smartphone addiction. Methods: In this cross-sectional study, 690 high school students in Taiwan answered a self-administered structured questionnaire on demographic information, lifestyle factors such as alcohol consumption, coffee drinking, and cigarette smoking, Pittsburgh Sleep Quality Index (PSQI), and Smartphone Addiction Inventory (SPAI) - to identify smartphone induced addictive behaviors including tolerance, withdrawal, compulsive behaviors, and daily life function disturbance. Smartphone overuse cutoff - SPAI median score 52. The access to wireless service was classified as: Unlimited data plan, Limited data plan, Accessibility limited in specific area, No wireless access. New smartphone user - less than first quartile of the length of smartphone possession (Q1=0.67 year= 8 months). Crude and adjusted correlation of SPAI and wireless accessibility, PSQI and wireless accessibility were calculated using linear regression. The relationship between length of smartphone possession and withdrawal symptoms was derived from Pearson correlation and comparison of the rho value between new and regular smartphone users. Results: Excluding missing values and incomplete questionnaires, there were 438 participants possessing smartphones. Of these 71 subjects scored above SPAI median=52 meeting criteria for smartphone overuse. Students with smartphone overuse report < 4 hours/night ($p<0.001$). Upon exploring association between Wi-Fi accessibility and PSQI, students with limited access scored 0.89 less compared to students with unlimited access ($p=0.037$); students with accessibility in limited area scored 1.21 less compared to students with unlimited access ($p<0.001$). Students with limited access scored 5.23 less on SPAI compared to students with unlimited access ($p=0.03$); students with accessibility in limited area scored 5.66 less compared to students with unlimited access ($p=0.002$). New users have significantly lower scores of withdrawal symptoms compared to regular users ($p=0.03$). Conclusion: Although smartphone overuse is not associated with negative lifestyle factors such as cigarette smoking, or alcohol drinking, we demonstrate that Wi-Fi accessibility has impact on smartphone overuse behavior and leads to impaired sleep quality. The study also brings to surface the significance of withdrawal symptoms of smartphone overuse.

CROSS-SECTIONAL AGE ANALYSIS OF DMDD SYMPTOMS (IRRITABLE-ANGRY MOOD AND TEMPER OUTBURSTS) IN PSYCHIATRIC AND GENERAL POPULATION SAMPLES

Lead Author: Raman Baweja, M.D., M.S.

Co-Author(s): Susan D. Mayes, Ph.D., Cari Kokotovich, M.A., Christine Mathiowetz, M.A., Susan L. Calhoun, Ph.D.

SUMMARY:
Background: The creation of Disruptive Mood Dysregulation Disorder (DMDD) as a new DSM-5 diagnosis is controversial because of the absence of published validity studies, the fact that DMDD symptoms (i.e., irritable-angry mood and temper outbursts) are common in multiple disorders, and poor agreement between clinicians on DMDD diagnoses. Little is known about DMDD symptoms and age in general population and psychiatric samples.
Methods: Our study is a cross-sectional age analysis of DMDD symptoms in 1,558 children (6-12 years) with ADHD or autism (with or without comorbid ODD) and in 657 children (6-12 years) in a population-based sample (6-12 years), with a subset re-evaluated an average of 8 years later. Mothers rated their children's behavior (0 = not at all or almost never a problem, 1 = sometimes a problem, 2 = often a problem, and 3 = very often a problem) on the two DMDD symptoms on the Pediatric Behavior Scale.
Results: The mean DMDD irritable-angry mood plus temper outburst score was more than "not at all or almost never a problem" but less than "sometimes a problem" in all the general population age groups. In contrast, the mean DMDD score was close to "often a problem" (2 standard deviations above the general population mean) in children with ODD, autism, and ADHD-Combined type. DMDD scores were similar in the psychiatric early childhood, late childhood, and adolescent age groups, but were higher in preschoolers because of frequent temper outbursts.
Conclusions: DMDD symptoms are rare in a population-based sample and are common in ODD, autism, and ADHD-Combined type regardless of age. The DSM-5 acknowledges that DMDD symptoms are common in multiple disorders, but recommendations for handling comorbidity are inconsistent. For ADHD, co-occurring DMDD can be diagnosed. For autism, DMDD should not be diagnosed if autism explains the DMDD symptoms. If a child meets criteria for both ODD and DMDD, only DMDD can be diagnosed. Until more is known about the validity of DMDD, co-occurring DMDD symptoms should be noted with all disorders (as an additional diagnosis, subtype, or specifier). This would provide vitally important information so we can learn how DMDD symptoms, in isolation or in combination with other symptoms, affect functioning, prognosis, and treatment.

PROBLEM GAMBLING ONE YEAR LATER: THE COMBINED RISK OF RACE AND OBESITY

Lead Author: Eric W. Leppink, B.A.
Co-Author(s): Sarah A. Redden, B.A., Jon E. Grant, J.D., M.D., M.P.H.

SUMMARY:
Background: Gambling is a common activity among young adults, of whom a significant subset will develop problem gambling. In order to identify those at risk for problem gambling, current research has identified numerous predictors of gambling severity and cognitions. Two variables that may offer insight into gambling behavior are body mass index (BMI) and race. Previous research on problem gamblers has found significant differences in behavior and neurocognition based on BMI and race. Obesity is a common concern for problem gamblers. Obese gamblers tend to lose more money gambling and show deficits on certain neurocognitive tests relative to gamblers with lower BMIs. Similarly, previous research on race has suggested that subjects identifying as people of color (POC) may differ in gambling behavior relative to Caucasian subjects, specifically relating to gambling severity and neurocognition. Although prior research has indicated relationships between race, BMI, and gambling behavior, their effect on the

longitudinal course of problem gambling is unclear, as no studies to date have assessed this question. Given this dearth of available findings, the present analysis assesses the role of race and BMI in problem gamblers followed for a one-year period, examining rates of remission based on BMI classification and racial identification.
Methods: 163 non-treatment seeking young adults (18â€“29 y/o) with problem gambling (1+ symptoms based on the Structured Clinical Interview for Gambling Disorder [SCI-GD]) were recruited for the study. Subjects were then grouped by both race and overall BMI at baseline. BMI groups were identified as normal weight (NW), overweight (OW), or obese (OB) (<25=NW, 25-24.9=OW, 30<=OB). Race was grouped into those identifying as POC (African American, American Indian, Asian, Hispanic/Latino) or Caucasian. Subjects completed the SCI-GD questionnaire to determine baseline problem gambling criteria, as well as a variety of measures of gambling behavior and severity. These measures were repeated one year later. Baseline and 1 year scores were used to determine symptom remission (SCI-GD score of 0) on the basis of BMI and racial classifications.
Results: 22 subjects qualified as OB, 35 as OW, and 106 as NW. 45 subjects identified as POC and 118 as Caucasian. 73.6% of the NW group was in remission after 1 year, compared to 65.7% in the OW group, and 45.5% in the OB group. 72.0% of Caucasian subjects were in remission after one year while only 57.8% of the POC achieved remission. These results were even more pronounced in POC who were also classified as OB or OW, with only 38.9% showing remission.
Discussion: These results suggest that BMI and race may be compounding risk factors for problem gambling symptoms. This information may be beneficial for clinicians treating POC with weight and gambling problems, as it will allow for a more accurate identification of gamblers who are unlikely to show remission simply as a function of time.

AN EMPIRICAL STUDY OF TRAUMA, DISSOCIATION, FANTASY PRONENESS, AND DELIBERATE SELF-HARM IN AN ADULT SAMPLE OF PSYCHIATRIC INPATIENTS

Lead Author: Luke A. Ibach, M.A.
Co-Author(s): Thomas Bowers, Ph.D., Amanda White., B.S., Ahmad Hameed, M.D.

SUMMARY:

Introduction: Psychiatric inpatients report high rates of traumatic experiences. Many believe these experiences precipitate the development of dissociation and deliberate self-harm. Some authors contend that dissociation mediates the relationship between trauma and self-harm. Others point to fantasy proneness contributing to endorsement of dissociative symptoms independently of trauma. We predicted that pathological dissociators would report significantly more self-harm than non-pathological dissociators. We also predicted a moderate correlation between dissociation and fantasy proneness.

Method: Adult psychiatric inpatients (n = 41, 75% female) completed the Dissociative Experiences Scale, Creative Experiences Questionnaire, and Deliberate Self-Harm Inventory self-report measures. Empirically-derived cut-off scores differentiated subjects who reported clinically significant symptoms. Trauma history was extracted via chart review.

Results: Independent samples t-tests identified differences in scores of self-harm between groups of high and low dissociators. Pearson's correlation and chi-square tests determined the relationship between all dependent measures. A Binary logistic regression assessed the degree of variance in a criterion variable accounted for by an independent predictor.

All 41 participants were included in our analyses. 82% reported at least one traumatic event (n = 34) and 61% had a significant history of self-harm (n = 25). Analyses revealed a moderate positive correlation between dissociation and self-harm ($r(39) = .40$, $p = .008$; $r = .438$, $X2$ (1, n = 41) = 7.85, $p = .005$). Dissociation accounted for 30% of the variance in significant self-harmer classification ($R2 = .297$, $p = .009$), correctly identifying 70% of cases. Pathological dissociators (M = 5.53, SD = 3.47; n = 13) reported significantly more methods of self-harm (($t(39) = 3.23$, $p = .002$) than non-pathological dissociators (M = 2.39, SD = 2.60; n = 28). Pathological dissociators (M = 53.92, SD = 41.08) also reported significantly more total episodes of self-harm ($t(39) = 2.12$, $p = .040$) than non-pathological dissociators (M = 24.85, SD = 40.61). We found a moderate positive correlation between dissociation and fantasy proneness ($r(39) = .562$, $p < .001$).

Discussion: We found evidence to support both hypotheses. Dissociation showed a moderate relationship to self-harm and showed utility in the classification of significant self-harm history. These findings support the anti-dissociation hypothesis as a plausible explanation for self-harm. Consistent with previous research, fantasy proneness exhibited a moderate correlation with dissociation. Therefore, individuals with chronic histories of self-harm could potentially benefit from expressive therapies that promote adaptive coping and distress tolerance through creative exploration of fantasy.

VIRTUAL ATTACKS: DISCOURSE ANALYSIS AND PROXY TESTING IN THE ASSESSMENT OF A POTENTIALLY DANGEROUS STUDENT

Lead Author: Timothy Lewis
Co-Author(s): G.A.E Griffin, L.C.P., Ph.D., Timothy Lewis, Declan Creed

SUMMARY:

Violent school attacks remain statistically infrequent, and there is no effective profile for identifying the potentially violent student. However, since virtual space and social media have facilitated the comparatively abundant expression of virtual violence, this abundance warrants the development of new methodologies. We utilized Discourse Analysis to examine the 111 emails sent by a college student to staff of a small liberal arts college. The analysis identified discursive themes predictive of the expression of physical violence; e.g., crusading and name-calling. An axial deductive analysis of Content Themes identified modes of expression that allowed us to positively identify the student as the author much more violent post, tweets and emails sent by the same student using false names. His email correspondence formed the database for proxy psychological testing, which converged in identifying the student as pathologic and dangerous.

CREATION OF A RESIDENTIAL TREATMENT UNIT FOR THOSE WITH SERIOUS MENTAL ILLNESS IN A JAIL SETTING

Lead Author: Peter Martin, M.D., M.P.H.
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Evelyn Coggins, M.D.
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Daniel Antonius, Ph.D.

SUMMARY:

BACKGROUND: Individuals with mental illness represent a significant portion of people who are incarcerated in the United States. Those identified with severe psychiatric illness may have a higher incidence of criminal justice system contact following an initial arrest, are more likely to be homeless at the time of arrest, have longer criminal histories, and tend to serve 5-15 months on average longer sentences. While it is well recognized that mental health services are a necessary presence in state prisons and jails in order to provide

treatment to a growing mentally ill population, little is known about their effectiveness. Further, literature focusing on the provision of mental health treatment in jails versus prisons appears virtually nonexistent.

PURPOSE: The purpose of this study was to examine the efficacy of a Residential Treatment Unit (RTU) for individuals with serious mental illness in a jail setting. Specifically, the study examined whether inmate receipt of mental health services within the RTU resulted in changes across broad domains of assessment and outcomes, including psychiatric symptomology, psychological health and well being, state anger, motivation and energy, negative thinking, and affectivity.

METHODS: Participants were referred to the RTU based on several admission criteria. Primary baseline assessments (including the Mini International Neuropsychiatric Inventory [MINI], Personality Assessment Inventory [PAI], Wechsler Adult Intelligence Scale - IV [WAIS-IV], and Clinical Global Impression â€“ Severity of Illness Scale [CGI-S]) were performed at admission with additional assessment collected at baseline and biweekly (including the Brief Psychiatric Rating Scale [BPRS], Motivation and Energy Interview [MEI], Schwartz Outcome Scale - 10 [SOS-10], State and Trait Anger Expression Inventory - 2 [STAXI-2], Automatic Thoughts Questionnaire [ATQ], and Positive and Negative Affectivity Schedule [PANAS]). A comprehensive treatment plan was followed, including individual counseling, group therapy (comprising of eight modules), and medication management. Weekly meetings with security staff facilitated treatment and safety concerns.

RESULTS: Preliminary findings from 44 participants with serious mental illness suggest overall improvement in symptoms across multiple domains as measured by the above scales. Average length of stay was 57 days (range: 18-217). The majority were diagnosed with schizophrenia (47%) and had a mean Full Scale IQ of 80. Participants showed significant improvement in total psychopathology ($p<0.001$), anxiety and depression ($p=0.004$), thought disturbance ($p=0.017$), well-being ($p=0.07$), negativistic thinking ($p=0.001$), positive and negative affect ($p=0.002$), and anger ($p=0.05$).

CONCLUSIONS: A residential treatment unit specifically for those with SPMI in a jail setting showed improvement across a variety of psychological measures during a relatively brief time period.

SUBSTANCE USE IN PAKISTANI PRISON POPULATION

Lead Author: Mir N. Mazhar, M.D.
Co-Author(s): Tariq Munshi, MRCPsych., Sarosh Khalid-Khan, M.D., Asad Nizami, MBBS.

SUMMARY:

With population of around 180 million, Pakistan is the world's 6th most populous country. Considered to be a developing country, it is ranked 145/187 countries under 2011 United Nations Human Development Index. A quarter of people in Pakistan are estimated to be living on less than 1.25 USD a day. Low literacy rate, financial hardships and poverty, drug trafficking from neighboring Afghanistan, which by mane estimates is the largest opioid producer in the World, is considered to be another factor contributing to the substance abuse problem in Pakistan. Prison statistics have been more difficult to obtain with the best estimate in a 2000 United Nations Report (1) which stated "Prisons were found to have the largest numbers of drug addicts, at any given time, of any institution in the country. Prison drug addicts constitute between 20 and 40 percent of the total prison population. Most prison addicts languish in custody for prolonged periods and receive extremely

limited drug-related care". Much higher prevalence rate of 59.2%, for illicit drug use with in 6 months of incarceration, was found in an important study carried out in Central Jail of the southern port city of Karachi (2). 11.8% of prisoners reported intravenous drug use, out of which 46% admitted to sharing needles. 77% of the prisoners reported smoking cigarettes and use of other tobacco products. The higher prevalence of drug and alcohol use in the prison population in Pakistan is particularly concerning due to re-offending because of addiction, potential for spread of infectious diseases both with in the prison and the general communities where the prisoners are being released to. We believe that there is a strong need for correctional services in Pakistan to learn from the addiction treatment models being adopted both globally and regionally to control the epidemic of drug use. There is a strong need for prison based screening programs focusing on early intervention. Prison data could provide useful epidemiological information into a subset of high risk population. Education and awareness programs along with vocational training inside prisons could break the cycle of re-offending. .

MULTIDISCIPLINARY TREATMENT PROGRAM FOR OBESE PATIENTS IN VALLECAS (MADRID)

Lead Author: Cristina Banzo Arguis, M.D.
Co-Author(s): Aurora Doll , M.D., Antonio PÃ©rez Nevot , M.D., Rocio Moreno , M.D., Raquel MartÃnez de Velasco, M.D., Miriam FÃ©lix M.D., Francisco Javier Quintero, Ph.D.

SUMMARY:

INTRODUCTION
Obesity is a high prevalent disease with great impact in life quality and can become a risk factor to development of other health problems. Most of treatment programs usually focus on control of diet and exercise, with minimal long-term impact. The causal and maintenance role of psychological and emotional distress has been showed in recent literature. Including these factors in a multidisciplinary treatment could improve interventions effectiveness.
AIMS
Obesity Unit of Psychiatry Department was created to offer first-class medical treatment to patients with obesity in a district of Madrid (Vallecas) since 2011. The main objective is to obtain diagnostic information about the patients in order to decrease the prevalence of obesity in our community.
METHODS
We are presenting the data of the 100 first patients referred to our Unit, 5 people were excluded due to exclusion criteria. Sociodemographic and clinical data were obtained from evaluation interviews and were complemented by a battery of psychometric tests.
RESULTS
The average BMI is 41 (SD 6.8). The average age, 41.7 (SD 12.7) and 76 patients were women. 85% of the patients were not able to maintain weight loss. 50% of the patients had consulted a physician before. 95% of patients have taken a pharmacological treatment. No one had followed a combined treatment, addressing physical and emotional aspects together.

CONCLUSIONS
A specific multidisciplinary treatment is recommended in these patients. In addition to pharmacological treatment, our integral attention program also includes a psychoeducational group one a month and a psychotherapy group once a week.

IDENTIFICATION OF EATING DISORDERS AMONG INDIVIDUALS WITH PSYCHIATRIC DISORDER IN TERTIARY PSYCHIATRIC FACILITY

Lead Author: Robbie Campbell, M.D.
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SUMMARY:
Background: Comorbidity of eating disorders and its behavioral traits are common amongst psychiatric patients. Eating disorders are often missed or misdiagnosed which leads to poorer clinical outcome and low functioning, though it is a treatable condition. Patents with eating disorders also tend to have severe psychopathology, which increases risk of suicide, duration of hospitalization and polypharmacy. The present study examines the presence of comorbid eating disorders and their behavioral symptoms in hospitalized adult psychiatric patients.
Methods: The study was carried out at the RMHC London. This is an open level cohort study in a naturalistic clinical setting. We randomly selected 91 patients between ages of 25 to 60 years and assessed for screening of eating disorders using the Eating Attitudes Test (EAT-26) scale. Psychopathology and suicidality was assessed using the Brief Psychiatric Rating Scale (BPRS) for psychosis, Hamilton Depression Rating Scale (HDRS) for depression and Scale for Impact of Suicidality-Management, Assessment and Planning of Care (SISMAP) for suicidality. Data was analyzed by SPSS.
Results: A total of 16.5 % (15/91) showed presence of an eating disorder (EAT-26 score >20). For the 91 with EAT-26 scores, there were 44 males and 47 females. Significantly more females) had eating disorders compared to males (29.8% 14/47 female vs. 3% 1/44 males (p<. 001) and no difference was observed in mean age of those with and those without an eating disorder. (Mean age of 42.1 in those <=20 compared to 37.8 in those >20, p=.
271. Patients with the possibility of a diagnosis of an eating disorder (EAT >20) showed significantly higher suicidality than those without it as measured by SIS-MAP brief scanner score (11.1 vs. 8.4, p= 013).
Conclusions: Our study shows that behavioral traits of eating disorders can be identified. 16.5% hospitalized patients, predominantly females 29.8% showed possibility of a diagnosis of an eating disorder. These patients were having significantly higher suicidality scores.

PSYCHOLOGICAL FACTORS IN APPALACHIAN PATIENTS SEEKING BARIATRIC SURGERY

Lead Author: Chad B Crigger, M.P.H.
Co-Author(s): Amos Turner, B.S., M.B.A., Marie Veitia, Ph.D., Suzanne Holroyd, M.D.

SUMMARY:
Introduction. Recent data suggest that 78 million adults in the United States are obese as defined by a body mass index of 30 or greater. West Virginia, with an obesity prevalence of 33.8%, ranks third among states in which obesity is most common. Bariatric surgery, cited as the most effective and durable treatment for obesity, has increased dramatically in recent years. As obesity and its co-morbid conditions is a leading cause of death, a rigorous understanding of the obese patient seeking bariatric surgery is essential. The purpose of the present study is to describe pre- and co-morbid psychiatric and medical conditions in a population of pre-surgical candidates for bariatric surgery over a 3-month period in an Appalachian community.

Methods. Medical records of 101 patients psychologically evaluated for bariatric surgery, at an academic psychiatry clinic from 02/16/14 to 09/22/14, were examined. In addition to a clinical interview, all participants completed self-reported, psychological instruments including the Millon Behavioral Medicine Diagnostic (MBMD), the Multidimensional Locus of Control (MHLOC), the Questionnaire on Eating and Weight Patterns (QWEP) and the Moorehead-Ardelt Quality of Life II. Statistical analysis was conducted using the SPSS Version 22.0 software.

Results. In total, 101 patients participated in this study; one patient was unable to

accurately complete diagnostic testing due to cognitive deficits and she was omitted from the statistical analysis. The final sample of 100 patients consisted of 21 men and 79 women with a mean age of 43.5 years (SD = 11.4). The mean BMI was 47.6 kg/m2 (SD = 6.5, R = 1.7-67.1 kg/m2). Using the NIH Obesity Classification, 7 participants were classified as Class II (BMI: 35-39 kg/m2) and 93 were classified as Class III (BMI: 40 kg/m2 or greater). When utilizing the WHO's classification for BMI of 50 kg/m2 or greater, 34 individuals were classified as "Super Obese." The chronic medical conditions most impacting our sample were: cardiac hypertension (n = 73), chronic pain (n=76), and arthritis (n=44). A previously diagnosed psychiatric condition was reported by 63 individuals: the most often reported diagnoses were mood disorder (n = 45), anxiety disorder (n = 38), and panic disorder (n = 20). Data obtained from psychological instruments will be presented.

Conclusion. Patients presenting for bariatric surgery evaluations have a high rate of pre-morbid psychiatric disorders (63%). Among those with psychiatric diagnoses, depression and anxiety were the most common disorders reported in our sample. These findings stress the importance of an increased clinical suspicion of underlying and undiagnosed psychiatric conditions in morbidly obese patients in an Appalachian community and the need of more robust community resources that could serve to intervene earlier in a patients' progression through obesity.

DEVELOPMENT OF THE BINGE EATING DISORDER SCREENER

Lead Author: Barry K. Herman, M.D.
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SUMMARY:

Background:
Binge eating disorder (BED) was first included as a specific diagnosis in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). Twelve-month prevalence rates of BED in US adult females and males are estimated at 1.6% and 0.8%, respectively. BED may be underdiagnosed due to a lack of awareness and familiarity in the general medical community. The objective of this project was to develop a patient-reported screener to identify individuals with probable BED for further evaluation by their physicians and/or referral to specialists.
Method:
Based on the DSM-5 diagnostic criteria and existing instruments, draft BED Screener (BEDS) items were developed. Items were reviewed with 3 academic and clinical BED experts, revised accordingly, and debriefed in two iterative sets of cognitive debriefing interviews with adults reporting BED-consistent characteristics.
In a multisite, cross-sectional, prospective, non interventional study, the BEDS was administered to 97 adults, each required to have a body mass index (BMI) of at least 19, and with approximately half of the sample self-reporting DSM-5 BED characteristics. A structured clinical interview (updated to reflect the DSM-5) was administered to participants, who also completed the BEDS and two additional self-report instruments (the Binge-Eating Scale [BES] and the Rand-36, measuring general health-status).
Data were used to evaluate the sensitivity and specificity of candidate classification algorithms, based on participants' BED diagnosis (presence or absence of BED). It was the BEDS developers' intent to optimize sensitivity-to ensure that those who truly have BED would be detected-as well as, to be conservative in identifying a broader range of individuals with probable BED-to ensure that no one would be missed for further evaluation and/or referral.
Results:

Following feedback from the experts, a 19-item version (including 6 alternative items) was tested in cognitive debriefing interviews (N = 13), resulting in a 13-item BEDS pilot version.
Based on the clinical interview, 16 participants (16.5%) were diagnosed with BED. An algorithm composed of 7 items (BEDS-7) produced optimal sensitivity (100%, 16/16) with reasonable specificity (38.7%, 29/75). These 7 items address the presence of overeating episodes in the last 3 months; lack of control; eating when not hungry; feelings of distress, embarrassment, and disgust; and self-induced vomiting.
Based on this algorithm, participants who were correctly identified-true positives-tended to have worse average BES and RAND-36 scores, indicating poorer health status, than participants identified as true negatives.
Conclusions:
The BEDS-7 is a sensitive and valid patient-reported screening tool that can be used to identify individuals with probable BED, identify the need for further evaluation, and facilitate referral. Future research should be conducted to test the real-world feasibility and value of the BEDS.

CHARACTERIZATION OF BINGE EATING BEHAVIOR IN INDIVIDUALS WITH BINGE EATING DISORDER IN A US ADULT POPULATION

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Co-Author(s): Barry K. Herman, M.D., M.M.M., Kirk Solo, M.B.A., Jason Valant, B.A., Emily Conway, B.A., Millicent Nwankwo, B.A., Carlos M. Grilo, Ph.D.

SUMMARY:

Introduction: Binge eating disorder (BED) is formally recognized as a distinct eating disorder in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). However, there is a scarcity of data on the characteristics of binge eating behaviors in individuals with BED. A large community survey estimated the 12-month projected US DSM-5 BED prevalence rate to be 1.64% and collected detailed information on binge eating behaviors in BED-symptomatic respondents.
Hypothesis: Characterize binge eating behaviors in terms of frequency, duration, and severity in a large community-based sample of US adults who met full DSM-5 criteria for BED.
Methods: A representative sample of US adults was recruited from an online panel and asked to respond to an Internet survey (conducted in October 2013) that included questions designed to assess binge eating behaviors in relation to DSM-5 BED diagnostic criteria.
Results: Of 22,397 respondents, most were female (54.4%; n=12,182), white (82.7%; n=18,515), and â‰¥40 years of age (72.8%; n=16,315). In the past 12 months, 1.54% (n=344) of respondents met DSM-5 criteria for BED (BED-symptomatic respondents). A majority of BED-symptomatic respondents reported that binge eating episodes had occurred for the past 7â€“12 months (61.0%; n=210) and 93.6% (n=322) of respondents reported â‰¥2-3 binge eating episodes/week. All BED-symptomatic respondents reported that "extreme" (52.6%; n=181) or "great" (47.4%; n=163) distress levels were associated with binge eating episodes. Among BED-symptomatic individuals who provided detailed binge eating behavior data (n=308), 40.6% (n=125) reported binge eating on average more than once a day and most reported binge eating 2 or 3 times/day (59.2%; n=74). The meanÂ±SD highest number of binges/week ever experienced was 6.62Â±5.51; 114 (37.0%) respondents reported 4-8 binges/week. A total of 137 (44.5%) respondents reported that the duration of binge eating lasted 31-60 minutes. BED-symptomatic respondents reported they "very often" (36.6%; n=126) or "often" (34.0%; n=117) had urges to binge eat between 7 PM and 10 PM. The symptom reported as most bothersome by BED-symptomatic respondents (extremely bothersome: 41.9%; n=144) was 'feeling

disgusted with yourself, depressed, or very guilty after binge eating'.
Conclusions: To our knowledge, this is the first study to assess characteristics of binge eating behaviors in BED-symptomatic individuals using DSM-5 diagnostic criteria in a representative US adult sample. This research showed that binge eating frequency varied in BED-symptomatic respondents, but on average was once daily, and that most respondents exhibited binge eating behavior for a long duration (7-12 months), with a severity of binge eating symptoms that was often severe. These detailed descriptions of binge eating behavior highlight the burden of disease in BED and have potential implications for diagnosing and treating BED. (Sponsored by Shire Development LLC)

THE IMPACT OF HYSTERECTOMY AND CHRONIC PAIN ON QUALITY OF LIFE AMONG GERIATRIC PATIENTS ENROLLED IN AN INTERDISCIPLINARY PAIN REHABILITATION RROGRAM

Lead Author: Hope Cohen-Webb, D.O., M.P.H., M.S.
Co-Author(s): Larissa Loukianova, M.D., Ph.D., Jeannie Sperry, Ph.D., Karen Weiss, Ph.D., Dianna Bisek, M.D., Barbara Bruce Ph.D.

SUMMARY:

Objectives: Objectives of this study are 1) to examine quality of life in women 65 years and older with history of chronic pain and hysterectomy and 2) to examine ability to benefit from a comprehensive pain rehabilitation program

Background: Hysterectomy is the second most commonly performed surgical procedure among women of reproductive age. The United States has the highest rate of hysterectomy in the industrialized world with a lifetime risk of 45%, and almost one in three women have undergone this procedure by 60 years of age. Ten percent of women report pelvic pain as the primary preoperative indication and studies have shown that almost 22% of women with pelvic pain prior to hysterectomy continue to experience pain following surgery. Hysterectomy has been associated with negative health outcomes including chronic pelvic pain, pelvic organ prolapse, sexual dysfunction, bone fracture risk, cardiovascular disease, neurodegenerative disease, cognitive decline, depression, urinary difficulties, bowel dysfunction, cancer, and polypharmacy.

Methods: Four thousand seven women with chronic pain participated in the Mayo Clinic Pain Rehabilitation Center (PRC) Program between 1998 and 2012. Four hundred five (10%) of these women were 65 years and older and eligible for study inclusion. Demographic information and quality of life measures using the Short Form (36) Health Survey questionnaire (SF-36) were collected at admission.

Results: Among 405 geriatric study enrollees, 50 (12%) had a history of hysterectomy. These patients reported significantly worse mental health functioning on the SF-36 (M=38.7, DF=64) compared to those without hysterectomy (M=41.3, DF=64; (t=1.67, p=0.04) at admission. By the end of the program, the groups no longer differed on level of perceived functioning (M=49.0 and 48.0; t=0.82, p=0.21). More post-hysterectomy patients were using opioid medications (68%) compared to patients without hysterectomy (46%) at program admission. At program completion, both groups had reduced opioid use and no longer differed in rates of use (8% versus 7%, respectively). Self-reported functioning did not differ significantly on other subtests of SF-36: physical functioning, physical role limitations, bodily pain, vitality, and emotional role limitation at program admission and discharge.

Conclusions: Hysterectomy may be associated with worsened mental health functioning in older females with history of

chronic pain and higher rates of chronic opioid therapy compared to those without hysterectomy. Improvements in perceived mental health functioning and reduction in opioid medication use occurred following an intensive pain program.

THE REPETITIVE VISITS TO THE PSYCHIATRIC EMERGENCY SERVICE OF THE TEACHING HOSPITAL IN TURKEY: A COMPARATIVE STUDY OF THE YOUNG AND ELDERLY GROUPS

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Co-Author(s): Ã–zlem Cetinkaya, M.D., MÃ¼nevver H. YÄ±ldÄ±rÄ±m, M.D., GÃ¶ksen YÃ¼ksel M.D., Mehmet Cem Ã°lnem, M.D., Ejder AkgÃ¼n YÄ±ldÄ±rÄ±m. M.D.

SUMMARY:
Objective: This study aims to compare the young and elderly population in terms of the socio-demographic qualities of the patients above 18 years old who have applied to the Psychiatric Emergency Service of BakÄ±rkÃ¶y Prof. Dr. Mazhar Osman Training and Research Hospital of Psychiatry, Neurology and Neurosurgery two or more times within a year, their clinical characteristics, features, causes of using the emergency service and their diagnoses. Method: 324 patients above 18 years old, who have administered to the psychiatric emergency service two or more times between the dates of January 2011 and January 2012, were selected. The files of the patients have been reached through the data processing registry of our hospital. Using the retrospective method, the information obtained from the files was recorded in the information retrieval form. The data of the patients who have been separated into two groups of 18-65 years and 65 years old and above was transferred to the SPSS program and was evaluated from the statistical point of view. Results: The total of 324 patients have been taken into the study 157 of them being between the ages of 18-65 and 167 of them being 65 years old and above. No difference between the groups was found in terms of the gender distribution. It was found that in comparison to the young group, the elderly group had lower level of education and higher rate of obtaining social security, they would apply to the service more with relatives, the duration of the disease was longer, and the treatment rate in the emergency was higher. The frequent symptoms of young group were hyperactivity, somatic complains, reference delusions while the main symptoms of elder group were dysmnesia, visual hallucinations, verbal violence, efforts to run away from home). In terms of diagnosis distribution, the diagnoses of young group were mostly bipolar mood disorder, depression and use of the alcohol on the other hand the diagnoses of the elderly group were mostly the psychosis and dementia. The request of examination and consult during the visits to the emergency services and presence of other medical conditions in the elderly patients were higher. The rate of psychiatric medication use before administrating to the emergency service was higher in the elderly group. During the statistical comparison made by separating the groups into three groups according to the number of visits, no significant difference among the groups was detected. All the indicated differences did not show the statistical significance. Conclusions: The young and elderly groups having repeatedly applied to the psychiatric emergency service does show difference in terms of socio-demographic qualities, clinical diagnosis, clinical approaches and features of use of the psychiatric emergency service. We believe that understanding the features and causes of repetitive visit to the emergency service shall be significant for indicating the needs of the both groups in this field, fo

DEVELOPMENT OF AN EVIDENCED BASED CHECKLIST TO SUPPORT REDUCTION AND STOPPAGE OF ANTI-DEMENTIA MEDICATION IN PATIENTS WITH INTELLECTUAL DISABILITY(ID)

Poster Presenter: Velayudhan Nair Sunil Ram MRCPsych
Co-Author(s): Dr Sunil Ram MBBS MRCPsych, MRCPsych, Dr David Cox MBBS Mrcpsych, Dr Sarah Whitwham D Clin Psy C Psychol. PgDip AFBPsS, Mrs Sharon Axby MSc

SUMMARY:
Introduction:
Patients with Dementia are prescribed anti-dementia drugs to reduce the rate of progress. Discontinuation is recommended when clinical benefit can no longer be determined, if rate of decline of global/cognitive function worsens after initiation of therapy and if therapy becomes unacceptably risky i.e. concurrent medical conditions or futile i.e. end-of-life. After therapy discontinuation, people should be monitored for significant decline in cognitive status, functional abilities, or development or worsening of behaviors. If there is significant deterioration in any area, consideration should be given to re-initiate medication. In the ID population it is more complex as any ill effect of stopping the drug needs to be weighed in balance to the normal changes and disturbance of on-going organic process to extraneous factors such as environment, sensory impediments and physical health issues esp. in subpopulations of Down Syndrome.
Hypothesis:
Can identified risk factors extracted from a comprehensive literature review be developed into an evidence based check list to support risk minimized person centered withdrawal of anti-dementia drugs when considered not to be efficacious in the ID population?
Method:
A detailed literature review using Medline, Psych Info, Cinahl and Embase databases with 20 keywords in different permutations and combinations was conducted to see if there is any evidence-based structured approach to stopping anti-dementia medication either in ID or general population. The literature review also looked to extract the common risk factors in stopping anti-dementia medication in ID and general population. All risk factors identified were collated and reviewed by a focus group of experts, developed into a checklist and implemented prospectively on 25 ID patients.
Results:-
No papers identified a structured approach to medication reduction in either the ID or general population or specifically looked at risks in the ID population. When examined for medication reduction risk in the general population 30 papers were initially identified of which 6 were considered relevant. The factors extracted along with specific ID factors were discussed by a multi-disciplinary panel of experts in a focus group. A checklist of 18 factors was applied prospectively to 25 cases. The checklist was sensitive to identify change to guide and support clinical decision making.
Conclusions:
The assessment and monitoring of ID patients with Dementia is complex and there is no evidence or a structure regarding when anti-dementia medication may be discontinued. The decision to peg medication withdrawal risk is arbitrary and clinical. From our research the ascertained risk factors could be employed in clinical practice as a checklist to support and structure clinical decisions in this vulnerable population. An evidence based checklist helps clinicians and patients to focus on promoting safety, reduce harm and guide treatment.

THE RELATIONSHIP BETWEEN MOOD AND PSYCHOTIC DISORDERS, PERSONALITY DISORDER TRAITS, AND SEXUAL FANTASIES IN PSYCHIATRIC INPATIENTS

Lead Author: Erika K. Concepcion, M.D.
Co-Author(s): Giancarlo Colon Vilar, M.D., Erika Concepcion, M.D., Lisa J. Cohen, Ph.D

SUMMARY:

OBJECTIVE: Sexuality is an important aspect of quality of life and sexual fantasies comprise a normal part of human sexuality. The nature of sexuality and sexual satisfaction of patients with mental illness, however, remains an understudied area (Quinn & Browne, 2009). To address these questions, the current study compared the frequency of four types of sexual fantasies across four different psychiatric diagnoses, and we explored the interaction between comorbid personality pathology and severe mood and psychotic disorders with regard to the nature of sexual fantasies.

METHODS: One hundred and thirty three (133) English-speaking inpatients between the ages of 18 and 65 were recruited from an urban hospital. Four major mood and psychotic disorders were evaluated: schizophrenia, bipolar, schizoaffective, and major depressive disorder (MDD). To determine mood or psychotic diagnosis, subjects were administered the Structural Clinical Interview for DSM-IV Axis I (SCID-I). To determine personality disorder traits, subjects were administered the SCID-II. Sexual fantasies were assessed by the Wilson Sexual Fantasies Questionnaire (WSFQ), a forty item self-report questionnaire, which measures 4 types of sexual fantasies: exploratory, intimate, impersonal, and sadomasochistic. Participating subjects were compensated $10.00 per hour, up to $40.00 for their time.

RESULTS: Sexual fantasies were compared across the 4 SCID-I diagnostic groups using ANOVA. There were no significant differences across mood and psychotic diagnostic groups for any of the sexual fantasy scores. Total scores for each personality disorder cluster were calculated and transformed into binary variables by median split. Sexual fantasy scores were then compared across high and low scoring groups for each personality cluster by ANOVA's. Patients with high Cluster A scores scored lower on intimate fantasies, while patients with high Cluster B scores scored significantly higher on all 4 fantasy scales. There were no significant interaction effects between Cluster B scores and SCID I diagnoses vis a vis sexual fantasy scores.

CONCLUSIONS: Personality pathology appears to have a greater impact on sexual fantasies than do mood and psychotic disorders. Clinicians should attend to comorbid personality pathology when treating patients with mood and psychotic disorders.

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Quinn C, Browne G. (6/2009). "Sexuality of people living with a mental illness: a collaborative challenge for mental health nurses". International journal of mental health nursing (1445-8330), 18 (3), p. 195.
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INCREASING EXERCISE & DECREASING WEIGHT: A MINDFULNESS-BASED GROUP INTERVENTION FOR LESBIANS

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Co-Author(s): Danielle A. Schlosser, Ph.D., Michelle Cataldo, L.C.S.W., Shahara Godfrey, Ph.D., Lindsey Williams, Martha Shumway, Ph.D.

SUMMARY:
Objective: Epidemiologic data document that lesbians have higher rates of obesity than heterosexual women. Cultural norms valuing thinness are often not as resonant for lesbians as for heterosexual women. However, when lesbians consider the link between weight and health concerns such as cardiovascular disease and diabetes, many express a desire to lose weight by increasing physical activity. Mindfulness-Based Eating Awareness Training is an evidence-based intervention that integrates mindfulness practices with exercise and other practical strategies for weight management and health improvement. This pilot study evaluated the acceptability and impact of MB-EAT for lesbians.

Methods: Participants were lesbians, age 18 years and older, with a body-mass index >24. Participants attended 2-hour group meetings weekly for 10 weeks, followed by 2 additional groups at monthly intervals. Participants completed a range of self-report measures of physical and psychological health, mindfulness, and weight-related behaviors at study entry and after sessions 5, 10 and 12. They monitored their physical activity using an electronic activity tracker. Weight was measured at group meetings.

Results: Eight women completed the intervention; three dropped out, two due to personal reasons unrelated to the group. Participants were ethnically diverse with a mean age of 49. All had attended college; 63% held graduate degrees; all but one was employed. Participants had significant trauma histories, with 63% reporting childhood trauma. Of the 8 participants who completed the intervention, all lost weight; 3 lost at least 5% of their original body weight. On average, participants increased their physical activity by 30% and engaged in activity greater than or equivalent to 10,000 steps per day 35% of the time. Participants reported sustained improvements in general health (+32%), mindful eating (+23%), compensatory eating restraint (+28%), and routine eating restraint (+58%). Stress (-29%) and emotion dysregulation (-18%) decreased between baseline and the end of the weekly group meetings, but returned to baseline levels after weekly meetings ceased. Overall satisfaction with the group was high, with participants noting the importance of having an all lesbian group. Participants found content focused on exercise and stress reduction to be more useful than content on calorie counting.

Conclusion: In this pilot study, the manualized MB-EAT intervention was acceptable and effective for lesbians. Convening groups specifically for lesbians and sexual minority women is warranted. Future implementations could be modified to decrease emphasis on calorie counting. Longer interventions with continued support should be evaluated for women experiencing the high levels of stress observed in this group.

FDA/NIMH TRIAL OF FLUOXETINE VS. PLACEBO IN PEDIATRIC BODY DYSMORPHIC DISORDER

Lead Author: Eric Hollander, M.D.
Co-Author(s): Eric Hollander MD, Casara J Ferretti MS, Bonnie P Taylor PhD, Rachel Noone MD, Ellen Doernberg, Jessica Simberlund MD, Susan McElroy MD, William Menard and Katharine Phillips MD

SUMMARY:

Background: Body dysmorphic disorder (BDD)--a preoccupation with an imagined or slight defect in appearance--is a distressing and impairing disorder that usually begins during childhood or adolescence. However, the treatment of BDD in pediatric populations has received only minimal investigation. Many patients with BDD receive a variety of psychotropic medications, including neuroleptics, although their efficacy has not been adequately demonstrated. Available data suggest that BDD and its delusional variant may respond to serotonin-reuptake inhibitors (SRIs) and that this class of medications may also be effective in pediatric populations.

Objective: To increase knowledge about BDD and assess the efficacy and safety of the SRI fluoxetine.

Methods: Of 57 children screened, 44 children aged 16 years and younger with a diagnosis of BDD were enrolled across 4 sites (Brown, Einstein/Montefiore, Mt. Sinai, U. Cincinnati) into a 12 week randomized double-blind, parallel group trial of fluoxetine vs. placebo. 34 subjects were study completers. Inclusion criteria included a score of â‰¥ 24 on the BDD-

YBOCS, no previous treatment with fluoxetine and no concurrent psychotherapy. Subjects completed 1 week of placebo lead in, and nonresponders were randomized. Weight-based flexible dosing was used with titration until week 6 and a maximum dose of 60 mg. Biweekly visits included standard medical evaluations, and parent, clinician and subject rated assessments. The primary outcome measure was the BDD-YBOCS. Demographic and diagnostic data were collected using the KSADS and BDD Data Form.

Results: A comprehensive description of the 44 children randomized is presented including demographic characteristics, age of onset, co-morbidity and severity data. Primary analyses assessed the efficacy of fluoxetine vs. placebo with the hypothesis that fluoxetine would be significantly more effective than placebo using the BDD-YBOCS as the dependent measure. We conducted the same analyses with the BDD-CGI-I, and secondary outcome analyses on the C-GAS, CY-BOCS, HAM-D, CBCL, YSR and measures of self-esteem, body image, and social anxiety. We also determined whether the presence of delusionality, co-morbid major depression, OCD, or illness severity predicted treatment response.

Discussion: This study provided much needed information about the demographics and diagnostic features of children with BDD and essential data for product development. It is important that treatments for BDD continue to be studied, as symptoms can be chronic and severely disabling, and usually begin during childhood/adolescence as a possible pathological response to the physical and physiologic changes of adolescence. Furthermore, pediatric-onset BDD appears to interfere with the developmental tasks of childhood/adolescence, to have a more malignant course of illness than adult-onset BDD, and, when untreated, to persist and cause substantial morbidity throughout the lifespan.

THE RELATIONSHIP BETWEEN CLUTTER BLINDNESS, MOTIVATION FOR CHANGE, AND TREATMENT OUTCOME IN HOARDING DISORDER

Lead Author: Stephanie Taillefer
Co-Author(s): Catherine Chater, MSc.OT, Alda Melo, MSc.OT, Sandra McKay, Ph.D., Margaret Richter, M. D.

SUMMARY:
Background: Hoarding disorder is characterized by the acquisition of, and persistent difficulty discarding, a large number of possessions. Treatment can be particularly difficult, as individuals often have limited motivation for change or insight into the severity of the problem. Indeed, patients often report that they do not notice their own clutter, a phenomenon termed clutter blindness. While it has been repeatedly noted clinically, few studies have systematically examined clutter blindness, or how this construct may be related to motivation or treatment outcome. Method: The Clutter Image Rating (CIR) scale is a pictorial assessment of the severity of clutter using a visual analogue scale displaying differing levels of clutter severity. Participants with hoarding disorder (n = 15) were asked to rate their living room, kitchen, and bedroom on the CIR, while experimenters completed the CIR independently in the participant's home. Two weeks later, participants were shown photographs of their own home and completed the CIR again. Results: Intraclass correlations were computed as a measure of interrater reliability. Participant and experimenter ratings showed good reliability, while showing participants photos of their own home prior to rating resulted in excellent reliability. For those participants deemed 'clutter blind', preliminary analysis suggests a relationship with outcomes in CBT. Conclusions: Showing individuals photographs of their home may be an easy and effective

strategy to combat clutter blindness and enhance motivation for change. The implications of clutter blindness for treatment will be discussed.

PRELIMINARY ANALYSIS OF POSTTRAUMATIC STRESS DISORDER SYMPTOMS AND BRAIN EMOTION ACTIVATION OF OHIO NATIONAL GUARD SOLDIERS

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SUMMARY:
Deployment of National Guard soldiers has increased in the past several years with the recent wars in Iraq and Afghanistan. Symptoms and pathophysiology of deployment-related PTSD in National Guard members is understudied in relation to other groups of soldiers. The current pilot study investigates the psychiatric symptoms and brain activation during an emotional task of Ohio National Guard (ONG) soldiers who are diagnosed with PTSD symptoms. The participants are selected from an ongoing longitudinal observational study of Ohio soldiers. The participants report symptoms using the Depression Anxiety Stress Scales (DASS) and Self-Compassion Scale, and complete an emotion regulation task during functional MRI (fMRI) scans. PTSD diagnosis was based on a structured interview using the Clinician Administered PTSD Scale (CAPS). Thirty-two subjects participated in the study so far, and 10 participants met full PTSD and 2 participants met partial PTSD diagnoses. The preliminary comparison between PTSD and non-PTSD soldiers revealed significantly higher DASS values for depression (PTSD: 7Â±6.5; non-PTSD: 2Â±3.0, $p<0.05$), anxiety (PTSD: 5Â±4.2; non-PTSD: 2Â±2.9,), and stress (PTSD: 9Â±4.9; non-PTSD: 3Â±3.0, $p<0.05$) than the non-PTSD group (all $p<0.05$). The PTSD group reported significantly lower self-compassion (M=18Â±3.0) than the non-PTSD group (M=22Â±4.7; $P<0.05$). Finally, activation of the left dorsolateral prefrontal cortex (dlPFC) during reappraisal of aversive pictures was significantly less in the PTSD group than the non-PTSD group ($p<0.005$). The preliminary results suggest that ONG soldiers who are diagnosed with PTSD are more symptomatic and have altered brain activation associated with emotion regulation as compared to the ONG soldiers who do not have PTSD.

SEXUALITY AND PSYCHOSIS: COMPARISON BETWEEN A GROUP OF STABILIZED PATIENTS IN REHABILITATION AND CONTROLS

Lead Author: Pablo M. Gabay, M.D.
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SUMMARY:
OBJECTIVES: To compare the sexual life of psychotic stabilized patients living in a residence in the community, where they attend a rehabilitation program, with a control group. METHODOLOGY: self-administered questionnaire. Contingency non-parametric tests 2x2 or multiple responses. Alpha error < 5% was considered significant. RESULTS: DEMOGRAPHIC: 49 subjects: 19 patients; 30 controls. Diagnosis: schizophrenia (15), mental retardation with psychotic features (2), psychotic depression (1), OCT with psychotic features (1). No patient was married, 15.8% were divorced and 84.2% were single. PATIENTS -MEN vs. WOMEN: Current sexual desire (p=0.024): no = 38.9% (M 16.7%, W 83.3%), yes = 61.1% (M 8.3%, W 16.7%). Sexual relationships (p=0.014): Never (M 5.9%, W 14.3%). PATIENTS vs. CONTROLS - MALES: Erection (p=0.022): never (P 10% vs. C 0%), rarely (P 20% vs. C 11.1%), sometime (P 40% vs. C 0%), frequently (P 30% vs. C 66.7%), daily (P 0% vs. C 22.2%); Maintain

erection (p=0.02): P (never 18.2%, rarely 18.2%) vs. C (0%); erection in 50% of occasions (P 36.4% vs. C 11.1%); frequently (P 9.1% vs. C 44.4%); always (P 18.2% vs. C 44.4%). Number of sexual relations in lifetime (p=0.001): never (P 8.3% vs. C 0%); 1-50 times (P 75% vs. C 0%); More than 51 times (P 16.7% vs. C 100%). Life w/partner (p=0.014): never (P 77.8% vs. C 11.1%); sometimes (P 22.2% vs. C 88.9%). Difficulties for orgasm (p=0.046): none (P 36.4% vs. C 88.9%), problems (P 63.6% versus C 11,1%). Children (p=0.007): no (P 90% vs. C 22.2%); yes (P 9.1% vs. C 77.8%). PATIENTS vs. CONTROLS - FEMALES: Pleasure w/sex life (p=0.031): none (P 71.4% vs. C 4.8%), Frequency of sexual activities (p=0.000): none (P 85.7% vs. C 4.7%). Sex thoughts (p=0.020): never (P 28.6% vs. C 0%), more then twice/week (P 0% vs. C 52.4%). Frequency of sexual arousal (p=0.010): never (P 57.1% vs. C 0%), rarely (P 14.3% vs. C 9.45%). Sexual phantasies (p=0.022): none (P 66.7% vs. C 4.8%). Arousal thinking about sex (p=0.022): no (P 66.7% vs. C 4.8%). Current sexual desire (p=0.004): no (P 83.3% vs. C 9.5%). Current masturbation (p=0.023): no (P 85.7% vs. C 28.06%). Sexual partner (p=0,015): none (P 83.3% vs. C 19%). Stable partner (p=0.003): none (P 100% vs. C 23.8%). Beliefs that mental illness influences their life (p=0.007): (P 71.4% vs. C 4.8%). Fear of rejection by partner because of MI (p= 1.023): P 57.1% vs. C 0%). Beliefs that medication alters their sexual life (p= 0.036): P 66.7% vs. C 9.5%. DISCUSSION: Psychotic subjects present sexual difficulties. Female patients have more sexual difficulties than male patients. Male patients have more sexual problems than male controls. Female patients show more problems than female controls. CONCLUSIONS: disturbances of sexual life are common in subjects with severe mental illness, especially in women. Clinicians should always ask about sexual life to their psychotic patients. Sexual education is needed in rehabilitation settings.

KYNURENIC ACID TO QUINOLINIC ACID RATIO IS DECREASED IN AFFECTIVE PSYCHOSIS

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SUMMARY:
Elevated levels of inflammatory markers have been widely reported in individuals with mood disorders and schizophrenia. Inflammation may affect mood and psychosis indirectly by activating the tryptophan degrading enzyme, indoleamine 2,3 dioxygenase (IDO), increasing the formation of neuroactive kynurenine-pathway metabolites, including kynurenic acid (KynA), an NMDA and alpha7 nicotinic receptor antagonist, and quinolinic acid (QA) a neurotoxin that acts as an NMDA receptor agonist. We recently reported a reduction in the KynA/QA ratio in non-psychotic individuals with major depressive disorder (MDD) and bipolar disorder (BD) relative to healthy controls (HC), and further showed that KynA/QA was positively associated with hippocampal and amygdalar volumes, raising the possibility that the balance between the relative levels of KynA and QA may influence neurotoxicity. In contrast, schizophrenia and bipolar mania have been associated with an increase in KynA, theoretically predisposing to psychosis. However, the relative concentrations of KynA and QA have not been studied in the same patients with psychosis or schizophrenia. Here we evaluated serum concentrations of kynurenine pathway metabolites in HCs (n=33) and hospitalized inpatients who met DSM-IV-TR criteria for MDD (n=27, n=6 with psychosis), BD (n=20, with psychosis=12), schizoaffective disorder

(SA, n=16) or paranoid schizophrenia (SZ, n=5). Kynurenine metabolites were measured blind to diagnosis by high performance liquid chromatography with tandem mass spectrometry by Brains Online. Mean KynA/QA value and standard error across groups were as follows: BD with psychosis (0.087, 0.009) < MDD with psychosis (0.094, 0.008) < SA (0.099, 0.010) < MDD without psychosis (0.113, 0.012) < SZ (0.124, 0.019) = BD without psychosis (0.124, 0.014) < HC (0.133, 0.008), with the first 3 groups differing significantly from HCs ($p<0.05$), but SA no longer significant ($p<0.1$) after correction for multiple comparisons. KynA was reduced in all patient groups versus HCs, although only the difference between the SA and HC groups reached significance before correction for multiple comparisons. There was no significant difference between groups in the ratio of kynurenine to tryptophan, a proxy measure of IDO activity, raising the possibility that the abnormalities in the relative metabolism of KynA and QA are not fully accounted for by differences in inflammation. The results are consistent with our previous findings of reduced KynA/QA in depressed outpatients with MDD and BD and additionally raise the possibility that the abnormality in kynurenine pathway metabolism is most salient in acutely ill patients with affective psychosis. Our results should be treated as preliminary given the small sample sizes, particularly in the SZ group. A larger group of samples are currently being analyzed to test whether SZ can be differentiated from SA and affective psychosis on the basis of kynurenine pathway metabolism.

CARIPRAZINE REDUCES AGITATION AND HOSTILITY ASSOCIATED WITH SCHIZOPHRENIA

Lead Author: Leslie Citrome, M.D., M.P.H.
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SUMMARY:

Introduction: Agitation is common in patients hospitalized with acute exacerbation of schizophrenia. Patients experiencing severe agitation display excessive motor and verbal activity, are irritable and uncooperative, and frequently show aggressive or destructive behavior. Effective control of agitation is an important goal of antipsychotic treatment.

Cariprazine is a potent dopamine D3 and D2 receptor partial agonist with preferential binding to D3 receptors. The efficacy and tolerability of cariprazine in patients with acute exacerbation of schizophrenia has been supported by 3 phase II/III studies (NCT00694707, NCT01104766, NCT01104779). A pooled analysis evaluated the effects of cariprazine on agitation and hostility symptoms in schizophrenia patients.

Methods: Data were pooled from 3 double-blind, placebo-controlled trials. Studies were similar in design and included 6 weeks of double-blind treatment; the primary efficacy measure in all studies was the Positive and Negative Syndrome Scale (PANSS). Cariprazine dose groups were combined for analyses (dose range, 1.5 to 9 mg/day). Patients were hospitalized at screening and for â‰¥4 weeks of treatment. Agitation and hostility were evaluated using the Positive and Negative Symptom Scale Excited Component (PANSS-EC; items G4, G8, G14, P4, and P7) and PANSS hostility factor (items G8, G14, P4, and P7). Changes in agitation were assessed in the pooled intent-to-treat (ITT) population (n=1466) and in the subgroup of patients with clinically relevant levels of agitation (PANSS-EC score â‰¥14 and at least 1 PANSS-EC item â‰¥4)(n=646).

Results: The least squares mean difference (LSMD) for mean change from baseline in PANSS-EC scores was significantly greater in the cariprazine group vs placebo in both the ITT population (LSMD [95% CI]=-1.5 [-

2.0, -0.9], P<.0001) and in patients with high levels of agitation at baseline (LSMD [95% CI]=-1.8 [-2.7, -0.9], P=.0001). Similar results were observed for changes in PANSS hostility factor scores (LSMD [95% CI] for ITT: -1.2 [-1.6, -0.7], P<.0001; agitation subgroup: -1.5 [-2.2, -0.7], P=.0002). In both the ITT population and the agitation subgroup, significantly (P<.05) greater improvements for cariprazine vs placebo were seen for all 5 PANSS items related to agitation/hostility: tension, uncooperativeness, poor impulse control, excitement, and hostility.

Conclusions: Cariprazine treatment demonstrated significant reductions in agitation and hostility symptoms relative to placebo as measured by PANSS components and PANSS items related to agitation and hostility. Effects on agitation were observed both in the ITT population as well as in the subgroup of patients with clinically relevant levels of agitation. These results suggest that cariprazine is effective in reducing agitation and hostility in patients with acute exacerbation of schizophrenia. Supported by funding from Forest Laboratories, LLC, an affiliate of Actavis, Inc., and Gedeon Richter Plc.

THE EFFECT OF BREXPIPRAZOLE (OPC-34712) VERSUS ARIPIPRAZOLE IN ADULT PATIENTS WITH ACUTE SCHIZOPHRENIA: AN EXPLORATORY STUDY

Lead Author: Leslie Citrome, M.D., M.P.H.
Co-Author(s): Ai Ota, B.Sc., Kazuhiro Nagamizu., Pamela Perry, M.Sc., Emmanuelle Weiller, Psy.D., Ross Baker, Ph.D, MBA.

SUMMARY:

Background: There is a need for a rational approach to the treatment of schizophrenia that optimizes symptom control without tolerability trade-offs that affect the patient's ability to remain on treatment and maintain meaningful social interactions. Brexpiprazole is a serotonin-dopamine activity modulator (SDAM) 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 has a lower intrinsic activity at the D2 receptor than the only currently available D2 partial agonist, aripiprazole, suggesting a lower potential to induce D2 agonist-mediated adverse events such as akathisia, insomnia, restlessness, and nausea. In this open-label study the effects of 6-week treatment with brexpiprazole or aripiprazole in patients with schizophrenia were explored (NCT02054702).
Methods: Patients who would benefit from hospitalization or continued hospitalization for acute relapse of schizophrenia were enrolled and randomized to flexible doses of open-label brexpiprazole 1 to 4mg/day (3mg/day target dose) or aripiprazole 10 to 20 mg/day (15 mg/day target dose) (2:1) for 6 weeks. The efficacy endpoint was the change in Positive and Negative Syndrome Scale (PANSS) total score from baseline to Week 6 and additional endpoints were the change in Barratt Impulsiveness Scale (BIS-11) total score from baseline to Week 6.
Results: A total of 97 patients were enrolled and randomized to brexpiprazole (N=64) or aripiprazole (N=33). A reduction in the symptoms of schizophrenia assessed by the PANSS total score was observed from baseline to week 6 in patients treated with brexpiprazole and in patients treated with aripiprazole (LS mean change at week 6: -22.9 and -19.4 for brexpiprazole and aripiprazole, respectively). A divergent signal on impulsivity was observed assessed by the BIS-11 total score though a relatively small change was observed and the sample size was small (mean change at week 6: -2.7 and 0.1 for brexpiprazole and aripiprazole, respectively). Brexpiprazole was well tolerated and the incidence of EPS-related adverse events including akathisia was lower in the patients treated with brexpiprazole (14.1%) compared with the patients treated with aripiprazole (30.3%). No clinically relevant changes in

the mean laboratory test values, vital signs, or ECG parameter values were observed.
Conclusion: Clinically relevant improvements in psychopathology were observed in patients with acute schizophrenia treated with brexpiprazole or aripiprazole. Brexpiprazole was well tolerated with a lower incidence of EPS-related adverse events than aripiprazole.

DYSEXECUTIVE SYNDROME IN SCHIZOPHRENIA: DAILY LIFE DEFICITS OBSERVED BY SIGNIFICANT INFORMANTS

Lead Author: Erika De Diego Herrero
Co-Author(s): Delgado, O., Nieto, A., HernÃ¡ndez-Torres, A., Barroso, J.

SUMMARY:
Introduction: It has been proposed that frontal lobe executive deficits play an important role in schizophrenia. Dysexecutive problems are particularly important by their potential impact on functional outcome. Our aim was to assess the degree of executive failure in daily life and to study if different executive components are similarly affected.

Methods: Twenty-six schizophrenic patients, age range 26-55, participated in the study. Patients problems in daily life functioning were rated by a relative or caregiver using the Dysexecutive Questionnaire (DEX; Burgess et al, 1998). DEX is a 20-items questionnaire aimed to cover the most commonly reported symptoms of the dysexecutive syndrome. Each item is scored on a 5-point (0-4) Likert Scale ranging from "Never" to very Ooften" An overall score on the DEX was calculated for each participant, representing the sum of ratings across the 20 questions (higher scores representing greater impairment). Component scores, were obtained for each of the five DEX factors (average of items scores included in each factor): Inhibition, Intentionality; Executive Memory; Positive and Negative Affect problems.

Results: Patients were classified using the cut-off proposed by Pedrero et al., (2011). 7,7 % of patients showed an optimal functioning; 11,5% were within normality, but showed a sub-optimal functioning; 7,7% were moderately dysexecutive and 73,1% presented an important degree of dysexecutive disorder. ANOVA for the five components was significant (p= 0.000). Significantly higher scores were obtained in Intentionality (Intentionality vs Inhibition p= 0.000; vs Executive memory: p= 0.000; vs Positive affect: p= 0.000) and Negative Affect problems (Negative Affect vs Inhibition p= 0.010; vs Executive memory: p= 0.000; vs Positive affect: p= 0.016). Executive Memory was the less impaired factor.

Conclusions: Our results showed that a relevant percentage of schizophrenic patients have moderate/severe executive deficits as rated by informants. The ability to formulate and to follows appropriate plans and positive affective symptoms were the main problems informed. Deficits in the Executive aspects of memory, such as confabulation, inability to recall the correct order of events or perseveration, were the less observed.

INITIATING ARIPIPRAZOLE LONG-ACTING INJECTABLE IN THE ACUTE INPATIENT SETTING FOR THE TREATMENT OF SCHIZOPHRENIA

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Co-Author(s): Jennifer Perry, M.D., Dimitrios Kyriakopoulos, M.D., Karyn Ayre, M.D., Omar Murad, M.D., Rosanna Moss, M.D., Achmed Kamara, M.D.

SUMMARY:
INTRODUCTION. Initiating long-acting injectable (LAI) antipsychotics in the inpatient setting may expedite transition from oral to LAI treatment and facilitate patients' discharge and aftercare. LAI aripiprazole, an atypical antipsychotic that acts as a dopamine D2 partial agonist, seems effective and well tolerated as

maintenance treatment in schizophrenia. This small naturalistic study assessed the acceptability, effectiveness and safety of initiating LAI aripiprazole in the acute setting.

METHODS. We prospectively examined outcomes in 10 acutely psychotic patients with schizophrenia (age 37.9Â±13.3, meanÂ±s.d.) admitted to our all male unit who were offered aripiprazole LAI after responding to oral aripiprazole 10-20 mg daily, range 2-3 weeks. We collected data on demographics, illness duration, comorbidity and previous medication. All were assessed twice, on initiation of oral aripiprazole and at the time of the first 400 mg LAI, using three scales. The Health of the Nation Outcome Scale (HoNOS) covers behaviour, risk, symptoms and social function, the Brief Psychiatric Rating Scale (BPRS) measures psychotic symptoms and the Global Assessment of Function (GAF) rates psychosocial function. Oral aripiprazole was continued for 2 weeks after the first LAI. Outcomes were reviewed at the time of the second LAI, one month after the first injection.

RESULTS. A decrease in BPRS score from 60.4Â±21.1 to 33.4Â±10.0 (p=0.001) was reached from the point of starting oral aripiprazole to the first LAI dose. Improvement also occurred in HoNOS from 19.4Â±7.2 to 11.6Â±6.9 (p=0.02) and GAF from 24.6 Â± 11.5 to 52.5 Â± 12.2 (p=0.001). Correlation in BPRS and GAF improvement (Pearson's r=-0.7, $p<0.05$) indicated that symptom amelioration was accompanied by improved social functioning. Therapeutic response included improvement of positive and negative symptoms. 2 patients experienced mild akathisia that resolved spontaneously. Initiation of LAI aripiprazole was uneventful, as was the co-prescription of oral aripiprazole during the following 2 weeks. At the time of the second LAI, 7 patients had been discharged and remained clinically well, 2 patients were fit for discharge but waiting for accommodation, and 1 patient relapsed after discharge and was readmitted.

CONCLUSIONS. Probing response to oral aripiprazole played a key part in the transition to LAI treatment. For most patients, improvement in the clinical and social functioning domains facilitated a safe and uncomplicated progression to LAI treatment and their discharge. Side effects of aripiprazole were mild and transient, and well tolerated. Therapeutic response was maintained after discontinuation of oral dosing and by the time of the second LAI. Longer-term response of this patient group to aripiprazole LAI needs to be ascertained, yet LAI antipsychotics can be safely initiated in a manner that is acceptable to patients and conducive to adherence to treatment even when patients are acutely unwell.

PATTERNS OF HEALTH CARE SERVICES UTILIZATION AND COSTS AMONG YOUNG ADULT COMMERCIAL ENROLLEES PRIOR TO INITIAL SCHIZOPHRENIA DIAGNOSIS

Lead Author: Rachel Halpern, M.P.H., Ph.D.
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Larry Martinez, R.Ph., Ph.D.
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SUMMARY:
Background: While symptoms consistent with schizophrenia (SCZ) typically appear from ages 13-30 years, diagnosing SCZ can be challenging because psychosis and other symptoms can be attributable to a host of mental health- (MH-related) conditions.
Objective: To describe characteristics of individuals diagnosed with SCZ in the 3-year period before their initial SCZ diagnosis and explore patterns of healthcare utilization, costs, and MH-related conditions.
Methods: This retrospective claims data analysis examined commercial health plan

members from the Optum Research and the Impact National Benchmark Databases. Subjects were newly diagnosed with SCZ (primary ICD-9-CM 295.XX) from January 2007 - February 2013. The initial SCZ diagnosis was from an inpatient (IP) stay or from an ambulatory setting followed within 6 months by â‰¥1 additional SCZ diagnosis and/or â‰¥1 antipsychotic medication. Subjects were â‰¥18 years old in the year of the 1st SCZ diagnosis and continuously enrolled for 3 years before (baseline) and 1 year after diagnosis. Baseline MH-related conditions, measured per 3-month quarter, included bipolar/mania, depression, attention deficit (hyperactivity) disorder (ADHD), obsessive-compulsive disorder (OCD), anxiety, other psychotic disorders (delusional or unspecified psychoses), and substance abuse. Baseline all-cause and MH-related health care utilization and costs also were measured by quarter. Descriptive analysis was performed.
Results: The final sample was 1,278 subjects with mean (standard deviation) age 21.7(3.1) years and 68.9% male. MH conditions, utilization, and costs increased during the 3-year baseline period with the largest increases in the quarter immediately before the initial SCZ diagnosis. The percentage of subjects with bipolar/mania increased from 5.3% to 20.4% from 34-36 months (1st quarter) to 3 months (last quarter) before the 1st SCZ diagnosis. Similarly, from 1st to last baseline quarter: depression increased from 8.7% to 23.2%; ADHD from 3.1% to 5.6%; OCD from 1.2% to 2.5%; anxiety from 2.3% to 10.0%; other psychotic disorders from 1.7% to 15.8%; and substance abuse from 2.2% to 9.7%. The percentage of subjects with â‰¥1 baseline all-cause and MH-related emergency (ER) visit from 1st to last quarter increased from 8.7% to 36.8% and from 4.6% to 30.3%, respectively. Subjects with â‰¥1 all-cause and MH-related IP stay increased from 4.0% to 20.0% and from 3.8% to 19.8%, respectively. Mean all-cause and MH-related medical costs from 1st to last baseline quarter increased, respectively, from $1,288 to $4,957 and from $787 to $4,079.
Conclusion: Subjects newly diagnosed with SCZ appeared to show increasing signs of mental health disorders and increased health care utilization leading up to the initial diagnosis. MH conditions may have been comorbid or part of empirical diagnoses. Timely and accurate diagnosis of schizophrenia is critical if young patients are to receive appropriate care that may improve outcomes.

EFFECT OF LURASIDONE DOSE ON COGNITIVE IMPAIRMENT IN PATIENTS WITH SCHIZOPHRENIA: POST-HOC ANALYSIS OF A LONG-TERM CONTINUATION STUDY

Lead Authors: Philip Harvey, Ph.D., Cynthia Siu, Ph.D.

SUMMARY:
Background
We reported that treatment with 160 mg/d of lurasidone improved cognitive performance in a manner superior to placebo, quetiapine XR 600 mg/day, and lurasidone 80 mg/ day in a 6-week randomized study of patients with acute schizophrenia. Following the 6-week study, patients were treated with either flexibly-dosed lurasidone or quetiapine in a blinded continuation study. The objective of this analysis was to evaluate dose effects of lurasidone on cognitive performance and on a functional co-primary measure, with a goal of determining if longer term treatment with other doses were associated with cognitive benefits.
Methods
Acutely admitted patients with schizophrenia were treated with one of two doses of lurasidone (80 or 160 mg/day), placebo, or 600 mg/day quetiapine XR in a 6-week acute treatment study. Following the acute study, placebo patients were switched to lurasidone, while lurasidone and quetiapine patients remained on their original treatment. Lurasidone (40-160

mg/d) and quetiapine XR (200-800 mg/d) were dosed flexibly in the continuation study. Cognitive performance and functional capacity were assessed with the CogState computerized cognitive battery and the UPSA-B at baseline and 6 weeks in the acute study, and at 3 and 6 months in the continuation. A post-hoc analysis of the cognitive and functional capacity performance of patients whose final doses of lurasidone were 40/80 mg/d, 120 mg/d, and 160 mg/d at the 6-month continuation study assessment was conducted to evaluate lurasidone dose effects compared to quetiapine XR 200-800 mg/day.

Results

Subjects receiving final doses of lurasidone 120 mg/d ($p<0.05$, n=77) and 160 mg/d ($p<0.05$, n=51) showed significantly greater improvement in overall cognitive performance compared to quetiapine XR 200-800 mg/d (n=85) at week 32, while those on last dose of 40/80 mg/d (n=23) showed a trend towards significance (p=0.06, n=23). Mean changes in neurocognitive composite z-score from acute phase baseline to endpoint were significant for the 3 lurasidone final dose groups ($p<0.05$), with composite change scores of scores of z=1.53, z=1.43, and z= 1.34 for the lurasidone 40/80 mg/d, 120 mg/d, and the 160 mg/d, respectively. In contrast, the change in neurocognitive composite z-score was not statistically significant in the overall quetiapine group (z=0.46) ($p>0.05$), with none of the individual quetiapine doses showing significant improvements. Functional capacity scores improved in all treatment groups.

Conclusions

Our findings support the potential for improving cognitive performance in patients treated with each of the doses of lurasidone 40-160 mg/d, compared to quetiapine XR 200-800 mg/d. All doses of lurasidone were superior to all doses of quetiapine for cognitive performance. The discrepancies in dose response compared to the 6-week study need to be further studied, but the change scores were too substantial to be attributed to practice effects.

EFFICACY AND SAFETY FROM A 6-WEEK DOUBLE-BLIND TRIAL OF ASENAPINE 2.5 AND 5 MG BID IN ADULTS WITH AN ACUTE EXACERBATION OF SCHIZOPHRENIA

Lead Author: Carla Hundt

Co-Author(s): Carla Hundt, M.D., Ronald Landbloom, M.D., Mary Mackle, Ph.D., Xiao Wu, Ph.D., Linda Kelly, Ph.D., Linda Snow-Adami, B.A., Roger S. McIntyre, M.D., FRCPC, Maju Mathews, M.D.

SUMMARY:

Introduction: Asenapine (ASN) is an atypical antipsychotic approved for acute and maintenance treatment of adults with schizophrenia as well as manic or mixed episodes associated with bipolar I disorder at doses of 5 mg twice daily (bid) or 10 mg bid.[1] In one randomized controlled trial of patients with schizophrenia, the ASN 5 mg bid dose had an improved safety profile over the ASN 10 mg bid dose,[2] providing the impetus for evaluating the safety and efficacy of a lower dose of ASN.

Hypothesis: To evaluate the efficacy and safety of ASN 2.5 mg bid or 5 mg bid relative to placebo (PBO) in adults with schizophrenia.

Methods: In this 6-week, double-blind, double-dummy, fixed-dose, PBO- and active-controlled, multicenter trial, patients were randomized 2:2:2:1 to PBO, ASN 2.5 mg bid, ASN 5 mg bid, or olanzapine (OLZ) 15 mg once daily (qd). The primary efficacy outcome was the change from baseline in positive and negative symptom scale (PANSS) total score for ASN vs PBO at day 42. Secondary efficacy analyses included evaluation of ASN vs PBO in the Clinical Global Impression Severity of Illness (CGI-S) and rate of PANSS responders. Safety was monitored throughout the trial.

Results: Overall, 360 patients were randomized to treatment; 60 (58.3%), 52 (53.1%), 67 (59.3%), and 35 (76.1%) patients completed in the PBO, ASN 2.5

mg bid, ASN 5 mg bid, and OLZ groups, respectively. Least-squares (LS) mean change from baseline in PANSS total score at day 42 was â€“16.2 for PBO, â€“17.4 for ASN 2.5 mg bid (P=0.6043 vs PBO), â€“21.7 for ASN 5 mg bid (P=0.0178 vs PBO), and â€“21.6 for OLZ (P=0.0587 vs PBO). No statistically significant difference was observed between ASN or OLZ and PBO for the change in CGI-S from baseline to day 42 or for PANSS responders.
Safety results are similar to previous studies of ASN; rates of serious adverse events were generally low. Among key safety events (insomnia, extrapyramidal symptoms [EPS], somnolence, akathisia, hypoesthesia/dysgeusia combined, and dizziness), insomnia was most common and was reported by 13.9%, 9.3%, 15.0%, and 8.7% of patients treated with PBO, ASN 2.5 mg bid, ASN 5 mg bid, and OLZ, respectively. Oral hypoesthesia/dysgeusia was reported by 5.2% and 7.1% of patients treated with ASN 2.5 mg bid and ASN 5 mg bid, respectively; neither adverse event was reported with olanzapine or placebo. The incidence of other key safety events was similar between treatment groups.
Conclusions: Improvements in the symptoms of schizophrenia were observed in patients treated with the established 5 mg ASN dose (P=0.0178 vs PBO) and OLZ 15 mg qd (P=0.0587); however, ASN 2.5 mg bid did not separate from PBO. ASN was generally safe and well tolerated.
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DISRUPTED FRONTAL-THALAMIC CONNECTIVITY IN ASYMPTOMATIC ADOLESCENT CHILDREN OF SCHIZOPHRENIA PATIENTS

Lead Author: Pranav Jagtap
Co-Author(s): Vaibhav Diwadkar, Ph.D.

SUMMARY:

Background: Sustained attention deficits appear to increase the risk for schizophrenia in adolescent children of patients. In particular, the source of these deficits may be disordered "top-down" and "bottom-up" interactions between frontal-thalamic circuits, central in mediating attention processing (Posner, 2012). We investigated brain networks in adolescents at risk for schizophrenia and typical controls while participants performed a sustained attention task with variable demands. Our particular focus was to understand differential patterns of contextual modulation of bottom-up and top-down frontal-thalamic pathways by attention in high-risk subjects and controls.
Methods: Twenty-one healthy children (TC) and adolescents (11 â‰¤ age â‰¤ 20) and twenty asymptomatic adolescent children of schizophrenia patients (HR; 11 â‰¤ age â‰¤ 20) performed the identical pairs version of the continuous performance task (CPT-IT); attention demand was modulated by alternating between two-digit (low demand) and three-digit (high demand) epochs (120s). fMRI (3T) data was collected, and dynamic causal modeling (DCM) was employed to identify winning model architecture and investigate the effect of varying attention demand on frontal-thalamic interactions.
Results: Engagement of cortico-thalamic regions was identified using conventional activation-based methods. Bayesian model selection revealed identical generative model architectures in each of TC and HR. Contextual modulation of frontal-thalamic pathways was different in each group. In TC, the bottom-up thalamus --> dorsal prefrontal pathway was similarly (and positively) modulated in each condition. In comparison, HR showed increased positive gain in response to increased attention demand. The top-down pathway in TC was significantly more modulated during the high-demand condition. In comparison, HR group was characterized by aberrant top-down inhibition under conditions of attention.

Conclusion: These explorations appear to identify compelling correlates of attention-related dysfunction in frontal-thalamic pathways in HR. The functional architecture in TC depicts logical attention processing (no distinction between attention demand on bottom-up pathways; additional gain on top-down pathways in response to higher demands). This architecture appears significantly compromised in HR. Notably, bottom-up modulation appears aberrantly sensitive to task-demand, suggesting latent inefficiencies in the gating of information from the thalamus to the cortex that afflicts schizophrenia itself (Behrendt, 2006). Moreover, attention commitments appear to result in the disengagement of top-down frontal-thalamic pathways, suggesting functional disconnection originating from executive regions, a core characteristic of schizophrenia (Friston, 1999). Sustained attention appears to have systematic signatures in frontal-thalamic network dysfunction in risk for schizophrenia.

THE CEREBELLUM ACTIVATION IN YOUNG PEOPLE WITH FAMILIAL RISK FOR PSYCHOSIS â€“ THE OULU BRAIN AND MIND STUDY

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Co-Author(s): Vesa Kiviniemi, M.D., Ph.D., Juha Nikkinen MSc, Ph.D, Jouko Miettunen, Ph.D., Pirjo MÃ¤ki, M.D., Ph.D., Sari Mukkalaa MSc., Jenni Koivukangas M.D., Tanja NordstrÃ¶m MSc, Juha Parkkisenniemi MS, Irma Moilanen M.D., Ph.D., Jennifer H. Barnett, M.A., Ph.D., M Peter B. Jones, M.D., Ph.D., Graham K. Murray, M.D., Ph.D., Juha Veijola, M.D., Ph.D.

SUMMARY:
Objective: The cerebellum plays a critical role in cognition and behaviour. Altered function of the cerebellum has been related to psychosis and schizophrenia but it is not known how this applies to resting state activation in people with familial risk for psychosis (FR).

Methods: We conducted a resting-state functional MRI (R-fMRI) in 72 (29 male) young adults with a history of psychosis in one or both parents (FR) but without psychosis themselves, and 72 (29 male) similarly healthy control subjects without parental psychosis. Both groups in the Oulu Brain and Mind study were drawn from the Northern Finland Birth Cohort 1986. Participants were 20-25 years old. Parental psychosis was established using the Care Register for Health Care. R-fMRI data pre-processing was conducted using independent component analysis with 30 and 70 components. A dual regression technique was used to detect between-group differences in the cerebellum with $p<0.05$ threshold corrected for multiple comparisons.

Results: FR participants demonstrated statistically significantly increased activity compared to control subjects in the anterior lobe of the right cerebellum. The volume of the increased activation with 70 components was 73 mm3. There was no difference between the groups in the analysis with 30 components.

Conclusion: The activity of the cerebellum differed in the anterior lobe of the right cerebellum between FR and control groups when using 70 components. This suggests that abnormal activation in the anterior lobe of the right cerebellum may increase vulnerability for psychosis.

EFFECTS OF CARIPRAZINE ON HEALTH-RELATED QUALITY OF LIFE IN PATIENTS WITH SCHIZOPHRENIA

Lead Author: RenÃ© Kahn, M.D., Ph.D.
Co-Author(s): Willie Earley, M.D., Kaifeng Lu, Ph.D., Adam Ruth, Ph.D., IstvÃ¡n Laszlovszky, Pharm.D., Suresh Durgam, M.D.

SUMMARY:
Introduction: While antipsychotics have generally shown efficacy in treating the

positive symptoms of schizophrenia, limited treatment benefits on negative symptoms, cognitive impairment, and depressed mood contribute to poor health-related quality of life. New antipsychotics with broad efficacy across multiple symptom domains are needed to achieve more favorable treatment outcomes in patients with schizophrenia.

Cariprazine is a potent dopamine D3 and D2 receptor partial agonist with preferential binding to D3 receptors. A pooled analysis of 2 positive, double-blind, placebo-controlled Phase III studies (NCT01104766, NCT01104779) evaluated the effects of cariprazine in improving health-related quality of life in patients with acute exacerbation of schizophrenia.

Methods: The 2 studies were generally similar in design and included 6 weeks of double blind treatment. All cariprazine dose groups were combined for the pooled analyses (dose range, 3 to 9 mg/day). Health-related quality of life was measured using the Schizophrenia Quality of Life Scale Revision 4 (SQLS-R4). Mean change from baseline to Week 6 in SQLS-R4 total score and the 2 SQLS-R4 subdomain scores (psychosocial feelings and vitality) were analyzed using an ANCOVA model; missing values were imputed using last observation carried forward (LOCF). The relationship between changes in SQLS-R4 scores and changes in Positive and Negative Syndrome Scale (PANSS) scores was evaluated using Pearson correlation coefficients.

Results: A total of 791 patients (263 placebo; 528 cariprazine) were included in the pooled intent-to-treat (ITT) population. Cariprazine treatment compared with placebo resulted in significantly greater improvement in SQLS-R4 total scores at Week 6 (least squares mean difference [LSMD]: -6.2 (95% CI: -9.1, -3.3); P<.0001). Cariprazine also demonstrated significantly greater improvement in SQLS-R4 psychosocial (LSMD [95% CI]: -3.5 [-5.4, -1.5]; P=.0007) and SQLS-R4 vitality (LSMD [95%CI]: -2.8 [-3.9, -1.6]; P<.0001) subdomain scores. In both treatment groups, improvements in SQLS-R4 total score was moderately correlated with improvements in PANSS total score (placebo, r=.31; cariprazine, r=.39) and PANSS positive score (placebo, r=.33; cariprazine, r=.31). Improvements in PANSS negative score was weakly correlated with improvements in SQLS-R4 in the placebo group (r=.15); however, the correlation between improvements in PANSS negative score and SQLS-R4 was stronger in the cariprazine group (r=.29).

Discussion: In this pooled analysis, cariprazine demonstrated significantly greater improvement relative to placebo on SQLS-R4 total score and both subdomains. Correlation analyses suggest that improvements in both the positive and negative symptoms of schizophrenia following cariprazine treatment are associated with improvements in quality of life. This study was supported by funding from Forest Laboratories, LLC, an affiliate of Actavis, Inc., and Gedeon Richter Plc.

THE RELATIONSHIP BETWEEN METABOLIC SYNDROME AND URIC ACID CONCENTRATION IN PATIENTS WITH SCHIZOPHRENIA

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SUMMARY:

OBJECTÄ°VE: In some studies uric acid concentrations are lower in patients with schizophrenia than healthy control group and thought that was associated with oxidative stress and may be affected by antipsychotic treatment. Some researchers are considered that hyperuricemia is a component of the metabolic syndrome and in general population studies have shown a

positive relationship between uric acid and prevalence of metabolic syndrome. The aim of this study was to determine the prevelance of metabolic syndrome and investigate the relationship between metabolic syndrome and uric acid concentrations.
METHOD:100 inpatients diagnosed as schizophrenia according to DSM-IV criteria have been enrolled Their measurements of blood temperature, waist circumference, weight and height were made, their body mass indexes (BMI) were calculated. Fasting blood glucose, HDL-cholesterol ,triglyceride and uric acid concentrations were obtained from the patients' laboratory data. Diagnosis of metabolic syndrome was made according to the International Diabetes Federation (IDF)-2005 criteria.
RESULTS: 32 % of the patients was diagnosed as metabolic syndrome according to IDF criteria.There was not a significant difference between patient groups (gender ,smoking status and type of drugs) in terms of metabolic syndrome prevalence. Uric acid concentrations are lower in females than males. Uric acid concentrations are significantly higher in patients with metabolic syndrome than those without. Correlation test controlled for metabolic parameters showed that uric acid concentrations had significiant weak - moderate possitive correlations with weight, waist circumference, body mass index, sistolic , diastolic blood pressure, trigliserid and significant weak-moderate negative correlation with HDL. There was no significant correlation with LDL, cholesterole and glucose level.
CONCLUSÄ°ON:In this study, the frequency of metabolic syndrome in patients with schizophrenia was consistent with the results of previous studies in general population and somewhat lower than the studies in schizophrenia patients. Uric acid concentrations were significantly higher in patients with metabolic syndrome. Uric acid concentrations are lower in females than males in whole patiens included to study.

SAFETY AND TOLERABILITY OF CARIPRAZINE IN PATIENTS WITH ACUTE EXACERBATION OF SCHIZOPHRENIA: POOLED ANALYSIS OF 4 PHASE II/III PIVOTAL STUDIES

Lead Author: John M. Kane, M.D.
Co-Author(s): Kaifeng Lu, Ph.D., IstvÃ¡n Laszlovszky, Pharm.D., Willie Earley, M.D., Suresh Durgam, M.D.

SUMMARY:

Introduction:Cariprazine is a potent dopamine D3 and D2 receptor partial agonist with preferential binding to D3 receptors. The efficacy and tolerability of cariprazine in patients with acute exacerbation of schizophrenia were evaluated in 4 Phase II/III studies (NCT00404573, NCT01104766, NCT01104779, NCT00694707). Three of the 4 studies demonstrated superiority for all cariprazine groups relative to placebo. An integrated summary of safety and tolerability results from these 4 studies is reported here.
Methods:Data from 4 similarly designed, placebo-controlled, 6-week, randomized, double-blind trials were pooled. All cariprazine doses (1.5 to 12 mg/d) were combined for these analyses. Safety assessments included adverse events (AEs), clinical laboratory values, vital signs, weight, electrocardiograms (ECGs), Columbia-Suicide Severity Rating Scale (C-SSRS), and extrapyramidal symptom (EPS) scales.
Results:The pooled safety population comprised 1901 patients (placebo, n=584; cariprazine, n=1317). Completion rates were similar between groups (placebo, 57%; cariprazine, 62%). The most frequently reported treatment-emergent AEs (TEAEs) (â‰¥5% and twice placebo) were akathisia (placebo, 4%; cariprazine, 11%) and extrapyramidal disorder (placebo, 3%; cariprazine, 8%); most TEAEs were mild or moderate in severity. SAEs and discontinuations due to AEs were reported more frequently in the placebo group (7%

and 12%, respectively) than in the cariprazine group (5% and 9%, respectively); most SAEs were due to exacerbations of schizophrenia. Discontinuations due to EPS (including akathisia) were low in the cariprazine group (â‰¤2%). There were 2 deaths in the cariprazine group (1 suicide; 1 ischemic stroke/myocardial infarction); neither were considered related to treatment. TEAEs of suicidal ideation were similar between groups (placebo, 0.2%; cariprazine 0.3%).
Mean changes from baseline in weight were 0.32 kg with placebo and 1.07 kg with cariprazine. Mean changes from baseline to endpoint in blood pressure were generally similar between placebo and cariprazine at doses up to 6 mg/d and slightly greater in the cariprazine group at doses >6 mg/d. Cariprazine was not associated with mean increases in ECG parameters (QRS duration, PR interval, QT interval) except for a slight increase in ventricular heart rate relative to placebo (3.3 bpm and 0.5 bpm, respectively). Mean changes in metabolic parameters were similar across groups. Slightly higher mean increases in ALT and AST were observed in the cariprazine group relative to placebo. No patient met criteria for Hy's law. Mean prolactin levels decreased in both treatment groups.
Conclusions: In this pooled analysis of 4 double-blind, placebo-controlled trials, cariprazine was generally safe and well-tolerated for up to 6 weeks of treatment in patients with acute exacerbation of schizophrenia. This study was supported by funding from Forest Laboratories, LLC, an affiliate of Actavis Inc, and Gedeon Richter Plc.

MEDICATION ADHERENCE IN SCHIZOPHRENIA: RELATIONSHIP TO CLINICAL VARIABLES AND INSIGHT

Lead Author: Chan-Hyung Kim, M.D., Ph.D.
Co-Author(s): Jhin-Goo Chang, M.D., Daeyoung Roh, M.D., Ph.D.

SUMMARY:

Poor adherence to medication is one of the leading cause of relapse in schizophrenia. Unawareness of illness is a common feature of schizophrenia, so it could be a important reason for decreasing adherence. The purpose of this study was examining the relationships between medication adherence and clinical variables, including insight in outpatients with schizophrenia. Seventy-one 71 clinically stable outpatients with schizophrenia recruited from Severance mental health hospital in Korea. Adherence to medication was measured using Medication Adherence Rating Scale(MARS). Psychopathology was rated by the Brief psychiatric rating scale(BPRS) and Montgomery-Ã…sberg Depression Rating Scale(MADRS). Liverpool University Neuroleptic Side effect Rating Scale(LUNSERS) was used to check subjective adverse effect and Drug attitude Inventory-10(DAI-10) used to check subjective attitude toward medication. To Assess current insight, we used 3 global insight items(awareness of mental illness, awareness of need for treatment, awareness of the social consequences of disorder) which is a part of Scale for the Assessment of Unawareness of Mental Disorder(SUMD). Correlations and regression analyses were calculated between MARS, insight into illness and other clinical and sociodemographic variables. The results demonstrated that age($r=0.343$, $p<0.01$) and duration of illness($r=0.513$, $P<0.01$) were positively correlated with the MARS score. MARS score was correlated with the LUNSERS($r=â˜’0.287$; $P=0.032$). Awareness of the need for treatment(SUMDs) was related with Attitudes to drug($r=-0.287$, $p=0.017$), but MARS score has no relationship with Insight measured with SUMD subscale($r=-0.124$, $p=0.322$) and severity of psychotic symptoms($r=-0.214$, $p=0.085$). Through the result of multiple linear regression, medication compliance showed significant predictrive value for 3 variables, including the poor insight(SUMD>6, $B=-1.317$, $p=0.002$), Longer Duration of

illness(duration of illness>10yrs, B=1.671, p<0.001), and more side effect(LUNSERS>77, B=-1.864, p<0.001). We found that Insight, psychopathological status, and clinical factors seem to play a role in determining adherence. To maximize adherence we should give concern to reduce adverse effect of antipsychotics and to increase insight.

PREDICTORS OF RECEIVING AT LEAST 5 CLAIMS FOR ONCE MONTHLY PALIPERIDONE PALMITATE AMONG MEDICAID PATIENTS WITH SCHIZOPHRENIA

Lead Author: Patrick Lefebvre, M.A.
Co-Author(s): Marie-HÃ©lÃ¨ne Lafeuille, M.A., Yongling Xiao, Ph.D, Erik Muser, Pharm.D. M.P.H., Jacqueline Pesa, M.S.Ed. Ph.D M.P.H., John Fastenau, M.P.H. R.Ph., Mei Sheng Duh, M.P.H. Sc.D., Patrick Lefebvre, M.A.

SUMMARY:
Introduction: Paliperidone palmitate (PP) is a once-monthly long-acting injectable therapy for the treatment of schizophrenia. Long-acting injectable therapies may improve medication adherence and therefore reduce relapse in adult patients with schizophrenia. Examining factors associated with receiving 5 or more claims for PP may help to identify predictors of persistence.

Objective: To identify factors associated with the probability of receiving 5 or more outpatient pharmacy or medical claims for PP among adult patients with schizophrenia.

Methods: A retrospective longitudinal study was conducted using Medicaid claims data from 4 states (Iowa, Kansas, New Jersey, and Missouri). Adults with schizophrenia based on ICD-9 codes with â‰¥2 claims for PP within 90 days between 01/2010-03/2012 were identified, where the first claim served as the index date. Patients who had a â‰¥6-month post-index observation period were classified into two groups based on whether or not they received â‰¥5 claims for PP during the observation period without a gap between 2 claims greater than 60 days. Baseline information was assessed during the 6 months pre-index period. A multivariate logistic regression model was used to estimate the association between the baseline covariates and the probability of receiving â‰¥5 PP claims.

Results: Among 920 patients with â‰¥2 claims for PP within 90 days, 707 (77%) received â‰¥5 PP claims while 213 (23%) patients had <5 PP claims during the observation period. Patients in the two groups did not differ in terms of demographic characteristics. Patients receiving â‰¥5 PP claims had longer duration of observation (mean: 15.4 vs. 10.2 months [p <0.001]), and were more likely to have prescriptions for other antipsychotics (APs) in the baseline (83% vs. 77% [p=0.0525]). Baseline all-cause medical healthcare costs appeared similar between the two cohorts (mean: $9,478 vs. $9,063 [p=0.6076]). In a model including all potential predicting factors and controlling for difference in duration of observation, living in Missouri (vs. New Jersey: odds ratio (OR) = 2.32 [p=0.0002]), having more schizophrenia-related outpatient visits (one visit increase: OR = 1.11 [p=0.0004]), and a lower dose strength on the first PP prescription claim (117 vs. 234 mg: OR = 2.63 [p=0.0086]) were statistically significant predictors of receiving â‰¥5 PP claims. Patients with substance-related and addictive disorders tend to have a lower chance of receiving â‰¥5 PP claims (OR = 0.68 [p=0.0581]), while higher AP adherence tends to be associated with higher likelihood of receiving â‰¥5 PP claims (OR = 1.53 [p=0.0803]).

Conclusion: This study identified a number of predictors related to the probability of receiving â‰¥5 claims of once-monthly PP in Medicaid patients with schizophrenia.

These results may provide insight into patients that are more likely to remain persistent on PP.

LURASIDONE TREATMENT RESPONSE IN PATIENTS WITH SCHIZOPHRENIA ASSESSED USING THE DSM-5 DIMENSIONS OF PSYCHOSIS SEVERITY SCALE

Lead Author: Antony Loebel, M.D.
Co-Author(s): Antony Loebel, M.D., Cynthia Siu, Ph.D., Josephine Cucchiaro, Ph.D., Andrei Pikalov, M.D., Ph.D., Robert Goldman, Ph.D., Fred Grossman, D.O., Nina Schooler, Ph.D.

SUMMARY:
Background

The 5th edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) provides a "Clinician-Rated Dimensions of Psychosis Symptom Severity" assessment (Section III: Emerging Measures and Models). The objective of this analysis was to evaluate lurasidone treatment response using this dimensional approach.

Methods

Data were derived from a 6-week, placebo and active-controlled trial of lurasidone in hospitalized patients with an acute exacerbation of schizophrenia. The standard 7 point scale (1=Absent to 7=Extreme) for each PANSS item was mapped on to the 5 point scale for each domain of the Clinician-Rated Dimensions of Psychosis Symptom Severity assessment in the DSM-5 (0=Not present, 1=Equivocal, 2 = Mild, 3=Moderate, 4=Severe). Scores for each DSM-5 psychosis domain were obtained from the average of the non-missing individual items in the domain. Cognitive impairment and mania symptom domains were excluded from this analysis.

Results

Of the 482 patients including in this analysis, most had moderate severity symptoms at acute study baseline including hallucinations (70%), delusions (86%), disorganized speech (67%), and negative symptoms (79%); mild (41%) to moderate (35%) abnormal psychomotor behavior, and mild (36%) to moderate (38%) depression. Both lurasidone (160 mg/d or 80 mg/d) and quetiapine XR (600 mg/d) showed significantly greater improvement (vs. placebo) at study endpoint on the 6 domains of psychosis symptoms that were assessed.

In patients with at least moderate severity negative symptoms at study baseline (n=360), the higher lurasidone 160 mg/d dose group had significantly greater treatment effect size (0.86) compared to the lower lurasidone 80 mg/d dose group (0.52) ($p<0.05$). In patients with at least moderate severity depression symptoms at study baseline (n=181), the higher lurasidone dose group (1.26) and the quetiapine XR 600 mg/d group (1.0) had significantly greater effect size than the lower lurasidone dose group (0.57) ($p<0.05$). For the other 4 psychosis domains, effect size was numerically greater in the higher lurasidone dose group compared to the lower dose group in patients with moderate to severe symptoms. Severity of negative or depressive symptoms at study baseline was a significant predictor of treatment response at week-6.

Discussion

Larger treatment effects were consistently observed at lurasidone 160 mg/d (versus 80 mg/d) in the treatment of moderate to severe psychosis symptoms. Lurasidone 80 mg/d was comparably effective to lurasidone160 mg/d for less severe symptoms. Dimensional assessment of symptom severity (per DSM-5) can aid understanding of the relationship between baseline symptom severity and treatment

response across the various domains of psychotic illness.

OPTIMIZING RESPONSE TO LURASIDONE IN PATIENTS WITH ACUTE SCHIZOPHRENIA: A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED STUDY OF DOSING REGIMENS

Lead Author: Antony Loebel, M.D.
Co-Author(s): Robert Silva, Ph.D., Robert Goldman, Ph.D., Kei Watabe, M.S., Josephine Cucchiaro, Ph.D., John M. Kane, M.D.

SUMMARY:
Objectives: This 6-week, randomized, placebo-controlled study evaluated the efficacy of low-dose lurasidone in patients with an acute exacerbation of schizophrenia and determined optimal dosing for patients not achieving improvement in the Positive and Negative Syndrome Scale (PANSS) total score after 2 weeks of standard dosing.
Methods: Enrolled patients were adults (aged 18-75 years) with schizophrenia experiencing an acute exacerbation (PANSS total score â‰¥80; PANSS subscale score â‰¥4 [moderate] on â‰¥2 of the following items: delusions, conceptual disorganization, hallucinations, or unusual thought content; and Clinical Global Impression-Severity [CGI-S] score â‰¥4). Eligible patients were randomized in a 1:2:1 ratio to receive fixed-dose lurasidone 20 mg/d, 80 mg/d, or placebo. After 2 weeks, patients in lurasidone 80 mg/d group were classified as early responders (â‰¥20% decrease from baseline PANSS total score) or early nonresponders (<20% PANSS score decrease). Patients responding early to 80 mg/d were continued on the same dose for the remaining 4 weeks. Early nonresponders were re-randomized in a 1:1 ratio to receive either lurasidone 80 mg/d or 160 mg/d for remaining 4 weeks.
Results: The intent-to-treat population comprised 411 patients (men, 63.7%; mean age, 40.8 years) randomized to receive lurasidone 20 mg/d (N=101), 80 mg/d (N=198), or placebo (N=112). At Week 2, 100 and 95 patients were classified as early responders and nonresponders, respectively, in the lurasidone 80 mg/d group. At Week 6, lurasidone 20 mg/d did not demonstrate significant improvement compared with placebo in PANSS total score (-17.6 vs -14.5; P=0.26; primary endpoint) or CGI-S score (-0.93 vs -0.73; P=0.17; key secondary endpoint); however, lurasidone 80-160 mg/d demonstrated significant reduction in PANSS total (-24.9; P<0.001; effect size [ES]=0.63) and CGI-S (-1.30; P<0.001; ES=0.64) scores versus placebo. In early nonresponders to lurasidone 80 mg/d , titration to 160 mg/d (N=43) resulted in significantly greater improvement in PANSS total score from Week 2 to Week 6 compared with 4 additional weeks of treatment at the 80-mg dose (N=52; -16.6 vs -8.9; P=0.023; ES=0.52). The most common adverse events (AEs) occurring more often with lurasidone (dose groups combined) than placebo were akathisia (8.7% vs 1.8%), nausea (6.4% vs 3.6%), and vomiting (3.7% vs 0.9%). Rates of study discontinuation due to AEs were lower for lurasidone 20 mg/d (2.0%) and lurasidone 80-160 mg/d (4.0%) compared with placebo (7.1%).
Conclusions: Lurasidone 20 mg/d was not superior to placebo in treating patients with acute exacerbation of schizophrenia, thus confirming lurasidone 40 mg/d as the minimally effective dose (based on previous lurasidone trials). In early nonresponders to lurasidone 80 mg/d (at Week 2), dose escalation to 160 mg/d provided superior efficacy with no observed change in tolerability.
Sponsor: Sunovion Pharmaceuticals Inc. ClinicalTrials.gov identifier: NCT0182137

NO. 95

EFFICACY OF BREXPIPRAZOLE (OPC-34712) ON PANSS ITEMS AND MARDER FACTOR SCORES: A META-ANALYSIS

OF TWO PIVOTAL STUDIES IN SCHIZOPHRENIA

Lead Author: Stephen R. Marder, M.D.
Co-Author(s): Aleksandar Skuban, M.D., John Ouyang, Ph.D., Catherine Weiss, Ph.D., Emmanuelle Weiller Psy.D.

SUMMARY:
Background: Brexpiprazole is a serotonin-dopamine activity modulator (SDAM) 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. It is under review by the FDA as monotherapy for schizophrenia and adjunctive treatment for MDD. The aim of this post-hoc analysis was to evaluate the efficacy of brexpiprazole across a spectrum of schizophrenia symptoms using the five previously validated PANSS-derived Marder factor scores: positive, negative, disorganized thoughts, uncontrolled hostility/excitement, and anxiety/depression.
Methods: The post-hoc analysis was performed on the pooled data from 2 pivotal 6-week, double-blind, placebo controlled studies of patients with schizophrenia who were randomly assigned to fixed once-daily doses of brexpiprazole 2 mg (n=359), 4mg (n=359) or placebo (n=358) (NCT01396421 and NCT01393613). An additional treatment group was included in each study [0.25mg and 1.0mg] to evaluate the lower dose range; these doses were not included in the meta-analysis.
The analysis evaluated the efficacy of brexpiprazole on the PANSS total score, the PANSS-derived Marder factor scores, and on the PANSS single items. The data were analyzed using a mixed model repeated measures (MMRM) approach with pooled placebo groups.
Results: Pooled brexpiprazole 4mg and 2mg were each superior to placebo in change from baseline in PANSS total score at week 6 (least square mean difference [LSMD] versus placebo: -6.69, p<0.0001 and -5.46, p=0.0004, respectively). The LSMD vs placebo at week 6 was also significant (p<0.05) for brexpipazole 4mg and 2 mg on all five Marder factor scores. On the PANSS single items, the LSMD vs placebo at week 6 was significant (P<0.05) on 22 out of 30 items for brexpiprazole 4 mg and on 13 out of 30 items for brexpiprazole 2 mg. There were no common TEAEs (â‰¥5% and twice the rate of placebo).
Conclusion: Results of the pooled analysis of 2 pivotal studies showed consistent efficacy of brexpiprazole 4 mg and 2 mg dose, across the spectrum of symptoms associated with schizophrenia; treatment with brexpiprazole showed superiority over placebo on PANSS total score, across all five PANSS Marder factors and on many PANSS single items. However, improvement during the treatment of acute psychosis can lead to secondary improvements in other domains of psychopathology. In addition, treatment with brexpiprazole was well tolerated.

PREVALENCE OF METABOLIC SYNDROME IN SCHIZOPHRENIA: A QUEBEC CROSS-SECTIONAL STUDY

Lead Author: Javad Moamai, M.D., M.Sc.
Co-Author(s): Jacques Seguin, M.D.

SUMMARY:
OBJECTIVE: To compare prevalence rates of Metabolic Syndrome (MetS) among patients with Schizophrenia and related disorders (SCZ) with a sample of subjects admitted for Adjustment Disorder, as a proxy for the general population.

METHOD: This cross-sectional study was conducted using data (ICD-10 format) taken from discharge records of 1380 adults admitted for these two groups of illnesses to a Quebec-based facility. Non-parametric descriptive statistics were used for the analysis.

RESULTS: The observed prevalence rate of MetS, as defined by the International Diabetes Federation criteria, was 28.4% in SCZ subjects and 15.9% in the comparison

group (RR= 1.8; 95%CI, 1.7-2.3). A logistic regression analysis indicated that MetS was correlated strongly with age and SCZ, but not with gender or alcohol misuse. A total of 6.6% of the patients met criteria for type II diabetes, 5.6% for hypertension 13.6 % for dyslipidemia and 18.4% for morbid obesity.

CONCLUSIONS: The main findings, in line with existing literature from other countries, confirmed that MetS is a prevalent comorbidity in SCZ. Thus, thorough screening and treatment of MetS is of utmost relevance in hospitalized patients with schizophrenia.

PHARMACOKINETIC CHARACTERIZATION OF CARIPRAZINE AND ITS METABOLITES DURING 12 WEEKS OF DOSING AND 12 WEEKS OF FOLLOW-UP

Lead Author: Tadakatsu Nakamura
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SUMMARY:
Objective: Cariprazine (CAR) is an orally active and potent dopamine D3/D2 receptor partial agonist with preferential binding to D3 receptors in development for the treatment of schizophrenia and bipolar mania and depression, and as an adjunct to major depressive disorder. CAR has demonstrated efficacy in Phase II and III studies. CAR has two active metabolites, desmethyl cariprazine (DCAR) and didesmethyl cariprazine (DDCAR). Clinically, the TOTAL active cariprazine (sum of CAR, DCAR, DDCAR) concentration is considered most relevant. The long terminal half-life (t1/2) of DDCAR was not well defined in earlier studies because of shorter study duration. Therefore, this study was designed to evaluate time to steady state, the functional (effective) half-life, defined as time to achieve 90% steady state divided by 3.32, and rate of decline of TOTAL active cariprazine for 12 weeks of daily dosing and 12 weeks of follow up.

Methods: This was a multicenter, randomized, open-label, parallel-group, fixed-dose (3, 6 or 9 mg/d) study of 28 weeks duration (up to 4 weeks observation, 12-weeks open-label treatment, and 12-weeks follow-up). CAR was orally administered once daily to adult Japanese patients with schizophrenia at an initial dose of 1.5 mg/d, which was increased to 3, 6, or 9 mg/d within 5 days, and the treatment continued for 12 weeks. The pharmacokinetics of CAR, DCAR, DDCAR and TOTAL active cariprazine were evaluated. Steady state was defined as â‰¥0.90 for the ratio of trough concentrations at each week to week 12.

Results:
38 patients received â‰¥1 dose and 24 subjects (n=9, 3mg; n=8, 6mg; n=7, 9mg) completed treatment. Baseline PANSS total scores (meanÂ±SD) were 70.5Â±15.8, 60.3Â±21.8, and 75.4Â±21.1, in 3, 6 and 9mg groups, respectively. Steady state was reached in each dose group within 1-2 weeks for CAR and DCAR, within 4 weeks for DDCAR and 3 weeks for TOTAL. The calculated functional t1/2 of TOTAL active drug was ~1 week. Systemic exposure (AUC0-24 and Cmax) of CAR, DCAR, and DDCAR at steady state increased in a dose-proportional manner. At steady state, DDCAR is the prominent moiety, with exposure (AUC0-24) about 2 to 3-fold higher than for CAR. Steady-state exposure of DCAR is about 30 to 40% of CAR exposure. The terminal t1/2 for CAR, DCAR, and DDCAR in the dose groups ranged from 31.6 to 68.4 h, 29.7 to 37.5 h, and 313.6 to 446.0 h, respectively. Despite the long terminal t1/2, plasma concentration of CAR and DCAR decreased >90% within 1 week after the last dose, while DDCAR and TOTAL decreased ~50% at 1 week and ~90% within 4 weeks after the last dose, respectively.

Conclusions: TOTAL active cariprazine concentration reached steady state within 3 weeks, and decreased by ~50% within 1 week of stopping treatment. This pharmacokinetic profile supports the proposed dosing regimen which includes up-titration on day 1 to day 4 to the defined target dose followed by once daily dosing.

EFFECTS OF ARIPIPRAZOLE ONCE-MONTHLY IN LONG-TERM MAINTENANCE TREATMENT OF SCHIZOPHRENIA

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SUMMARY:
Objective:
The primary objective of this open-label, 52-week extension study was to evaluate the long-term safety and tolerability of aripiprazole once-monthly 400 mg (AOM 400), an extended release injectable suspension of aripiprazole, in maintenance treatment in patients with schizophrenia. Here we report the efficacy measures in long-term maintenance of the therapeutic effect of AOM 400.

Methods:
This study (NCT00731549) enrolled new subjects or subjects who participated in one of the randomized, double-blind, placebo- or active-controlled pivotal studies assessing the efficacy and safety of AOM 400 (Kane et al. 2012, [NCT00705783] or Fleischhacker et al. 2014, [NCT00706654]). The study comprised a screening phase, a conversion phase to oral aripiprazole, an oral stabilization phase, and an open-label 52-week maintenance phase where AOM 400 was administered every 4 weeks. Clinical assessments of symptoms, disease severity, attitude to medication and cognition were carried out during the long-term AOM 400 treatment phase, and mean changes from baseline were analyzed in the observed cases (OC) of the efficacy sample. Since this study focused maintenance of stability, no formal statistical testing was conducted of change from baseline in the efficacy measures.

Results:
A total of 79.4% (858/1081) of patients completed the 52 weeks of AOM 400 treatment, and the primary efficacy analysis showed that 95.0% (1018/1072) of patients who were stable at baseline remained stable at last visit. The mean change in Positive and Negative Syndrome Scale (PANSS) total scores from baseline to last visit was -1.72Â±10.21 (PANSS total baseline: 54.5Â±12.9) indicating stability in clinical symptoms over long-term treatment. Disease severity assessed with Clinical Global Impression of illness Severity (CGI-S) and patient functioning measured with the Personal and Social Performance Scale (PSP) also showed stability and numerical improvements from baseline to last visit: -0.14Â±0.70 (baseline CGI-S: 2.99Â±0.85) and 0.78Â±8.56 (baseline PSP score: 67.8Â±11.7), respectively. Mean changes from baseline to week 52 in patient-rated attitude towards the use of antipsychotic medication recorded with the Drug Attitude Inventory (DAI) and total time to complete the cognitive test Trails A were 0.45Â±6.49 (baseline DAI score: 20.7Â±8.5) and -1.92Â±18.71 seconds (total time at baseline: 52.8Â±29.6 seconds), respectively.

Conclusions:
Long-term treatment with AOM 400 maintained stability in patients with schizophrenia. In a 52-week study, there was no deterioration of clinical symptoms, social functioning, attitude towards medication or cognitive function, and numerical improvements were observed in

secondary efficacy measures. The results suggest that AOM 400 maintains effectiveness throughout long-term maintenance treatment of schizophrenia.

References:
(1) Kane et al. J Clin Psychiatry 2012;73:617-24
(2) Fleischhacker et al. Br J Psychiatry 2014;205:135â€“144

NO. 99

TREATMENT PATTERNS OF SECOND GENERATION LONG-ACTING INJECTABLE ANTIPSYCHOTICS AMONG PATIENTS WITH SCHIZOAFFECTIVE DISORDER

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Co-Author(s): Xiaoyun Pan, Erru Yang, Rosa Wang, Alie Tawah, Carmela Benson, Luke Boulanger, Kruti Joshi

SUMMARY:
Background:
Schizoaffective disorder (SCA) can be considered as a variant of schizophrenia and is characterized by its more severe and prominent mood symptoms. Paliperidone palmitate (PP) was FDA approved in late 2014 as monotherapy or as adjunctive therapy with antidepressant and mood stabilizers in treating SCA. PP is the first long-acting injectable (LAI) in the market for the treatment of SCA, and joins paliperidone oral as the only approved antipsychotics for the indication. Data assessing treatment patterns of second generation LAIs among SCA patients are limited. This study compared drug utilization and adherence among patients treated with LAI that requires oral supplementation (Risperidone LAI) versus LAI that does not require oral supplementation (PP).
Methods:
Adults (â‰¥18 years) with schizoaffective disorder (ICD-9 codes: 295.7) initiating risperidone LAI or PP between July 2007 and December 2012 (initiation date=index date) were identified from US commercial and Medicare supplemental as well as multistate Medicaid insurance databases. All patients had continuous enrollment with at least 6 months pre- and 12-months post-index date. Post-index period medication possession ratio (MPR), proportion of days covered (PDC), discontinuation rate, days of LAI coverage, days of oral antipsychotics coverage and days of concomitant coverage were compared between cohorts. Propensity score matching (PSM) was used to balance the two LAI cohorts on observed baseline patient factors. Multivariate regression analyses were performed to examine the differences of medication adherence (either MPRâ‰¥80% or PDCâ‰¥80%) while adjusting for potential differences in baseline healthcare resource use, as well as additional patient demographics, and clinical characteristics that remained were not adjusted using PSM.
Results:
Our analysis included a total of 163 pairs of matched risperidone LAI and PP users. The mean age was 40 years, 54% were female, and the most common comorbidities were substance abuse other than alcohol abuse (44%) and depression (41%) among eligible patients. At 12-months post-index date, PP users compared to risperidone LAI users had a lower discontinuation rate (41.1% vs. 49.1%, $p<0.01$), more LAI coverage days (222 vs. 144 days, $p<0.01$), a higher rate of no oral antipsychotic coverage (19.0% vs. 9.8%, $p<0.01$), and higher percentage with no concomitant antipsychotic coverage (27.0% vs. 19.0%, $p<0.05$). Logistic regression results showed PP users were more likely to be adherent to therapy (MPR: odds ratio [OR] = 8.16, 95% CI: 4.69-14.63; PDC: OR=5.43, 95% CI: 3.01-10.20).
Conclusions:
A better adherence profile and lower discontinuation rate were found in the PP versus risperidone LAI users. These results may suggest the value of once-monthly dosing and no oral supplementation profile of PP in the treatments for SCA. Research

is necessary to evaluate if adherence to PP is associated with downstream economic offsets.

USING MULTI-CRITERIA DECISION ANALYSIS (MCDA) TO EVALUATE PATIENT PREFERENCES FOR ANTIPSYCHOTIC TREATMENTS FOR SCHIZOPHRENIA

Lead Author: Sumitra Sri Bhashyam, Ph.D.
Co-Author(s): Leslie Citrome, M.D., Kevin Marsh, Ph.D., Tereza Lanitis, M.Sc., Shawn X Sun, Ph.D.

SUMMARY:
OBJECTIVE: Newer generation atypical antipsychotics such as asenapine and lurasidone are viewed as undifferentiated by payers, receiving non-preferred status. The objective of this study was to utilize multi-criteria decision analysis (MCDA) to estimate patient's preference for atypical antipsychotic schizophrenia treatments, and in particular to evaluate preferences for asenapine 5 mg BID versus lurasidone 80 mg QD.
METHODS: A review of the literature as well as clinician engagement identified 8 value criteria covering the clinical benefit, risks, and convenience of atypical antipsychotics for the treatment of schizophrenia. Value criteria measurements were obtained from clinical trials. Scores and weights were elicited from four practicing psychiatrists in the US who were asked to reflect the preferences of their patients during a two-day workshop. These data were aggregated in an Excel-based model. One-way and probabilistic sensitivity analyses were used to explore the implications of uncertainty in model structure and inputs.
RESULTS: The most important value criteria differences across atypical antipsychotics for schizophrenia were judged by the clinicians to be: the reduction in PANSS total score and risks of somnolence, weight gain, akathisia and non-akathisia extrapyramidal symptoms; prolactin levels, frequency of administration and QTc prolongation differences were judged to be of lesser importance by the four participants. Combining these weights with the performance scores of treatments, the MCDA generated an overall value score for each treatment. Asenapine scored 18 and lurasidone scored 14, suggesting asenapine has a clinical profile that may be preferred by patients over that of lurasidone. Preference for asenapine was mainly attributed to perception of reduced prolactin levels, lower risk of akathisia and greater improvement in PANSS total score in comparison to lurasidone. These gains offset the increased frequency of administration and risk of somnolence observed in asenapine treated patients as compared to lurasidone treated patients.
CONCLUSIONS: Although newer atypical antipsychotics are considered undifferentiated amongst each other, when the full range of benefits and risks are considered, the characteristics of asenapine and lurasidone do differ and impact on physician choice and possibly patient acceptance. Limitations include the small number of workshop participants and restriction of the study to only 2 antipsychotics.

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PHARMACOKINETICS, SAFETY, AND TOLERABILITY AFTER A SINGLE-DOSE OF PALIPERIDONE PALMITATE 3-MONTH FORMULATION IN PATIENTS WITH SCHIZOPHRENIA

Poster Presenter: Mahesh N. Samtani, Ph.D.
Co-Author(s): Bart Remmerie, Chem. Eng., Adam Savitz, M.D., Ph.D., Mahesh N. Samtani, Ph.D., Isaac Nuamah, Ph.D., Cheng-Tao Chang, Ph.D., Marc De Meulder, M.Sc., David Hough, M.D., Srihari Gopal, M.D., M.H.S.

SUMMARY:
Aims: To evaluate the pharmacokinetics (PK), safety, and tolerability of an

investigational 3-month (3M) injection interval formulation of paliperidone palmitate (PP) after a single-dose (300 mg eq., gluteal), and single escalating doses (75-525 mg eq., deltoid/gluteal) in patients with schizophrenia (SCZ) or schizoaffective disorder (SCA). Relative bioavailability of PP3M in comparison with 1 mg immediate-release (IR) paliperidone and the dose-proportionality were also assessed.
Methods: This randomized, open-label, multicenter, parallel-group, phase-1 study (NCT01559272) enrolled patients of either sex (18-65 years) diagnosed with SCZ or SCA (DSM-IV). Patients were allocated to 1 of 4 separately conducted panels (A to D), each comprising a screening period (â‰¤21 days) and an open-label period with 2 single-dose treatment periods: Period 1, 1 mg intramuscular (i.m., deltoid/gluteal) paliperidone IR; Period 2, i.m. dose of PP3M as: Panel A: 300 mg eq. (gluteal); Panel B: Either 75, 150, or 450 mg eq. (gluteal), or 300 or 450 mg eq. (deltoid); Panel C: 150 mg eq. (gluteal); Panel D: Either 175 mg eq. (deltoid), 350 mg eq. (gluteal), 525 mg eq. (gluteal), or 525 mg eq. (deltoid). Both periods were separated by a 7-21 day washout interval. PK parameters (plasma exposure [AUCâˆž], maximum plasma concentration [Cmax], time to reach Cmax [tmax], apparent half-life [t1/2], and relative bioavailability) and safety were assessed at prespecified intervals for the 96-hour observation in period 1, and 364- or 544- days in period 2. Only Panel B and D data were used for PK analysis, as the results of Panels A and C were compromised by incomplete injection in few patients.
Results: Overall, 308 patients were dosed with PP3M, and 245 completed the study. After a single i.m. (deltoid/gluteal) injection of 75-525 mg eq., PP3M was slowly absorbed (tmax: 23-34 days; t1/2: 2-4 months). Mean plasma AUCâˆž and Cmax of paliperidone increased in a dose-dependent manner. Across all doses, a higher least square mean Cmax (~27%), but similar AUCâˆž of paliperidone, was observed for the deltoid versus gluteal muscles. Relative bioavailability in comparison with paliperidone IR was ~100% independent of the dose, injection site, body mass index, or ethnicity. Headache and nasopharyngitis were the most common (>7%) treatment-emergent adverse events across all panels. Adverse events should be interpreted with caution because patients were also on other antipsychotics. One death due to metastatic melanoma occurred in Panel B, not considered to be associated with the study drug. In all panels, the intensity of injection pain peaked at 1 or 6 hours, and decreased over time.
Conclusion: After administration of PP3M, paliperidone exhibited a dose-proportional PK across a dose range of 75-525 mg eq., with PK results that support administration once every 3 months for the treatment of patients with SCZ or SCA. Overall, PP3M had a similar tolerability profile as the 1-month formulation.

POSITIVE SYMPTOMS ARE NOT ASSOCIATED WITH COGNITIVE DEFICITS IN TREATMENT-RESISTANT SCHIZOPHRENIA

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SUMMARY:

BACKGROUND:
Treatment refractory schizophrenia, compared to non-refractory, is characterized by higher presence of positive symptoms. Cognitive deficits in schizophrenia have been partially associated with positive symptoms. Therefore, we could expect more severe cognitive deficits in treatment resistant patients with schizophrenia (TRS).
METHODS:
Fifty-two TRS and 42 patients with patients with schizophrenia who respond adequately to pharmacological treatment

(NTRS) were recruited following the criteria of Kane et al (1988). Forty-five healthy controls matched by age, sex and education were also recruited. Clinical evaluations included: Positive and Negative Symptom Scale (PANSS), functional disability (WHO-DAS) and the Clinical Global Impression (CGI) scale. All patients underwent 12 neuropsychological tests for 6 cognitive domains: attention, processing speed, working memory, verbal memory, language, and executive function.
RESULTS:
Patients were classified into the groups TRS & NTRS but no differences between these two groups were found in age of disease onset, number of hospitalizations or length of hospitalization. From a clinical point of view, the TRS group showed greater severity of positive symptoms ($p<0.01$) and higher global deterioration ($p<0.01$), which did not translate into greater functional disability. As expected, the control group performed better than the two patient groups (both TRS and NTRS) in all neuropsychological domains. Not expected, TRP group scored similarly in all cognitive domains evaluated compared to NTRS, except for one test of attention.
CONCLUSION:
Our data suggest that a higher presence of positive symptoms is not always associated with higher cognitive deficits in schizophrenia but most probably with global severity of the illness and poor psychosocial functioning.

EFFICACY AND SAFETY OF BREXPIPRAZOLE (OPC-34712) IN ACUTE SCHIZOPHRENIA: A POOLED ANALYSIS OF TWO PIVOTAL STUDIES

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Co-Author(s): John M. Kane, M.D., John Ouyang, Ph.D., Catherine Weiss, Ph.D., Emmanuelle Weiller, Psy.D., Christoph U. Correll, M.D.

SUMMARY:
Background: Brexpiprazole, a serotonin-dopamine activity modulator (SDAM) 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. The efficacy, safety, and tolerability of brexpiprazole were evaluated in patients with acute schizophrenia, based on pooled data from two pivotal phase III studies.
Methods: In two similarly designed studies, patients with acute schizophrenia were randomized to fixed once-daily doses of brexpiprazole 2mg, 4mg or placebo (an additional treatment group was included in each study [0.25mg and 1.0mg] to evaluate lower doses; these doses were not included in the meta-analysis). The primary efficacy endpoint was change in PANSS total score from baseline to week 6; key secondary endpoint was the change in CGI-S score at week 6. Cardio-metabolic parameters were assessed by weight and glucose and lipid metabolism-related laboratory measurements.
Results: Pooled brexpiprazole 4mg (N=359) and 2mg (N=359) were each superior to placebo (N=358) in change from baseline in PANSS total score at week 6 (least square mean difference to placebo: -6.69, $p<0.0001$ and -5.46, $p=0.0004$, respectively). Results of the key secondary endpoint supported the primary results.
Altogether 8.2% (30/364) and 7.1% (26/368) of brexpiprazole-treated patients (4mg and 2mg, respectively) vs 14.7% (54/368) placebo-treated patients discontinued due to adverse events. Incidences of insomnia and agitation in brexpiprazole treatment groups were similar or lower than with placebo. Akathisia incidences were 6.9% and 4.6% in the brexpiprazole 4mg and 2mg groups, respectively, vs 4.6% with placebo and sedation incidences were 2.7% and 1.6% in the brexpiprazole 4mg and 2mg groups, respectively, vs 0.8% with placebo.
Increased weight was reported as a TEAE by 1.2% and 1.2% of patients who received brexpiprazole 2mg and 4 mg, respectively, vs 0.2% of placebo patients. An increase in weight â‰¥7% at any visit was seen in

10.3% and 10.2% of brexpiprazole 2mg and 4 mg patients vs 4.1% of placebo patients. For fasting metabolic parameters, mean changes from baseline to last visit were (brexpiprazole 2 and 4mg vs placebo): total cholesterol 2.22 and 2.97 vs 3.21mg/dL; high-density lipoprotein cholesterol 1.51 and 0.46 vs -1.78mg/dL; low-density lipoprotein cholesterol 0.36 and 2.35 vs 1.82mg/dL; triglycerides -1.39 and 0.75 vs 0.38mg/dL; and glucose -0.23 and 1.64 vs 0.42mg/dL.
Mean prolactin decreased from baseline to last visit in the brexpiprazole 4mg group by -0.81ng/mL (female) and -0.47ng/mL (male), the brexpiprazole 2mg group (female -1.31ng/mL, male -1.36ng/mL) and the placebo group (female -5.57ng/mL, male -1.08ng/mL).
Conclusion: Pooled data from two pivotal studies provide evidence that brexpiprazole is efficacious and safe in treating patients with acute schizophrenia. Both brexpiprazole 2 and 4mg were well tolerated, with notably low levels of akathisia and sedation.

ARIPIPRAZOLE LAUROXIL: AN INNOVATIVE LONG-ACTING INJECTABLE IN DEVELOPMENT FOR TREATMENT OF SCHIZOPHRENIA

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SUMMARY:

The symptoms of schizophrenia are usually classified into positive, negative and cognitive domains. Exacerbation of positive symptoms usually requires immediate treatment. While negative symptoms are not regarded as "urgent" they often contribute to impaired functioning. Atypical antipsychotics have demonstrated efficacy in reducing the severity of both positive and negative symptoms. Aripiprazole lauroxil (AL) is a novel, long-acting injectable atypical antipsychotic with an innovative delivery system in development for treatment of schizophrenia.

The safety and efficacy of AL was demonstrated in a double-blind, placebo-controlled, 12-week study in patients experiencing an acute exacerbation of schizophrenia. Patients received AL 441 mg IM, AL 882 mg IM or matching placebo (PBO) IM monthly. Patients also received 15 mg oral aripiprazole or PBO for the first 3 weeks of treatment. The primary efficacy endpoint was the change from baseline to Day 85 in Positive and Negative Syndrome Scale (PANSS) total score. Other endpoints included the change from baseline to Day 85 in PANSS Positive and Negative subscales scores and PANSS responder rate (defined as a â‰¥30% reduction in PANSS total score) at Day 85. The incidence of treatment-emergent adverse events (TEAEs) was also evaluated.

A total of 622 patients were randomized and received study drug; 596 patients had â‰¥1 post-baseline PANSS score. Patients were markedly to severely ill at baseline (mean PANSS total scores ranged from 92-94). Using ANCOVA with LOCF, statistically significant and clinically meaningful improvements on PANSS total score were demonstrated for both AL doses at study endpoint with placebo-adjusted difference of -10.9 ($p<0.001$) and -11.9 ($p<0.001$) for AL 441 mg and AL 882 mg, respectively. At Day 85, placebo-adjusted differences in PANSS Positive subscale score were -3.23 ($p<0.001$) and -3.72 ($p<0.001$) for AL 441 mg and AL 882 mg, respectively; and were -2.23 ($p<0.001$) for AL 441 mg and -2.35 ($p<0.001$) for AL 882 mg in PANSS Negative subscale score. Statistically significant separation from PBO was observed as early as Day 8 and was consistently observed throughout the study period for PANSS total score and both subscale scores. With LOCF, the PANSS responder rates were significantly greater

for the AL 441 mg group 35.7% (p<0.001) and AL 882 mg group 34.8% (p<0.001) than PBO (18.4%). The most common TEAEs (>5% of patients in either AL dose group) were akathisia, insomnia, headache, and anxiety.

These findings demonstrate the robust efficacy of both doses of aripiprazole lauroxil as treatment of acute psychotic symptoms in patients with schizophrenia. Additionally, significant reduction in PANSS subscale scores as early as Day 8 suggests that both doses of aripiprazole lauroxil may rapidly reduce both positive and negative symptoms. Both doses of aripiprazole lauroxil were generally safe and well tolerated with a side effect profile consistent with oral aripiprazole.

ONCE-MONTHLY PALIPERIDONE PALMITATE COMPARED WITH ORAL CONVENTIONAL OR ORAL ATYPICAL ANTIPSYCHOTIC TREATMENT IN PATIENTS WITH SCHIZOPHRENIA

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Co-Author(s): Edward Kim, M.D., M.B.A., Cynthia A. Bossie, Ph.D., Lian Mao, Ph.D., Larry Alphs, M.D., Ph.D.

SUMMARY:

Background: Relative benefits of long-acting injectable atypical antipsychotics vs oral antipsychotics (OAs) remain a subject of debate. This exploratory subgroup analysis of the Paliperidone palmitate Research In Demonstrating Effectiveness (PRIDE; NCT01157351) study compared outcomes following administration of paliperidone palmitate once-monthly (PP1M) vs conventional OAs or atypical OAs.
Methods: PRIDE was a 15-month prospective, randomized, open-label, event-monitoring boardâ€“blinded study designed to reflect real-world schizophrenia, as defined by patients, treatments, and outcomes. 444 subjects with schizophrenia and history of incarceration were randomly assigned to PP1M or to 1 of 7 commonly prescribed OAs (up to 6 could be deselected for each subject if deemed unacceptable by patient or clinician). Primary endpoint: time to first treatment failure (TF), defined as arrest/incarceration, psychiatric hospitalization, suicide, discontinuation due to inadequate efficacy or safety/tolerability, treatment supplementation due to inadequate efficacy, or increase in psychiatric services to prevent psychiatric hospitalization. Kaplan-Meier analysis estimated event-free probabilities. This analysis reported randomization-based comparisons of PP1M vs conventional OAs (haloperidol, perphenazine), PP1M vs atypical OAs (olanzapine, aripiprazole, quetiapine, risperidone, and paliperidone), and PP1M vs paliperidone and risperidone (different delivery of same/similar molecule).
Results: Compared with PP1M, risk for first TF was 34% higher with conventional OAs (HR, 1.34; 95% CI, 0.80-2.25), 41% higher with atypical OAs (HR, 1.41; 95% CI, 1.06-1.88), and 39% higher with paliperidone/risperidone (HR, 1.39; 95% CI, 0.97-1.99). Mean (SD) daily dose (mg) of prescribed OAs were 8.2 (5.33), 16.5 (8.81), 13.3 (6.44), 15.3 (5.89), 339.9 (180.35), 3.6 (1.61), and 6.6 (2.44) for haloperidol, perphenazine, olanzapine, aripiprazole, quetiapine, risperidone, and paliperidone, respectively. Mean (SD) monthly PP1M dose was 181.3 (34.19) mg. Incidences of extrapyramidal symptomâ€“related adverse events (AEs) were 45.7%, 13.7%, and 10.6% in the conventional, atypical, and paliperidone/risperidone groups vs 23.9% in the PP1M group, respectively. Incidences of prolactin-related AEs were 5.7%, 3.8%, and 3.5% in the conventional, atypical, and paliperidone/risperidone groups vs 23.5% in the PP1M group. Incidences of â‰¥7% weight increase were 11.4%, 14.9%, and 16.0% in the conventional, atypical, and paliperidone/risperidone groups vs 32.4% in the PP1M group. Deselection of specific OAs and low compliance with OAs may

have biased the safety results, masking tolerability issues associated with any 1 OA. Conclusions: These exploratory analyses suggest a lower risk of TF but higher rate of some AEs following treatment with PP1M compared to treatment with conventional OAs, atypical OAs, and paliperidone/risperidone. Additional studies are needed to confirm findings.

COMPARISON OF SCHIZOPHRENIC PATIENTS WITH NEGATIVE BELIEFS ABOUT AUDITORY HALLUCINATION AND THOSE WITHOUT AUDITORY HALLUCINATION

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Co-Author(s): Nese Ustun, M.D. , Ferhat Sari, M.D. , Dilek Sarikaya VarlÄ±k, M.D. , Cenk Varlik, M.D. ,Sevilay Kunt, M. D., BÃ¼ÅŸra GÃ¼rel, M.D., Mustafa TunÃ§tÃ¼rk, M.D., Nezih Eradamlar, M.D.

SUMMARY:
OBJECTÄ°VE: Ä°n this study we aimed to compare schizophrenic patients with negative beliefs about auditory hallucination and those without auditory hallucination in terms of self esteem, depression, suicidal behaviours, life quality, disability and sociodemographic characteristics.
METHOD:70 male patients who had been treated at a general psychiatric inpatient unit and diagnosed with schizophrenia according to DSM-IV criteria were included to the study. The patients were assessed by the socio-demographic data form, beliefs scale about the hallucinations, beliefs assessment scale, Rosenberg self-esteem scale, Calgary Depression Scale for Schizophrenia (CDSS), Scale of Suicide Ideation, loss of ability rating schedule and the scale of quality of life in schizophrenia.
RESULTS:Among the patients with negative beliefs about auditory hallucinations, 19 (54.29%) patients were found to have low self-esteem, 3 (8.57%) have moderate self-esteem, and 13 (37.14%) have high self-esteem. 7 patients without auditory hallucination (20%) patients were found to have low self-esteem, 3 (8.57%) patients have moderate self-esteem, and 25 (71.43%) patients have higher self-esteem. Between two groups, a statistically significant difference was observed ($p<0,05$). It's founded that CDSS mean score of the patients with negative beliefs about the auditory hallucinations is 8.56 while the CDSS mean score of the patients with no auditory hallucinations is 2,34. Both groups differed statistically significant in terms of the mean scores of CDSS ($p<0,05$). By looking at the suicidal thought scale scores, patients with negative beliefs about auditory hallucination mean Scale of Suicide Ideation score was identified as 7.71, while the mean Scale of Suicide Ideation score of the group with no auditory hallucination was found to be 2.74. A statistically significant difference was found between the two groups. In addition, both groups significantly differs statistically in terms of their scores about the scale of assessment in beliefs, loss of ability assessment chart, the scale of quality of life in schizophrenia ($p<0,05$).
CONCLUSÄ°ON: By comparing the two groups, it can be argued that, the patients with negative beliefs about the auditory hallucination have lower self-esteem, are more depressive, have high suicidal ideation scale scores, have more negative beliefs about themselves or others, more loss of ability and lower quality of life. The hallucinations and the contents should be questioned carefully in terms of the clinical outcomes led by this situation.

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MULTIMODAL BRAIN ANALYSIS IN PSYCHOSIS RISK â€“ THE OULU BRAIN AND MIND STUDY

Lead Author: Juha Veijola, M.D.
Co-Author(s): Vesa Kiviniemi, M.D.,Ph.D., Tuomas Jukuri, M.D., Jenni Koivukangas, M.D., Johannes Pulkkinen, B.M., Jennifer H. Barnett, Ph.D., Pirjo MÃ¤ki, M.D., Ph.D., Graham K. Murray, M.D., Ph.D

SUMMARY:

Background: There is lack of research concerning multimodal analysis of the brain in connection to psychosis risk. We were able to conduct a study of a relatively large sample of people in young adulthood.

Methods: The study sample consisted of 329 members of the Northern Finland 1986 Birth Cohort at age 21-24 years. Their mental health was assessed comprehensively by interviews and questionnaires. We were able to form two psychosis risk groups: Symptomatic Risk for Psychosis and Familial Risk for Psychosis. The MRI scanning methods included structural MRI, Diffusion Tensor Imaging (DTI), Resting state functional MRI (R-fMRI) and fMRI with three different tasks (Sternberg test, facial recognition task and prediction error task). Additionally a battery of cognitive test was used. The scanner was a GE Signa 1.5 Tesla MRI.

Results: The two psychosis risk groups did not differ from the control group or each other in cognitive profile. In the structural analysis we found grey matter volume reduction in a small area covering both cerebellar hemispheres and the vermis in subjects who had both symptomatic and familial risk for psychosis compared to control subjects. In the R-fMRI we found lower activation in the familial risk group compared to the control group in the posterior cingulate cortex and right inferior frontal gyrus. In the facial recognition test we found FR subjects had increased activity in the premotor cortex and under-deactivation of prefrontal cortex structures during happy facial expression viewing. In the white matter analysis (DTI) no differences were found.

Conclusions: We had multiple gray matter findings both in structural and functional analysis, but no differences were seenne in white matter analysis or in cognitive function. The study suggests that gray matter networks lie behind psychosis risk; and white matter integrity deficits may develop later on in psychosis.

HEALTHCARE RESOURCE USE OF PALIPERIDONE PALMITATE 3-MONTH INJECTION VS. PLACEBO: AN ANALYSIS OF THE PSY-3012 PHASE III CLINICAL TRIAL HOSPITAL DATA

Lead Author: Kimberly Woodruff, Ph.D., Pharm.D.
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SUMMARY:

Introduction: Clinical trial PSY-3012 was a randomized, multicenter, double-blind, parallel-group, relapse-prevention study of paliperidone palmitate 3-month injection (PP3M) vs. placebo. Adults with schizophrenia were stabilized with once-monthly injection (PP1M) in an open-label (OL) 17-week transition phase, followed by a single PP3M injection in an OL 12-week maintenance phase. Qualifying subjects were then randomized to PP3M or placebo in the double-blind (DB) phase. One of the exploratory objectives was to compare healthcare resource utilization (HCRU) between PP3M and placebo, using the HCRU questionnaire during the double-blind (DB) phase.
Methods: HCRU was measured at the start of transition and maintenance phases, and at end of open-label phase (double-blind baseline), and every 12 weeks during DB until end of study/early withdrawal. Information collected included hospitalizations, ER visits, day or night clinic stays, outpatient treatment, daily living conditions, and occupational status. Logistic regression was used to model the probability of hospitalization vs. no hospitalization for both psychiatric and social reasons, as well as hospitalizations for psychiatric reasons only during the DB phase. The models controlled for OL baseline hospitalizations, OL phase hospitalizations, and time in study.

Results: A total of 145 subjects were randomized to placebo and 160 subjects to PP3M during the DB phase. The odds of hospitalization for psychiatric and social reasons during 1 year for placebo subjects were 7.74 times the odds of hospitalization for PP3M subjects (95% CI: 2.39, 25.05, p<0.001). The probability of hospitalization during 1 year was 0.24 (95% CI: 0.15, 0.36) for placebo subjects, and 0.04 (95% CI: 0.01, 0.11) for PP3M subjects. Similar results were observed when evaluating hospitalizations for psychiatric reasons only. The odds of hospitalization during 1 year for placebo subjects were 6.72 times the odds of hospitalization for PP3M subjects (95% CI: 1.72, 26.18, p=0.006). The probability of hospitalization during one year was 0.15 (95% CI: 0.08, 0.26) for placebo subjects, and 0.03 (95% CI: 0.01, 0.09) for PP3M subjects.
Conclusions: Subjects who received placebo had significantly higher odds of hospitalization for either psychiatric and social reasons, or psychiatric reasons alone compared to subjects who received PP3M. Further analysis of the economic impact of such resource reductions is warranted.

SSRI ASSOCIATED TESD IN PATIENTS WITH WELL-TREATED MDD AFTER DIRECT SWITCH TO VORTIOXETINE OR ESCITALOPRAM

Lead Author: Atul R. Mahableshwarkar, M.D.
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SUMMARY:

BACKGROUND: Patients with MDD often report symptoms of sexual dysfunction despite being well treated for mood symptoms. Patients taking SSRIs are at a greater risk for treatment-emergent sexual dysfunction (TESD), often switching treatment to manage symptoms. OBJECTIVE: This 8-wk, randomized, double-blind, head-to-head comparison (NCT01364649) of vortioxetine and escitalopram examined the degree and severity of TESD in MDD patients taking SSRIs and the clinical impact of switching to vortioxetine or escitalopram. METHODS: Well treated MDD patients with SSRI-induced TESD were switched with no taper to vortioxetine 10mg (n=225) or escitalopram 10mg (n=222) for wk 1, each escalated to 20mg for wk 2. Investigators could adjust the dose between 10 and 20mg at wks 4 and 6. TESD was assessed at baseline (BL), wks 2, 4, 6, and 8 using the Changes in Sexual Functioning Questionnaire Short-Form (CSFQ-14). Adverse events (AEs) were assessed at each study visit. RESULTS: Patients taking citalopram (vortioxetine, 53.3%; escitalopram, 51.8%), sertraline (30.7%; 34.7%), or paroxetine (16.0%; 13.5%) prior to randomization had well treated depression (BL MADRS, 7.9; 8.3) with significant TESD (BL CSFQ-14, 36.5; 36.3), which was independent of age, gender, or current SSRI. All patients were below the threshold (CSFQ-14 men â‰¤47; women â‰¤41) for healthy sexual functioning (BL CSFQ-14 men [39.9; 40.7]; women [33.5; 33.3]). 348 patients completed the study (vortioxetine, n=169/225; escitalopram, n=179/222). Patients switched to vortioxetine experienced superior improvement in TESD and a positive shift in sexual functioning compared to escitalopram (CSFQ-14 Î”+2.2, P=0.013; MMRM). TESD symptoms improved in all patient groups, irrespective of previous SSRI. More patients switched to vortioxetine improved from abnormal to normal sexual functioning at wk 8, compared to escitalopram (113/217 [52.1%]; 91/206 [44.2%]; P=0.112). Antidepressant efficacy was maintained or slightly improved in the study for both treatments, and was independent of previous SSRI. The AE profile for vortioxetine was similar to previous trials, with nausea (25.0%), headache (9.4%), and dizziness (8.0%) the most common TEAEs. The incidence of AEs was similar across groups when evaluated by previous SSRI

treatment, with the majority of AEs resolving after 14 days of treatment. CONCLUSIONS: MDD patients experience significant TESD symptoms with current SSRIs, despite being well treated for depression. Patients treated with citalopram, paroxetine, or sertraline were safely and effectively switched to improve the symptoms of TESD. More vortioxetine-treated patients shifted to normal sexual functioning with maintenance of clinical efficacy, compared to escitalopram. Patients were safely switched to vortioxetine, with an AE profile similar to previous trials and independent of their previous SSRI therapy.

CLINICAL FEATURES ASSOCIATED WITH CHRONIC SUICIDE RISK IN BIPOLAR OUT-PATIENTS

Lead Author: Molly Duffy
Co-Author(s): Deimante McClure, M.A., Irina Kopeykina, B.A., Jessica Briggs, B.A., Zimri Yaseen, M.D., Igor Galynker, M.D. Ph.D.

SUMMARY:

Objective: Bipolar disorders are associated with a markedly elevated risk of suicide. In this naturalistic study of patients and treatment partners (usually a parent or significant other) seeking family inclusive treatment at the Family Center for Bipolar Disorder in New York City, we examined psychometric correlates of lifetime suicide attempt history.

Methods: 50 patients and their treatment partners were assessed in impulsivity (measured by the Barratt Impulsiveness Scale), attachment (measured by the Relationship Scales Questionnaire) and state and trait anxiety (measured by the State-Trait Anxiety Inventory). Additionally, participants were administered the Columbia Suicide Severity Rating Scale (CSSRS), which assesses lifetime suicidal ideation and suicide attempt history. Personality factors were measured by the Millon Clinical Multiaxial Inventory.

Results: We found higher scores on state but not trait anxiety, as well as trends towards greater impulsivity and less secure and more fearful attachment in patients with suicide attempt history. Treatment partner personality factors did not differ between patients with and without suicide attempt history in this sample.

Conclusion: These results are consistent with the literature supporting connections between anxiety disorders, attachment insecurity, and impulsivity in suicide risk, and highlight the importance of therapeutic interventions that target these vulnerabilities in the treatment of bipolar disorders.

PATTERNS OF MENTAL HEALTH SERVICE USE FOR SUICIDE DECEDENTS IN OHIO

Lead Author: Cynthia Fontanella, Ph.D.
Co-Author(s): Danielle Hiance-Steelesmith, M.S.W., Helen-Anne Sweeney, M.S., Jeff A. Bridge, Ph.D., John V. Campo, Ph.D.

SUMMARY:

Objective: To examine specific patterns of behavioral health care of suicidal decedents in the public mental health system.
Background: Health and mental health providers have the potential to play a critical role in preventing suicide, assuming those who commit suicide make contact prior to their death. One of the specific goals of the National Strategy for Suicide Prevention is the development of programs aimed at improving the ability of primary care and mental health professionals to identify and treat those at risk for suicide. Unfortunately, no studies have examined patterns of health service contacts in Medicaid populations.
Methods:
Data Source: Ohio death certificate information was merged with Multi-Agency Community Services Information System (MACSIS) data using a multi-step algorithm. MACSIS is an automated payment

management information system for publicly funded outpatient behavioral health services. The Ohio death certificate files list each underlying cause of death, as coded in the International Classification of Disease (ICD-10).
Population: All Ohio residents who committed suicide (ICD-10 death codes X60-84) between 2007 and 2011 and received behavioral health services within two years prior to death.
Dependent variable: Behavioral health service use was defined as any outpatient mental health or substance abuse treatment during the year prior to death.
Explanatory variables: Demographic characteristics included age at time of death, race/ethnicity, gender, type of insurance, and rural/urban residence. Clinical characteristics included primary diagnosis (ICD-9-CM codes 290-319), any psychiatric comorbidities, and method of suicide.
Analysis: Descriptive statistics were used to examine patterns of behavioral health service contact for suicide decedents. Logistic regression was used to identify demographic and clinical characteristics associated with mental health service use.
Results: In the five years of data analyzed, 6,850 Ohioans committed suicide. Of those who committed suicide, 1,387 (20.2%) were seen in the public behavioral health system within 2 years of death. The majority, 64.5%, of suicide decedents who were seen were uninsured; only 35.5% had any Medicaid coverage the year prior to death. 68% had a behavioral health contact within a year prior to death and 29% had a contact within one month. Increased odds of behavioral health service use were associated with a primary diagnosis of schizophrenia and with comorbid psychiatric diagnoses; decreased odds of behavioral health service use were associated with rural location, uninsured, suicide by firearm, and primary diagnosis of AOD.
Conclusions: This research indicates the importance of identifying those who are uninsured and at risk for suicide. The high rate of uninsured suicide decedents in the public behavioral health system gives credence to the expansion of Medicaid eligibility through the Affordable Care Act.

IMPACT OF CLINICAL EXPERIENCE ON PSYCHIATRISTS' RESPONSES TO ACUTELY SUICIDAL PSYCHIATRIC INPATIENTS

Lead Author: Anna I. Frechette, B.A.
Co-Author(s): Jessica Briggs B.A., Zimri Yaseen M.D., Igor Galynker M.D., Ph.D.

SUMMARY:

Abstract

Objective: Previous research has studied the differences in countertransference responses to patients who made suicide attempts and non-suicidal patients who died unexpectedly. In this study, we examined the responses of clinicians of varying years of experience to suicidal psychiatric inpatients in their care in order to determine the response patterns based on experience level.

Methods: A ten-item assessment of clinician emotional responses and treatment alliance with patients was administered to the treating first and fourth year resident psychiatrists and the attending psychiatrist for patients admitted to the hospital for suicidality. A total of 104 clinician reports were assessed, and response patterns were compared using ANOVA and t-tests.

Results: We significant differences in response patterns between clinicians of differing experience levels. First year residents demonstrated higher levels of positive reports rather than negative responses with respect to their suicidal patients, and that the same pattern held for attending psychiatrists versus senior residents. Attending psychiatrists reported significantly higher levels of trust than both levels of residents, but reported liking their

patients at less often than first year residents did.

Conclusion: Significant variations in countertransference response to suicidal inpatients were found between first year resident, fourth year resident, and attending level psychiatrists. Comparison of fourth year (senior) resident and attending level clinicians may be particularly informative as they have similar levels of patient contact. Further study is needed to assess the impact of negative countertransference on the treatment of suicidal patients.

THE ROLE OF ANXIETY IN ACUTE SUICIDE RISK AMONG PATIENTS HOSPITALIZED FOR SUICIDALITY

Lead Author: Kerry Haddock, B.A.
Co-Author(s): Jessica Briggs BA, Zimri Yaseen MD, Igor Galynker MD PhD

SUMMARY:

The Role of Anxiety in Acute Suicide Risk Among Patients Hospitalized for Suicidality

Kerry Haddock BA, Jessica Briggs BA, Zimri Yaseen MD, Igor Galynker MD PhD

ABSTRACT

Objective: Suicide remains a leading cause of mortality in the Western world. Risk of suicide is highest in the first 2 months after psychiatric hospitalization. Despite years of work, suicide risk assessment remains modest at the individual level. In this study, we examined clinical features of patients with psychiatric admissions for acute suicidality.

Methods: 93 psychiatric inpatients admitted for suicidality were assessed for state and trait anxiety, along with a comprehensive battery of psychiatric measures, at admission and discharge. Predictive power of anxiety scores for return to psychiatric ER in the 2 month period following discharge from the hospital was assessed. The State-Trait Anxiety Inventory (STAI) was used to assess anxiety, and patients were given follow up interviews to determine the presence or absence of a subsequent visit to the psychiatric ER.

Results: Decreases in self-assessed state anxiety measures from beginning to end of hospitalization were significantly greater ($p=0.001$) for subjects who returned to the psychiatric emergency room within two months. Decreases in self-assessed trait anxiety were significantly greater ($p=0.042$) for patients with a lifetime history of suicide attempt requiring major medical care. Though decreases in state and trait anxiety were positively correlated with initial scores and negatively correlated with end- of- stay scores, neither initial nor end- of- stay scores different significantly between groups.

Conclusion: Acute anxiety reactivity appears to predict return to ER after hospitalization, while greater situational bias in generalized (trait) self-assessment is associated with high lethality suicide attempts.

ARE AGGRESSION AND IMPULSIVITY RISK FACTORS FOR SUICIDAL BEHAVIOR IN ADULT PSYCHIATRIC INPATIENTS?

Lead Author: Ahmad Hameed, M.D.
Co-Author(s): Amanda M White BS, Michael A Mitchell MA, Eric A Youngstrom Ph D, Roger E Meyer M.D, Alan J Gelenberg M.D

SUMMARY:

Introduction: Clinicians face a daunting challenge of determining the factors that may increase an individual's risk for suicide. In a general population sample, individuals that had attempted suicide scored higher on measures of aggression and impulsivity. This relationship appears to hold true in the psychiatric inpatient population. Inpatients who had a history of aggression were more likely to have made a suicide attempt and among inpatients diagnosed with major depressive disorder, previous suicide

attempters scored higher on impulsivity. However, other investigators found that a history of aggression in inpatients did not differentiate those who attempted or committed suicide from those who did not attempt or commit suicide. In order to clarify this relationship, we examined aggression, impulsivity, and suicidal behavior in a sample of adult psychiatric inpatients.
Methods: Adult psychiatric inpatients (n = 199) participated in a psychometric evaluation study. Past month suicidal behavior (preparatory actions, suicide attempt, interrupted attempt, aborted attempt) was reported on the Columbia-Suicide Severity Rating Scale (C-SSRS) (Posner et al., 2007). Past month aggression (yes/no) and impulsivity (yes/no) were reported on an investigator-designed risk assessment measure (RAM). We performed a series of logistic regression analyses to examine whether aggression and impulsivity were significant predictors of suicidal behavior.
Results: Aggression was not a significant predictor of preparatory acts ($p = 0.92$), interrupted attempt ($p = 0.40$), or actual attempt ($p = 0.31$). However, inpatients who reported aggression were 3.06 times more likely to have aborted an attempt in the past month (Wald = 6.29, $p = 0.01$). Impulsivity was not a significant predictor of preparatory acts ($p = 0.95$) or interrupted attempt ($p = 0.11$). Inpatients who reported impulsivity were 3.13 times more likely to have aborted an attempt (Wald = 4.04, $p = 0.04$) and 3.60 times more likely to have made an actual attempt (Wald = 12.38, $p < 0.01$). Since both aggression and impulsivity were significant predictors of aborted attempt, we ran a logistic regression including both traits as predictors. Aggression remained a significant predictor of aborted attempt (Wald = 3.79, odds ratio = 2.47, $p = 0.05$) but impulsivity was no longer a significant predictor (Wald = 2.02, odds ratio = 2.32, $p = 0.16$).
Discussion: In our sample of adult psychiatric inpatients, recent history of aggression and impulsivity were associated with an increased risk of recent suicidal behavior. Previous studies examined aggression and impulsivity as risk factors for suicide attempt. Our use of a standardized suicide assessment enabled us to examine these traits as risk factors for a range of suicidal behaviors. Future studies should confirm these results by utilizing standardized instruments to assess suicidal behavior, aggression, and impulsivity.

ASSOCIATION BETWEEN HOMICIDE AND SUICIDE RATES IN COLOMBIA, 2013

Lead Author: Edwin Herazo, M.D., M.Sc.
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SUMMARY:
Background: In Latin America, it has been observed that homicide and suicide rates present a significant negative correlation. However, in Colombia this association has not been analyzed.
Objective: To establish the association between suicide and homicide rates in Colombia during 2013.
Method: An ecological analysis in which the association between suicide and homicide rates in Colombia was performed. Spearman correlation (rs) between the analyzed rates were estimated; coefficient greater than 0.30 and 0.05 lower probability were taken as significant.
Results: Data from 29 departments and the capital district were included. The homicide rate was observed between 7.62 and 75.79 per 100,000 inhabitants (M= 29.60, SD=15.20, Me=26.06, IQR=18.71-38.87) and the rate of suicide was found between 1.02 and 6.71 per 100,000 inhabitants (M=3.95, SD=1.47, Me=4.29, IQR= 2.71-4.29). The correlation between the rates was not statistically significant (rs=0.203, p=0.282).

Conclusions: Colombia's homicide and suicide rates in 2013 are shown as independent variables. More studies examining the weight of sociopolitical violence related to the armed conflict in the variation of these rates is required.
Keywords: Homicide, suicide, Colombia, ecological studies.

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IMPULSIVITY IN SUICIDE ATTEMPTS: SEROTONIN TRANSPORTER GENE AND EARLY TRAUMA INTERACTION

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SUMMARY:

Introduction:
Impulsivity is one of the personality traits more frequently associated with suicide attempts. Impulsivity has shown to be a heritable trait and it has been linked to serotonergic genes such as the promoter region of the serotonin transporter gene (5-HHTLPR)(1). A variation in this particular gene influences reactivity to environmental stress exposure, increasing risk for anxiety and depression (2). Taking these facts into consideration suicide attempts genetics should be influenced by environmental factors as well.

Subjects and methods:
We have studied the possible influence of childhood stressful events on 5-HHTLPR gene expression in terms of impulsivity mesured by Barratt Impulsivity Scale (BIS-10). In a multicentre sample of 2118 suicide attempters, we have compared mean scores of BIS (cognitive, motor, and non-planning subscales) by 5-HHTLPR variation (SS, SL y LL), sex and childhood stressful events (parental neglect, physical abuse, sexual abuse, and emotional abuse).

Results:
We found differences in cognitive impulsivity in the global sample (men and women). 5-HTTLPR S-carriers (p=0,036) showed more impulsivity.
The magnitude of the difference increased when considering the men subsample (p=0,029) and dissapeared in women (p=0,213).
This difference was even higher when considering childhood stressful events. Male 5-HTTLPR S-carriers who had suffered parental neglect showed the greatest impulsivity (p=0,022).

Discussion:
Our results suggest that sex and childhood stressful events modulate the effect of serotonergic genes on impulsivity in suicide attempters. Women show greater impulsivitity than men, but it is not affected by the alleles studied or childhood trauma. Men show less basal impulsivity that increases with the presence of the S allelic variation as well as with the presence of childhood parental neglect, being this subsample of subjects the most impulsive and more sensitive to the allelic variation.

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ABNORMAL SOCIAL COGNITION: A NEW TREATMENT TARGET FOR SUICIDE PREVENTION?

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SUMMARY:

Introduction: Intact social cognition is crucial for developing and maintaining social relationships. Decreased social support and low sense of belonging are known risk factors for suicide. Borderline personality disorder (BPD) severely impairs social functioning and has a 10% lifetime risk for suicide. BPD patients have social cognitive impairments, but the impact of social cognitive abnormalities on suicidal behavior remains largely unexplored. In this study, we aimed to examine the relationship between social cognition, BPD diagnosis and suicide risk.
Methods: Subjects: 68 male and female veterans (41 fulfilling DSM criteria for BPD, and 27 without BPD) were recruited from an outpatient mental health clinic at a VA medical center. They were classified into 2 groups: a "high risk group", including those with a history of one or more suicide attempts, or at least one psychiatric hospitalization due to serious suicidal ideation; and a "low risk group", including those with no history of suicide attempts or suicidal ideation. Measures: We examined social cognition abnormalities using two objective, validated behavioral paradigms â€“the Reading of the Mind in the Eyes Test (RMET) - and the Movie for the Assessment of Social Cognition (MASC)-. The RMET is an established social cognition task requiring emotion recognition by focusing only in the facial eye region. The MASC is a real-life, naturalistic social cognition task, that measures subtle mentalizing difficulties, with high inter-rater reliability (ICC=0.99), test-retest reliability (r=0.97), and internal consistency (Cronbach's Î±=0.86). It involves watching a 15 min movie about 4 characters. Multiple-choice questions about the characters' feelings/thoughts/intentions are asked, yielding quantitative (mentalizing accuracy) and qualitative measures (hypomentalizing/ hypermentalizing errors). Performance on the social cognition outcome measures (RMET and MASC) was compared across groups (high-risk vs low-risk) and diagnoses (BPD vs no BPD) using ANOVA.
Results: Mentalizing scores on the MASC hypomentalizing subscale were significantly more impaired among those in the high-risk group for suicide, approximately 80% of whom fulfilled criteria for BPD ($F=4.7;df=1;p=0.033$). RMET scores did not differ between the "high-risk" and the "low-risk" groups, or between those with or without BPD.
Conclusions: Our results suggest a potential association between impaired social cognition and higher risk for suicide. Because intact social cognition is required to develop and maintain social relationships, the effect of poor social cognition on suicide may be mediated by a decrease in social support and belongingness. Future studies should analyze the effect of social cognition on social support and perceived belongingness.

RESILIENCE AND SUICIDALITY: IS THERE AN ASSOCIATION?

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SUMMARY:
Introduction:
Suicide behaviour is a prime cause of hospitalization in acute psychiatric facilities. About 30% patients are admitted with a suicide attempt and about another 30 to 35% get admitted in a suicidal crisis.
Patients who are repeatedly hospitalized also have a high suicide potential and risk. A number of factors determine their level of risk and severity of intent however it remains undetermined how exactly people cope with suicidal ideations.
Resilience is a psychobiological factor which allows people to adapt, modulate and respond to a trauma and. stress It is an independent neurobiological dimension which enables one to adapt to environmental challenges and overcome adversity. It is well known that resilience has an inverse relationship with Suicidality. However level of resilience, and its association with Suicidality amongst hospitalized patients are not studied.
Method
In this prospective cross sectional, cohort study of sixty hospitalized patients, we examined level of resilience and its correlation with level of Suicidality. Resilience was assessed by CR-RISK and Suicidality by SISMAP scale
Results
Our results showed that mean CD-RISK score was 50.8 (15.9) amongst the hospitalized patients. More than 50% patients had mean score of resilience score less than 50.
There was a consistent negative correlation between level of resilience and level of Suicidality ($r = -0.424$, $p= .012$, CD-RISK <60 vs. > 60, SISMAP score (35.1 vs. 22.8 $p=.004$)
Conclusion: hospitalized patients with high Suicidality had low resilience which possibly plays a role is hospitalization due to Suicidality.

POSTPARTUM SCREENING OF PSYCHIATRIC DISORDERS USING THE EDINBURGH POSTNATAL DEPRESSION SCALE

Lead Author: Daniel F Linhares, M.D.
Co-Author(s): Jeffrey Freedman, M.D., Swapna Vaidya, M.D., Amanda Carrera-Alvarez, M.D.

SUMMARY:
Postpartum depression is a major psychiatric problem. Efforts have been made to allow early identification and treatment. The Edinburgh Postnatal Depression Scale (EPDS) is commonly used for that purpose, usually on an outpatient basis weeks after the delivery. Mount Sinai Roosevelt has taken the initiative of administering this scale after delivery, at the inpatient setting, to help identify women who are at risk for postpartum depression.

OBJECTIVES:
To assess the reliability of using the EPDS after delivery (1-2 days postpartum), as opposed to delay as an outpatient. This would allow for early identification of psychiatric disorders and referral for treatment.

METHODS:
Within the first days after childbirth, the postpartum patients at Mount Sinai Roosevelt completed the EPDS during the period of 07/01/14 until 12/01/14. Scores above 11 or indication of self-harming thoughts (question #10) prompted a psychiatric consultation. 12 consults were called. From all the consults triggered by the EPDS, we measured how many of them correctly identified a mental disorder where psychiatric intervention was indicated.

RESULTS:
From the 12 consults called, 11 (92%) elicited mental health problems in need for psychiatric care. Only 1 (8%) patient was found to not have any significant psychiatric disturbance in need of

treatment. After the psychiatric consultation, 3 (25%) patients were diagnosed with PTSD, 2 (17%) with Dysthymic Disorder, 2 (17%) with Borderline Personality Disorder, 1 (8%) with Bipolar Disorder, 1 (8%) with Mood Disorder NOS, 1 (8%) with Depressive Disorder NOS, 1 (8%) with Panic Disorder and 1 (8%) was given no psychiatric diagnosis.

CONCLUSIONS:
The EPDS appears to be a reliable tool for the diagnosis of mental health problems even when administered immediately postpartum. It did, however, identify a range of different psychiatric diagnosis other than Depression. Psychiatric care was indicated for most of the patients, justifying the usefulness of the EPDS. The main limitation of this study is the small cohort of patients. Due to the lack of specificity evident in this study, it is necessary to develop more precise tools for the early detection of postpartum depression.

PREVALENCE AND RISK FACTORS FOR CANNABIS USE IN LOW INCOME PREGNANT WOMEN IN SÃƒO PAULO, BRAZIL

Lead Author: Janet Shu, M.D.
Co-Author(s): Hsiang Huang, M.D., Alexandre Faisal-Cury, M.D.

SUMMARY:

Cannabis is the most commonly used illicit drug during the perinatal period and has potential risks to the fetus. The purpose of this study is to estimate one-year prevalence of cannabis use and identify risk factors for a population of low income pregnant women in Brazil. We performed a cross-sectional analysis of 831 women surveyed using the Self-Report-Questionnaire-20 (SRQ-20) and a structured questionnaire to collect sociodemographic and substance use history. The one-year prevalence of antenatal cannabis use was 4.2%; reported lifetime use was 9.63%. The factors significantly associated with cannabis use were presence of a common mental disorder and tobacco smoking ($p<0.001$).

This is the first study to report the significant association between tobacco smoking, CMD, and cannabis use in a population of low income pregnant Brazilian women. While tobacco smoking is frequently screened for during pregnancy, cannabis use is often overlooked, despite its adverse effects on both mother and child.

QUALITY OF LIFE IMPAIRMENT IN PERINATAL WOMEN WITH COMORBID MDD/GAD: PHARMACOTHERAPY TREATMENT OUTCOME

Lead Author: Shaila Misri, M.D.
Co-Author(s): Elena Swift, MRes

SUMMARY:

Introduction: Comorbid Generalised Anxiety Disorder (GAD) and Major Depressive Disorder (MDD) in perinatal women is often under diagnosed resulting in suboptimal treatment, leading to significant maternal dysfunction. We describe a prospective, longitudinal course, treatment outcomes and quality of life (QoL) in pregnant and postpartum women diagnosed with MDD and Anxiety Disorders.
Methods: Two separate groups of pregnant and postpartum women with MDD were recruited through a university hospital outpatient mental health clinic for antidepressant treatment. Postpartum women with (N=11) and without GAD (N=8) were compared longitudinally using GEE, on MADRS, HAM-A and PSWQ; Q-LES-Q scores were also examined. Ham-A and Ham-D scores of pregnant women with excessive worry (PSWQâ‰¥62, N=14) were compared to those without (N=15).
Results:
Treatment Outcomes in Post-Partum Depressed Women with GAD
MADRS scores decreased significantly over time (B=-5.93 (SE=.52), $p<.000$); they were

higher for those with GAD (B=4.96 (SE=1.78), p=.005). There was a significant decrease in Ham-A scores over time (B=-3.92 (SE=.59), p<.000); those with GAD had higher scores than those without GAD (B=4.39 (SE=1.72), p=.011).

Course of Worry Symptoms in Post-Partum Depressed Women with GAD

PSWQ scores decreased significantly over time (B=-3.41 (SE=.81), p<.000); the GAD group scored higher (B=21.28 (SE=2.89), p<.000). At final visit GAD women still had a higher mean score (51.3, SD=10.82) than initial mean score of those without (42.8, SD=14.76).

QoL in Post-partum Depressed Women with GAD

Descriptive analysis revealed both groups improved in all QoL domains from initial to final visit, but the non-GAD group improved further.

Treatment Outcome in Antenatally Recruited Depressed Women with Excessive Worry

Chi-square tests showed that women with excessive worry were less likely than those with normal worry to achieve remission on the Ham-D at any visit (21.4% vs. 60.0% respectively; Ï‡Â²(1)=4.44, p=0.035). Remission on Ham-A displayed the same pattern, but was not significant (21.4% vs. 46.7% respectively; Ï‡Â²(1)=2.04, p=0.15).

Conclusions: Findings revealed that women with comorbid MDD/GAD in pregnancy were less likely to achieve remission of depression. In post-partum women 1) were slower to recover (Ham-A and MADRS); majority reached remission of depression by final visit 2) although for both groups worry improved with treatment, the final mean worry score for GAD women remained higher; they did not return to same quality of life. This subgroup was severely ill at assessment; their excessive worry did not respond to antidepressant monotherapy. There is an urgent need for recognition of differential clinical outcomes of GAD with pregnant and postpartum women undergoing antidepressant treatment. Given the high prevalence and the chronic debilitating course of MDD/GAD comorbidity, our findings merit replication in a better powered study of perinatal population.

HEALTH RESOURCE UTILIZATION AND COSTS FOR SCHIZOPHRENIA PATIENTS WITH PRIOR ATYPICAL ANTIPSYCHOTIC USE BEFORE AND AFTER ASENAPINE INITIATION

Poster Presenter: Rosa Wang, B.Sc., M.H.A.

Lead Author: Rosa Wang, B.Sc., M.H.A.

Co-Author(s): Abhishek S. Chitnis, M.Pharm., Ph.D., Shawn X. Sun, Ph.D., Shailja Dixit, M.D., M.P.H., Rosa Wang, M.S., Alie Tawah, B.S., Luke Boulanger, M.A., M.B.A.

SUMMARY:

OBJECTIVE: Schizophrenia is associated with numerous societal, familial, as well as significant direct and indirect healthcare costs. This study compared the health resource utilization (HRU) and economic burden for patients with schizophrenia who initiated asenapine with prior atypical antipsychotic therapy use.

METHODS: In this retrospective cohort study, adult patients (â‰¥18 years old) with schizophrenia (ICD-9-CM 295.xx) who newly initiated asenapine between 2009 and 2012 and had prior atypical antipsychotic use were selected from Truven Health MarketScanÂ® Commercial and Medicare Supplemental Insurance data. All patients had at least 6 months of continuous enrollment before (pre-) and after (post-) asenapine initiation (index date). All-cause and schizophrenia-related HRU and healthcare costs were compared between pre-and post- index periods. All healthcare costs were adjusted to 2012 dollars using the medical component of Consumer Price Index.

RESULTS: The 287 patients on asenapine that met the study criteria had an average (SD) age of 40 (15.9) years â€“ 60.3% were female, and 51.2% had a preferred provider organization health plan. The average (SD)

Charlson comorbidity index score was 0.49 (1.09). The most common comorbid condition was bipolar disorder (48.4%) followed by depression (41.8%) and alcohol/substance abuse (18.8%). Patients with schizophrenia showed a significant decrease between pre- and post- periods for any hospital admissions (all-cause: 41.5% vs. 27.2%, p<0.05; schizophrenia-related: 28.2% vs. 16.7%, p<0.05), any emergency room visits (schizophrenia-related: 5.6% vs. 2.4%, p<0.05), and the average length of hospital stays (all-cause: 6.6 vs. 3.3, p<0.05; schizophrenia-related: 4.0 vs. 2.2, p<0.05). Between pre- and post- index periods, patients showed a statistically significant decrease in total average healthcare costs (All-cause: $16,137 vs. $12,374, p<0.05; schizophrenia-related: $8,250 vs. $6,343, p<0.05), inpatient services (All-cause: $9,148 vs. $5,247, p<0.05; schizophrenia-related: $5,007 vs. $2,401, p<0.05) as well as emergency room services (All-cause: $160 vs. $74, p<0.05). Pharmacy costs increased between the pre- and post- index periods (All-cause: $4,259 vs. $4,772, p<0.05; schizophrenia-related: $2,560 vs. $3,219, p<0.05).
CONCLUSION: These data show lower HRU and total direct costs for patients with schizophrenia after the initiation of asenapine versus before its initiation. Higher pharmacy costs were offset by lower healthcare costs for inpatient and emergency room costs. Further assessment of how asenapine affects patient outcomes and healthcare expenditures should be undertaken.

DEVELOPMENT OF A TELE-PSYCHIATRIC CARE SATISFACTION QUESTIONNAIRE ACROSS 4 DOMAINS APPLICABLE TO THE MÃ‰TIS NATION OF ONTARIO

Lead Author: Tariq Hassan, M.B.B.S.

SUMMARY:

Title: Development of a Tele-Psychiatric Care Satisfaction Questionnaire across 4 domains applicable to the MÃ©tis Nation of Ontario

Background: Tele-Psychiatric care satisfaction among aboriginal populations in the United States (U.S.) has shown high satisfaction metrics. There is a paucity of research literature wherein re-production of research methods used the U.S. have been adapted or applied to similar Canadian aboriginal populations. Since 2011, Tele-Psychiatric care has been delivered on a regular and consistent basis to the Metis Nation of Ontario (MNO) by Providence Care Mental Health Services (Affiliated with Queen's University Department of Psychiatry in Kingston, ON). This study has provided an opportunity to measure and compare U.S. vs. Canadian data of Tele-Psychiatric satisfaction among similar patient populations.

Methods: Shore et al. (2008) had developed a questionnaire to capture culturally unique factors important in measuring Tele-Psychiatric care satisfaction among "American Indians" of the U.S. Great Plains. With his permission we modified the questionnaire to meet our research needs in order to measure tele-psychiatric care satisfaction among MÃ©tis Nation of Ontario patients (N=55) who had received care from 2011-present. Like Shore et al. we used a process measure across 4 domains deemed important in assessing overall patient satisfaction in this similar 1st Nations Canadian Population. The domains remained: 1) Usability of the technology 2) Patient/Provider interaction; 3) Cultural competence of the interview, and 4) Patient satisfaction. These domains will be measured using a 28 item questionnaire, with each item being scored on a 5 point Likert Scale. Questionnaire items were modified to reflect the fact that patients would be using best-recall to retrospectively provide answers to the 28 items based on the inclusion criteria of having 1 or more Tele-Psychiatry session(s) from 2011-present. In order to conduct this

research a proposal had to be submitted to the MNO outlining the purpose, methods, and hypothesis as well as to ensure proper ethics and maintenance of confidentiality was at the level of the MNO's expectations. The questionnaire will be mailed to all MNO patients along with a cover letter explaining informed consent, anonymity and the intent to assess and improve tele-psychiatric care delivered to the MNO. The hypothesis of the study is that although high satisfaction metrics may be obtained in Canadian data, there may be differing patterns of results, potentially equal or higher metrics of satisfaction based on differences in U.S vs. Canadian health care delivery to aboriginal peoples.

Conclusion: The MNO had recently approved this research study to move ahead in Spring 2014. The first outcome of this study is successful modification of a validated and published Questionnaire in order to apply this research methodology to the MNO in Canada.

MAY 19, 2015

YOUNG INVESTIGATOR POSTER SESSIONS 2

Volunteer Moderators: Sadiq Hasan, M.D., Chetana A Kulkarni, B.Sc., M.D., Mariana Pinto da Costa, M.D.

COMPARISON OF INTERNATIONAL COMPETENCY FRAMEWORKS FOR PSYCHIATRY RESIDENCY- IMPLICATIONS FOR ADMINISTRATION AND LEADERSHIP

Lead Author: Ashwin Jacob Mathai, M.D.
Co-Author(s): Farooq Mohyuddin, M.D.

SUMMARY:

Background: There has been a steady decline in psychiatrists entering leadership positions over the last 30 years. The changing landscape of psychiatry warrants psychiatric leaders who can fulfill the roles of able advocates for their patients and the field. They should have the vision to allocate resources in a cost-effective manner and influence policy in the best interest of the patient. Accreditation bodies for psychiatry training around the world have recognized this need and reformed competency guidelines.

Method: We analyzed competency frameworks for psychiatry residency training, specifically managerial and administrative training requirements, prescribed by accreditation bodies in Canada, UK, Australia, New Zealand and the European Board of Psychiatry and compared it to the Psychiatry Milestones Project which embodies the next generation of competency requirements for psychiatry training in the U.S.

Results: The CanMEDS framework, developed by the Royal College of Physicians and Surgeons of Canada (RCPSC), was used to guide competency frameworks for psychiatric training in Canada, UK, Australia, New Zealand and most recently, by the European Board of Psychiatry to list learning outcomes for national boards and other regulators of psychiatry training in Europe. Professional organizations and councils responsible for accreditation in these countries have outlined explicit competencies under the purview of the role of Manager including having an understanding of organizational structure, finance management and resource allocation, change management, quality improvement, mental health legislation and reform. Psychiatrists are required to identify and address barriers and inequity in access to care, to advocate on behalf of patients and care-givers, to understand the impact of legislation and public policy on patients and to protect the field from competing interests and participate in shaping the future of mental health and psychiatric practice. The Psychiatry Milestones Project developed collaboratively by American Board of Psychiatry and Neurology and ACGME, lists some physician-manager skills in the 22 sub-competencies for semi-annual

review and assessment of psychiatry residents; communication skills, conflict management and team-based care, quality improvement, providing care as a consultant and collaborator and community-based program administration.
Conclusions: The authors believe ACGME should consider explicit guidelines regarding demonstration of competencies that are central to fulfilling the role of the physician-manager along the lines of other graduate medical education councils around the world. This is congruent with the perceived lack of administrative training during residency that has been identified by psychiatrists and residents alike, and the consequent inability to be effective agents of change.

LGBT CONTENT REPRESENTATION IN THE PRITE

Lead Author: Jeffrey Neal, M.D.
Co-Author(s): Carol Thrush, EdD
Molly Gathright, MD

SUMMARY:

LGBT Content Representation in the PRITE
Background: Individuals who are Lesbian, Gay, Bisexual or Transgender (LGBT) report suicide attempts at higher rates than the general population and have higher rates of mental illness, including mood disorders, anxiety disorders, and substance use disorders. The Association of American Medical Colleges Advisory Committee on Sexual Orientation, Gender Identity, and Sex Development recently released a report urging the medical education community to implement curricular and institutional changes to improve health care for LGBT and other similar populations suffering from disparities (AAMC, 2014). In this report, one of the stated goals is to improve certification exams by including "questions relating to the care of patients who are LGBT, gender nonconformingâ€¦." The most commonly used assessment tool in psychiatric residency education is the PRITE (Psychiatry Residency in Training Exam). The purpose of this study is to assess how much coverage of LGBT mental health issues is evaluated in the PRITE and how does it compare to other psychosocial topics.
Methods:
Five PRITE examinations from the years 2009 to 2013 were reviewed for questions relating to LGBT issues, Trauma and Abuse, Pregnancy and Postpartum, and Religion and Culture to evaluate for content in the question stem and in the answer choices. The total for each category was then tabulated and compared to each other and to the total number of questions in the PRITE (300 questions for each year).
Results
The LGBT category had the smallest number of questions of the topics listed. Out of a total of 1500 questions over five years, 3 question stems or answer choices related to LGBT issues. This is an average of less than one item per year (out of 300 questions). The other subjects had 5 year totals of 28 items (Trauma and Abuse), 18 items (Religion and Culture), and 12 items (Pregnancy and Postpartum).
Conclusions:
Main findings were a small number of items on the PRITE that relate to LGBT mental health issues. There were 3 questions over five years out of 1500 questions. As the predominant national assessment tool, the PRITE is a metric that can be used to show that these issues are underrepresented on most tests. Given the prevalence and relevance of the LGBT population in psychiatry, it is clear there is a need for more curricular attention to these topics on in-training exams such as the PRITE, and potentially on certification exams as well. More research needs to take place to confirm the findings in this study. Addressing these educational issues will be paramount in providing a comprehensive psychiatric residency education.

MEDICINE IN PSYCHIATRY: WHAT DO WE NEED TO KNOW?
A RESIDENT-INITIATED TEACHING PROGRAM

Lead Author: Veena C. Rao, M.D.
Co-Author(s): Robert Dugger, M.D., M.P.H., Eugene Grudnikoff, M.D., John Young, M.D., Peter Manu M.D.

SUMMARY:
BACKGROUND: Although training in internal medicine is required for psychiatry residents, the curriculum is not specified. Resident-centered learning/teaching are valuable educational innovations that may help define curricular needs for medicine in psychiatry.

OBJECTIVES: To identify topics chosen for focused learning/teaching by psychiatry residents during a mandatory 4-week medicine rotation.

METHODS: First-year psychiatry residents rotating through the medical consultation service of a free-standing psychiatric hospital participated in the study between July 1st- November 21st, 2014. Each day, residents selected, learned, and presented to a faculty preceptor a topic from among the medical problems evaluated by them that day. Data collected included topic chosen, reason for choosing the topic, source(s) used to learn about the topic, and reasons for choosing source(s).

RESULTS: The learning/teaching activity took place on 69 of 93 working days. The selected topics addressed hematological (21.7%), cardiovascular (14.5%), endocrinology (13%), toxic/metabolic (11.6%), genitourinary (7.2%), infectious diseases, neurological, and skin/soft tissue (all 5.8%), pulmonary (4.3%), gastrointestinal (2.9%), and musculoskeletal (1.4%) issues. Issues related to electroconvulsive therapy (ECT) were discussed in 5.8% of sessions. Clinical importance was more commonly invoked than self-disclosed knowledge gap (59.4% vs. 27.5%, p=0.0003). The subscription-only online site UpToDate was used in 36.2% of the learning/teaching sessions (p>0.002 compared with all other online or print resources). Conciseness was valued greater than ease of access and thoroughness (p >0.05).

CONCLUSION: Psychiatry residents chose a very wide variety of topics for learning medicine in psychiatry. The selection was based on perceived clinical importance and learning used the most concise information resources.

THE ASSOCIATION BETWEEN BRAIN-DERIVED NEUROTROPHIC FACTOR GENE POLYMORPHISMS AND SUICIDAL BEHAVIOR IN MAJOR DEPRESSION

Lead Author: Mira Choo
Co-Author(s): Seoyoung Yoon, M.D., Ho-kyoung Yoon, M.D., Ph.D., Yong-Ku Kim, M.D., Ph.D.*
**Corresponding author. Kim YK.; Email:*

SUMMARY:
Objectives: Previous studies have suggested that genetic factors affect suicidal behavior in major depression. In particular, brain-derived neurotrophic factor (BDNF) genes have received much attention because of a possible association between such genes and suicidal behavior in major depression. In this study, we aimed to investigate associations between two BDNF SNPs (196G/A, 11757G/C) and suicidal behavior in major depression.
Method: Participants were 120 major depressive disorder (MDD) patients attempting suicidal behavior, 117 non-suicidal MDD patients and 180 healthy controls. The genotype and allele frequencies of each group were analyzed using chi-squared statistics. Frequencies and haplotype reconstructions were calculated using SNP Analyzer 2.0.
Results: No significant associations were found between genotype distributions or allele frequencies of the two tested polymorphisms (196 G/A, 11757G/C) among suicidal MDD patients, non-suicidal MDD patients and controls. In the haplotype study, there was also no significant difference in haplotype analysis

between suicidal MDD patients and non-suicidal MDD patients. However, the BDNF 196Aâ€“1175G haplotype combinations and 196Gâ€“11757C haplotype combination were significantly lower in the suicidal MDD group and non-suicidal MDD group compared to healthy controls.
Conclusion: We did not find any relation between the tested BDNF genes and suicidal behavior in MDD. However, this study is significant in that this is the first haplotype study that tried to identify the associations between BDNF SNPs and suicidal behavior in a Korean population. Future research should be conducted with larger sample sizes and more genetic markers, taking ethnicity into consideration.
Keywords: Suicide; Major depressive disorder; Brain-derived neurotrophic factor; Single nucleotide polymorphism; Gene

C-REACTIVE PROTEIN ASSOCIATED WITH SUICIDAL BEHAVIOR IN AN INPATIENT POPULATION

Lead Author: Lauren Davis
Co-Author(s): Hunter Gibbs, M.D., Lou Ann Eads, M.D., Jeffrey Clothier, M.D., Ricardo Caceda, M.D., Ph.D.

SUMMARY:
Objective: Recently evidence implicates inflammatory processes in the pathophysiology of suicide and depression. Patients who have attempted suicide and those who suffer from suicidal ideation appear to have altered levels of inflammatory cytokines when compared to healthy controls. To further elucidate this concept, we interrogated C-reactive protein (CRP) serum levels in hospitalized patients with a recent suicide attempt, suicidal ideation, and inpatients without recent suicidal ideation or behavior.

Methods: Medical records of patients admitted to the adult inpatient units (N = 218) to the Psychiatric Research Institute, University of Arkansas for Medical Sciences between January 1 and June 31, 2014, were reviewed. Clinical data collected included: erythrocyte sedimentation rate (ESR), high sensitivity CRP, white blood cell count, and a fasting lipid panel including low-density lipoprotein, high-density lipoprotein, and triglycerides. Other information obtained were demographics, diagnosis, affective state, level of suicidality, presence of substance use disorders and length of hospitalization.

Results: After accounting for clinical and demographic differences, affective state and CRP levels were independently associated with suicidality status [F(2,187) = 3.69, p = .001]. Patients hospitalized following suicide attempts (p=.029) and those with suicidal ideation (p=.076) showed higher levels of serum CRP than psychiatric controls. Length of stay independently associated with serum ESR (p = .042) and affective status (p = .013)

Conclusions: Our findings in hospitalized psychiatric patients with severe functional impairment support the association of a pro-inflammatory state with suicide. The potential effect of inflammation on length of stay as an indirect marker of depression severity will need further replication and exploration.

NEAR-MISS DIAGNOSIS OF PERNICIOUS ANEMIA: B12-DEFICIENCY ALGORITHMS APPLIED IN A PSYCHIATRIC CASE

Lead Author: Marc Ettensohn, M.D.
Co-Author(s): Uma Suryadevara, M.D.

SUMMARY:
Introduction. A large number of psychiatric patients with B12 deficiency have actual absorption pathologies, such as pernicious anemia or colectomy/gastrectomy. We present a case that examines some common algorithms used in elucidating B12-deficiency root cause and how these approaches would have failed to diagnose pernicious anemia as the cause of our patient's B12 deficiency. Reducing the algorithmic criteria required for obtaining

labs, such as homocysteine (Hcy), methylmalonic acid (MMA) and Anti-Intrinsic Factor Antibody titer (anti-IF), may help diagnose and treat underlying B12 deficiency etiologies that may otherwise go undiagnosed.
Case. A 70-year-old African-American male was admitted to inpatient psychiatry for suicidal ideation, homicidal ideation and auditory hallucinations. Prior to hospitalization, he had been started on multiple antipsychotics, which failed to reduce symptoms. Auditory hallucinations started at age 41 and his past psychiatric history was significant for post-traumatic stress disorder, depression, psychosis and polysubstance dependence, which was in sustained full remission. Given the combination of mildly decreased vitamin B12 levels (200 pg/mL) without folate deficiency, a mild anemia (hemoglobin was 13.5 g/dL) without mean corpuscular-volume abnormality, gait disturbance of unknown etiology, a vegetarian diet, and psychotic symptoms that did not resolve with antipsychotics, Hcy and MMA levels were obtained. Hcy levels of 13.0 umol/L (upper limit: 11.4 umol/L) and a MMA level of 254 nmol/L (reference range: 87â€“318 nmol/L) were determined. Given that Hcy was elevated, an Anti-IF titer was obtained and found to be positive. Based on the titer's 98% specificity, pernicious anemia was diagnosed. After intramuscular B12 treatment that was transitioned to high-dose oral B12, psychotic symptoms resolved.
Discussion. Literature examination showed two potential diagnostic barriers that may have prevented initial diagnosis of pernicious anemia. The first barrier is that our patient's B12 level was not low enough by some standards to do a work-up (such as obtaining an anti-IF) for other underlying causes. The second barrier is that even with lower B12 levels, some approaches would only require obtaining a MMA level, whereas our patient had a high Hcy without a MMA abnormality.
No guidelines exist among major medical societies for B12 screening. Further studies are necessary to establish better protocol for use of Hcy, MMA and anti-IF labs. Including criteria that address psychiatric symptoms in such protocols may increase the positive predictive value of these labs. Until further studies prove otherwise, we advocate systematic work-up via MMA and Hcy levels in all psychiatric cases with mild to severe B12 deficiency characterized by one other abnormality with an unknown cause, such as a neurologic deficit, pernicious anemia, mild to severe anemia or another suggestive hematologic abnormality.

DEHYDROEPIANDROSTERONE SULFATE (DHEA-S) LEVELS IN DIFFERENT SEVERITY OF SYMPTOMS IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER

Lead Author: Dasom Uh
Co-Author(s): Kwang-Yoen Choi, M.D., So-Young Oh, M.D., Ph.D., Hyun-Ghang Jeong, M.D., Ph.D.

SUMMARY:
Background
The pathophysiology of major depressive disorder (MDD) is still not well understood. Dysregulation in hypothalamo-pituitary-adrenal (HPA) axis and related hormones are believed to play a role in etiology of MDD. Previous studies have reported that neuroactive steroids, such as dehydroepiandrosterone (DHEA) and its sulfate form DHEA-s, possibly modulated depressive symptoms, but have also shown conflicting results. Therefore, we aim to investigate the levels of DHEA-s, cortisol, homocysteine and folate in the different severity symptoms of MDD patients.
Methods
One hundred seventeen patients with MDD (79 female and 38 male) were recruited from general practice. Depressive symptoms were assessed using the Beck Depression Inventory (BDI). Subjects were classified by total scores on BDI; less

than15 as mild depression, 16â€“23 as moderate depression, and 24â€“63 as severe depression. Plasma levels of DHEA-s were measured by radioimmunoassay. Cortisol, homocysteine, and folate levels were also measured in all subjects. Blood samples were collected from 08:00 am to 10:00 am.

Results

Subjects aged 17 to 81 years (meanÂ±SD=55.5Â±15). When subjects were classified into subgroups according to their severity of depressive symptoms, DHEA-s levels did show a significant difference between groups (p=0.006). Among subjects with mild-to-moderate depression, DHEA-s levels numerically increased as BDI scores did. However, this trend was not apparent in subjects with severe depression. Levels of DHEA-s levels (76Â±71ug/dL) of the subjects with severe depression were significantly lower than those (120Â±79ug/dL) of subjects with moderate depression (p=0.003). Levels of plasma cortisol, homocysteine and folate did not differ significantly between subgroups.

Discussion

Our findings suggest that DHEA-s might be involved in symptom manifestations of MDD patients. We could cautiously speculate that the upregulation of DHEA-S may be a part of compensatory process in mild-to-moderate depression, and the failure of this compensation mechanism may underlie the development of severe depression. Levels of DHEA-s may be indicative of the mood state, especially regarding to the severity of depression.

Key Words: DHEA-s, Major depressive disorder, severity of depressive symptoms

3D SHAPE ANALYSIS OF THE HIPPOCAMPUS IN INDIVIDUALS AT HIGH FAMILIAL RISK FOR DEPRESSION

Lead Author: T. Ece Durmusoglu, M.D.
Co-Author(s): Onur Ugurlu, Ph.D., Sebnem Tunay, Ph.D, Fatma Simsek, M.D., Omer Kitis, M.D., Ali Saffet Gonul, M.D.

SUMMARY:

INTRODUCTION: Hippocampal volume reduction is one of the repeated finding in major depressive disorder (MDD), however the results are inconsistent. Some of the studies did not detect any volume reduction in first episode patients and some of them detected volume reduction only in highly reccurent and treatment resistant patients, supporting that it is a consequence of depression and occur over time after disease onset. On the other hand, some studies suggested that smaller hippocampal volume might be a predisposing factor before the onset of the clinical symptoms and influences the development and course of illness. It is not yet clearly known that if the smaller hippocampal volume is a pre-existing vulnerability risk factor or a result of high cortisol toxicity reported in depressed patients on the long-term. One way to solve this problem is to investigate hippocampal volume in high risk population before they experience a depressive episode. Therefore, as the family history is the strongest risk factor for depression here we investigated hippocampal formation (HF) in healthy daughters of mothers with reccurent familial depression and their healthy controls. To detect the minor changes in the hippocampus of the high-risk group, we further did shape analyses in addition to volume analyses.

METHODS: We recruited 27 healthy daughters of mothers with reccurrent familial depression as high familial risk for depression group and 26 healthy girls without any personal or family history of depression as low familial risk for depression group. Participants were evaluated with SCID-I, HAM-D-17, STAI and 3 Tesla MRI was performed. Hippocampal borders were outlined manually using ITK-SNAP software. The 3D HF shape analysis is based on the use of Spherical Harmonic Basis Functions (SPHARM). MANCOVA with Risk (high-risk, low-risk) as between subjects factor and

TBV and age as covariates was used to compare right and left HF volumes and shapes between the groups.
RESULTS: Although total right and left HF volumes did not differ between the groups, shape analyses revealed a significant group effect in the right hippocampus. The high-risk group showed some contracted and expanded shape deformations in right hippocampal head (subiculum, CA1, CA2-3).
DISCUSSON: Our results suggested that, although they might not cause total volume differences among the groups, some subregional deformities might be present in the hippocampus of the high-risk group before symptoms occur. The observed deformities in the right hippocampal head might be a vulnerability risk factor and play a role in development of symptoms in long term. Therefore, the pre-existence of hippocampal deformities in genetically high-risk group might be accepted as an endophenotype marker for depression.

THE EFFECTS OF AN ENGLISH LANGUAGE EDUCATION ONLINE GAME ON ENGLISH ABILITY AND BRAIN CONNECTIVITY IN NATIVE SOUTH KOREANS: A PILOT STUDY

Lead Author: Jisun Hong, M.D.
Co-Author(s): Jinuk Song, M.D., Doug Hyun Han, M.D., Ph.D., Sun Mi Kim, M.D., Ph.D., Young In Kim, M.D., Perry F. Renshaw, M.D., Ph.D.

SUMMARY:
Introduction
Best advantage in computer applied language education may be to use a variety words in multiple modalities including printed text, graphics, dynamic video, and sound for correct pronunciation. Considering the advantage of on-line game playing, the HoDoo English game was developed to teach English for Korean natives. We hypothesized that English language education online game would improve the speaking and understanding of English. In addition, we predicted that the improvement in English would be associated with the increased functional connectivity of areas involved in language production (Broca's area) and understanding (Wernicke's area) networks.
Methods
Twelve children within the age range of 9-10 years old were recruited. In order to assess English ability, a native British English speaker assessed the children in terms of English language proficiency and pragmatic skills. After assessment of English ability, 12 children were asked to have an fMRI scan. For the subsequent 12 weeks, the children were asked to play the online English education game for 50 minutes/day, five days/week. At the end of 12 weeks game play, assessment of English ability and fMRI scanning were repeated.
Results
The non-verbal pragmatic skills has been improved ($F=8.74$, $p=0.01$) while verbal pragmatic skills ($F=0.06$, $p=0.81$) and proficiency levels ($F=1.87$, $p=0.20$) did not change. During 12 weeks of English education online game play, connectivity between Broca's area seed to left middle frontal gyrus (BA 11) (p uncorrected<0.001) and Wernicke's area seed to left parahippocampal gyrus (BA 19) and right medial frontal gyrus (BA 11) (p uncorrected<0.001) increased. The changes in non-verbal of pragmatic scores were positively correlated with the averaged peak values in left parahippocampal gyrus at a trend level ($r=0.51$,$p=0.08$). There were no significant correlations between IQ, non-verbal pragmatic scores and averaged peak values in other areas.
Discussion
To the best of our knowledge, this is the first study to show the improvement of English ability accompanying prediction factor of intelligence components and changes in brain activity within language areas after on-line language education game play. English education online game improves second language non-verbal

pragmatic skills in native Korean children. After English education online game play, children showed positive connectivity between Broca's area and left frontal cortex as well as between Wernicke's area and left parahippocampal gyrus and right medial frontal gyrus. In addition, the increased connectivity between Wernicke's area and left parahippocampal gyrus was positively correlated with improvement in non-verbal pragmatic scores.
Education meaning
1. English education online game improves non-verbal pragmatic skills in native Korean children.
2. Brain functional connectivity from Broca's area to the left hemisphere as well as Wernicke's area to both hemispheres was enhanced.

YOUR BRAIN ON CAFFEINE

Lead Author: Aaron Winkler
Co-Author(s): Brielle M. Paolini, Paul J. Laurienti M.D. Ph.D., Jonathan H. Burdette M.D.,

SUMMARY:
Background: Neuro-stimulants can drive addictive behavior. Caffeine is the most commonly used neuro-stimulant in the world, it is legal, and users can be neuroimaged during use and withdrawal. While much is known about the molecular and cellular action of caffeine, the aim of this study is to look at the whole brain network to begin to ascertain what changes occur in chronic users during use of and withdrawal from caffeine.

Hypothesis: By analyzing the brain as a functional network we may gain meaningful insight into the brain networks of chronic caffeine users during use and withdrawal.

Methods: The brains of 17 chronic caffeine users were imaged using fMRI. Each subject was scanned four times, once in each of four conditions: normally caffeinated prior to arrival and given caffeine by the experimenter; normally caffeinated prior to arrival and given placebo by the experimenter; abstinent for 30 hours prior to arrival and given caffeine by the experimenter; abstinent for 30 hours prior to arrival and given placebo by the experimenter. The functional brain network based on the fMRI data was ascertained for each subject in each condition as follows: The brain was divided into 20,000 equally-sized voxels and warped to fit a standard template so that subjects could be compared; the fMRI time-course activation level in each voxel was binarized as over or under a threshold; each voxel's activation was compared to every other voxel's activation to create a correlation matrix with 400,000,000 entries; patterns of co-activation from the correlation matrix were used to extract a functional network. The community structure of the functional brain network in each condition was determined using modularity analyses to identify neighborhoods of voxels such that neighbors in a module were more connected with each other than with members of other neighborhoods. Having discovered a highly consistent network neighborhood across subjects in the basal ganglia and thalamus, analyses were performed to see if there was a consistent pattern of secondary connections from that module to other areas of the brain.

Results: The consistency of the network neighborhood in the basal ganglia and thalamus is strongly associated with caffeine use and withdrawal. Within that neighborhood, the nucleus accumbens connects most strongly to the anterior insula during prolonged abstinence (state effect). In contrast, the putamen connects strongly to the posterior insula during acute exposure, regardless of previous level of caffeine (drug effect).

Conclusions: The nucleus accumbens and the dorsal anterior insula together may place drug-seeking behavior at the forefront of attention during prolonged withdrawal. Communication between the putamen and posterior insula may be crucial to

conscious awareness of the anxiety and autonomic functioning associated with intake of caffeine.

Funding: NIH Grant DA024950, NIH grant RR07122, Wake Forest University Microbiology Department

ASSOCIATION OF TPH2 G(-703)T (RS4570625), 5-HTTLPR AND MAOA-UVNTR POLYMORPHISMS AND CORTICAL THICKNESS OF THE OFC AND ACC IN FEMALE PATIENTS WITH MDD

Lead Author: Eunsoo Won, M.D.
Co-Author(s): Sook-Haeng Joe, M.D., Ph.D., Yong-Ku Kim, M.D., Ph.D., Min-Soo Lee, M.D., Ph.D., Byung-Joo Ham, M.D., Ph.D.

SUMMARY:
Background: TPH2 (tryptophan hydroxylase 2) G(-703)T (rs4570625) , 5-HTTLPR (serotonin transporter-linked polymorphic region) and MAOA-uVNTR (monoamine oxidase A-upstream variable number of tandem repeats) polymorphisms have been associated with major depressive disorder (MDD) by various studies. Structural alterations of the orbitofrontal cortex (OFC) and the anterior cingulate cortex (ACC) have been suggested to underlie the impaired mood regulation in depression. However, few studies have examined the association of such polymorphisms and structural brain alterations in MDD. This study investigated the possible association of TPH2 G(-703)T (rs4570625), 5-HTTLPR and MAOA-uVNTR polymorphisms and the cortical thickness of the OFC and ACC in female patients with MDD and healthy controls.

Methods: Eighty one female patients with MDD and age, sex, and intracranial volume matched fifity healthy controls were included. All participants were genotyped for TPH2 G(-703)T (rs4570625), 5-HTTLPR and MAOA-uVNTR polymorphisms and subjected to T1-weighted structural magnetic resonance imaging. An automated procedure of FreeSurfer was used to analyze difference in cortical thickness of the OFC and ACC according to diagnosis and genotype.

Results: MDD patients showed a significantly thinner cortex in the left OFC ($F(1,127) = 6.059$, $p = 0.015$), right OFC ($F(1,127) = 21.459$, $p < 0.001$), and right ACC ($F(1,127) = 18.175$, $p < 0.001$) compared to healthy controls. MDD patients with homogenous MAOA-uVNTR low-activity alleles (2R/3R, 3R/3R) showed a significantly thinner cortex in the left OFC ($F(1, 76)=5.962$, $p=0.017$) compared to MAOA-uVNTR high-activity allele carrier patients (3R/4R, 4R/4R). Among healthy controls no significant difference in cortical thickness was detected. No significant difference in averaged cortical thickness of the OFC and ACC in MDD patients and healthy controls according to TPH2 G(-703)T (rs4570625) and 5-HTTLPR genotype was observed.

Conclusions: A decrease in cortical thickness of the OFC and right ACC was observed in MDD patients compared to healthy controls. Also, a decrease in cortical thickness of the OFC according to MAOA-uVNTR genotype in MDD patients was observed, but not in healthy controls. This study might help explain the neurobiological mechanism of MDD by elucidating cortical thickness changes in the brain of MDD patients influenced by genotype.

DEPRESSION TREATMENT ADHERENCE AND PREFERENCES AMONG OLDER LATINOS IN A SPECIALTY GERIATRIC CLINIC

Lead Author: Elena Estrada, B.A., B.Sc.

SUMMARY:
Background: Depression affects at least 10% of older primary care patients and negatively impacts quality of life. Literature suggests that Latinos prefer psychotherapy

over psychotropic medication; however little is known about preferences of older Latinos with multiple co-morbidities and what affects adherence to treatment.

Purpose: To explore factors impacting depression treatment adherence of older Latinos with multiple co-morbidities in a public sector geriatric clinic.

Methods: Providers referred subjects. Patients were eligible if they screened positive for depression on the Patient Health Questionnaire-9 (PHQ-9) and negative for significant cognitive impairment using the Mini-Mental Status Exam (MMSE), psychosis, and bipolar disorder. Participants completed baseline and 6-month quantitative and qualitative interviews. Bilingual social workers offered care management, Problem Solving Therapy and/or antidepressant medication (prescribed by clinic providers).

Results: Of 66 patients referred, 41 (62%) screened positive for depression, 29 (44%) were study eligible. Mean age was 72; 79% were women, 100% Latino, mean number of chronic medical conditions was 4.6, majority were low income. At 6-months, 97% had received treatment; 80% had counseling and medication, 81% took antidepressants for two months or more. Participants were highly satisfied with treatment, on average attended 7.7 sessions. Subjects reported strong preferences for counseling over medication but were open to receiving care in either an individual or group format. Participants preferred same language providers and lower cost services. Participants identified cost, lack of knowledge of where to receive help, and language as barriers to care. Depression symptoms improved (mean PHQ-9 score 15.9 (baseline) v. 9.3 (6 months), $p < .001$); 47% had > 50% reduction in PHQ-9 scores.

Conclusions: Participants adhered to depression treatment and identified treatment preferences and barriers to care. Understanding factors impacting depression treatment adherence of older Latinos with multiple co-morbidities in a public sector geriatric clinic is important in developing feasible and effective interventions in the future.

VIOLENT VIDEO GAMES â€“ PHYSIOLOGICAL AND PSYCHOLOGICAL IMPACT ON CHILDREN AND ADOLESCENTS: LITERATURE REVIEW

Lead Author: Sree Latha Jadapalle, M.D.
Co-Author(s): Monifa Seawell, M.D.

SUMMARY:

Background: Video games became popular in the US in the 1980's. Video seems to be very realistic and interactive, but became increasingly violent with sexual content. Approximately 145 million Americans play video games regularly and 42% of households have a video game system. Seventy percent of children 2 to 18 years old have a game system in their home. In American children, game use increased from an average of 4 hours per week at the end of 1980s, to a current average of 13 hours per week. Recent school shootings involving the young perpetrators who had history of playing violent video games, raised a high alert on further investigating the association between violent video game use and change in the personality traits, anger, aggression leading to violence. American Academy of Pediatrics (AAP) and AACAP proposed that children learn by observing, mimicking and adopting behaviors, which has been the basic principle of social learning model. Literature also supports the idea that prolonged exposure to violent video games can desensitize the youth by emotionally blunting them. Anderson and Bushman in their general aggression model suggested that repeated exposure to violent video games culminates into learning, rehearsal and reinforcement of aggression. Studies so far could not establish the casual

relationship between violent video games and aggression and violence due to lack of standardized methods.

Objectives: To understand the physiological and psychological impacts of frequent use of violent video games on Children and adolescents.

Methods: Web search through Pubmed, Psych info was made on the topic and articles dated between 2010 and 2014 were collected. 12 peer reviewed journal articles on children and adolescents relevant to the topic were collected, compiled, and analyzed. The key words used for searching databases for articles pertaining to the topic included, but not limited to "children, adolescent, heart rate variability, emotion, sleep quality, violent video game, desensitization, aggressiveness".

Findings: Literature so far shows an association between daily exposure to violent video games and number of depressive and anxiety symptoms, aggressive behavior, thoughts and affect and decreased pro-social (helping) behavior over time among pre-adolescent youth. The physiological changes observed in the prolonged violent video play group are increased perception of emotional sadness, lower sleep quality, and increased alertness during the sleep, higher heart rate and higher low frequency/High frequency (LF/HF is used as an index of the sympatho- vagal balance) during sleep.

Conclusion: There is building evidence that prolonged violent video-game play is significantly related to drastic increases in adolescents' course of psychological and physiological disturbances. But the results cannot be generalized due to lack of standardized conceptualization and poor methodologies.

EXAMINING RACIAL/ETHNIC DISPARITIES IN ADULT ADHD DIAGNOSIS WITHIN THE SAN FRANCISCO COUNTY MENTAL HEALTH SYSTEM

Lead Author: Richard Feng, M.D.
Co-Author(s): Melanie R. Thomas, Connie Chen, James Dilley, Thao Tran, Christina Mangurian

SUMMARY:

Background:
Adult Attention Deficit Hyperactivity Disorder (ADHD) is a chronic, disabling psychiatric disorder affecting productivity, quality of life, and exacerbating co-morbid pathologies. Studies suggest that the prevalence of adult ADHD is similar worldwide. Studies have suggested possible racial/ethnic disparities in rates of pediatric ADHD diagnosis, raising questions of whether minorities are less likely to receive diagnosis of ADHD in adults. This study explores racial/ethnic disparities in the diagnosis of adult ADHD patients in the racially and ethnically diverse, San Francisco County mental health system.

Objectives:
Determine whether racial/ethnic disparities exist in the diagnosis of adult ADHD in the San Francisco county mental health system and characterize the population of adults diagnosed with ADHD.

Methods:
Study Design: cross-sectional study
Study Subjects: Inclusion criteria: Age â‰¥18 and received services at one of the five largest outpatient community mental health clinics of the San Francisco Community Behavioral Health Service (CBHS) between November 2013 and November 2014.

Procedures:
The study will be conducted in two parts. In the first part, demographic and other patient-specified variables, previously identified in the literature, including racial/ethnic data, will be collected. In the second part of the study, the population of adults with ADHD will be further

characterized by using additional demographic and clinical data.

Data analysis:
We will determine demographic characteristics of the CBHS population as a whole. After identification of those who are diagnosed with ADHD within our sample, we will use t-tests to determine whether there appear to be any disparities in diagnosis based upon race/ethnicity. We will also use descriptive statistics to describe additional characteristics of the identified ADHD subpopulation, including psychopharmacological treatment and co-morbid diagnosis.

Results: Preliminary data for one mental health clinic population (n=1657) shows that Caucasian patients comprise 17.1% (284/1657) of the entire clinic population, but make up 58% (18/31) of its ADHD population, while Chinese patients comprise 56.5% (937/1657) of the entire clinic population, but only make up 19.3% (6/31) of the ADHD population. The study is currently in the data collection phase, so full results from other CBHS clinics are pending but will be available for poster presentation.

Conclusions: Preliminary results indicate potential under-diagnosis of ADHD among Asian populations served within a county public mental health care system. It is our hope that by providing directors and providers with information on racial/ethnic disparities in the diagnosis of ADHD, this may encourage enhanced education and development of more culturally appropriate and sensitive care. These findings may have broader implications for other systems of care serving diverse populations.

CASE REPORT: ASIAN, HEBREW ONLY SPEAKING MALE EVALUATED FOR DISORGANIZED BEHAVIOR: HOW THE DSM-V CULTURAL FORMULATION INTERVIEW COULD HAVE HELPED?

Lead Author: Ana L. Paredes, M.D.

Co-Author(s): Kishor Malavade M.D., Theresa Jacob Ph.D., M.P.H.

SUMMARY:

Introduction

The DSM-V Cultural Formulation Interview (CFI) operationalizes the gathering of cultural data in a set of 16 questions. It is unclear how using the CFI impacts diagnosis, treatment planning, adherence and patient satisfaction. The objective of the present study is to analyze retrospectively a culturally complex case in the light of the current knowledge of cultural psychiatry to determine how clinical care would have been influenced with information gathered through the CFI.

We present the case of a 38-year old Asian male, Hebrew-only speaking, homeless, unemployed, with no reported past psychiatric history, who was brought to the ER by EMS after multiple attempts to trespass a military base. On evaluation, patient exhibited thought disorder that impaired communication. Patient admitted speaking English and Mandarin, but refused to speak as he had converted to a subtype of Orthodox Judaism that prohibited other languages. Antipsychotic treatment was started and patient was admitted under diagnosis of Psychosis NOS. Patient refused medication and was observed on the unit, determined to be able to care for self despite thought disorder, and subsequently discharged to a homeless shelter upon his request.

Methods

Two searches were conducted in PubMed, for "Cultural Formulation Interview" and "Outline for Cultural Formulation".

Results and Discussion

A total of 21 articles were selected based on relevance to analysis of the case presented. Data from qualitative studies show that CFI affects patient-clinician communication and suggest "a greater appreciation of the interplay between culture, context, and biology can help clinicians improve diagnostic and treatment planning." Studies addressed perceived

barriers to the implementation of the DSM-V Outline for Cultural Formulation, which lead to its revision for the publication of the CFI in the DSM-5.
In our case, we find that some of the information that could have been gathered at the CFI was obtained during the admission interview and hospital stay. Had we utilized the structured CFI early on, we could have efficiently gathered the culturally relevant information at initial interview. This could have impacted treatment options and our approach to the patient. Concern about the patient's cultural background since the first encounter would have increased rapport and may have improved willingness to accept treatment.
Conclusion
Using the CFI in culturally complex cases could affect clinical presentations, perceptions about causation, help-seeking behavior, and treatment adherence in a positive way. It may empower clinicians in eliciting patient and informant perspectives and in increasing the cultural contextualization of mental illness, which in turn could lead to superior patient outcomes. Further research may delineate the type of cases in which CFI could be routinely used.

SOCIAL MEDIA AND ITS CLINICAL IMPLICATIONS ON PSYCHIATRY
Lead Author: Stephanie Pope, M.D.

SUMMARY:
Background: In Psychiatry, the early literature suggests a social media is changing the baseline and acute states of patients. Other pieces of literature showcase how suicidal statements and "status updates" on MySpace and Facebook are an increasing used forum for interventions. There are no specific guidelines for Psychiatrists or Psychologist in how to navigate the changing climate of privacy with social media and the therapeutic relationship or how to include or exclude collateral from social media. It seems different clinicians are using their own judgment in such cases. The purpose of this study is find to objective data if, how and when Psychiatrists and Psychologists are using social media as they assess and treat their patients.
Method: This study surveyed Psychiatrists and Psychologists and their experience with and clinical implications of social media. This included their use of social media including which forms they use as well as their observations of social media in their practice. The survey was collected over a 4 week period and analyzed for categorical data as percentages of responses
Results: This study found, that within the responders, a majority state that social media has played a large part of their clinical assessments. These assessments included safety evaluations including suicide risk assessments, violence risk assessments and worsening mood, anxiety and psychotic symptoms. This study also found an association between the Psychiatrists and Psychologists familiarity with a social media form and their likelihood of reporting an impact of social media within their practice.
Discussion: Social media is a part of clinical experiences of Psychiatrists and Psychologists. Further investigation and considerations for the impact of social media on symptoms and safety assessments should be apart of future research and clinical guidelines. There is also a need for Psychiatrists and Psychologists to become familiar with social media as it is becoming a larger part of their clinical practice.

LOCUS OF CONTROL IN PRE-SURGICAL BARIATRIC SURGERY CANDIDATES IN APPALACHIA
Lead Author: Amos T. Turner IV
Co-Author(s): Chad Crigger, Marie Veitia, Ph.D., Suzanne Holroyd, M.D.

SUMMARY:
Introduction. Locus of control (LOC), the extent to which individuals believe they

have control over events, has been extended to health behavior. Individuals with an internal LOC may take more responsibility for their actions and may have more positive attitudes toward wellness behaviors. Limited data suggest that "internalizers" make better dietary choices and may exercise more regularly. Despite limited data regarding its predictive validity, insurers often require assessment of this concept prior to approving bariatric surgery. This study examines health LOC in a population of pre-surgical candidates for bariatric surgery over a 3-month period in an Appalachian community.
Methods. Medical records of 101 patients psychologically evaluated for bariatric surgery, at an academic psychiatry clinic from 02/16/14 - 09/22/14, were examined. All participants completed self-report, psychological assessment instruments including the Multidimensional Locus of Control (MHLOC). The pre-surgical interview was reconciled with a retrospective chart review. The present study focused on the MHLOC in which scores were obtained for Internal LOC, External LOC, and LOC Powerful Others. The MHLOC consists of 18 belief statements to which participants respond using a six-point likert scale from strongly disagree to strongly agree. Scores range from 6-36 with higher scores predicting a higher preference of that LOC. High scores on Internal LOC suggest that a patient believes one's health status is determined by one's actions. High scores on External LOC suggest that an individual perceives their health to be related to fate or chance. The Powerful Others scale measures the extent to which an individual attributes their health to medical professionals and other authority figures. Statistical analysis was conducted using the SPSS Version 22.0 software suite.
Results. One hundred one patients participated in the study. One patient could not complete testing due to cognitive deficits and was omitted from statistical analysis. Of the 100 patients available for analysis, the respective means (standard deviations) for Internal LOC, External LOC and Powerful Others LOC were 26.3(4.6), 14.4(4.5), and 18.8(5.3). LOC scores were compared with BMI as well as with history of psychiatric diagnosis.
Conclusion: This study suggests that pre-surgical bariatric patients are most likely to report having an internal LOC. This is surprising, considering that these patients are seeking bariatric surgery, in part due to poor health habits, arguing against previous research. However, the fact that they were now seeking bariatric surgery indicates they were acting to improve their health at the present time, consistent with a current internal locus of control. More research is needed regarding the utility of this construct as it relates to post-surgical outcome and post-surgical treatment planning.

PREVALENCE OF DEPRESSION AND ANXIETY AMONG EPILEPSY PATIENTS ATTENDING THE EPILEPSY CLINIC AT SKMC, UAE: CROSS SECTIONAL STUDY

Lead Author: Khadija Elhammasi, M.B.B.S.
Co-Author(s): Mufeed Raoof, M.D., Ph D, Taoufik Alsaadi, M.D., Mustafa Shakra, MRCP, Tarek Shahrour, MRCPSych, Lamya Turkawi, M.D., Buthaina Almaskari, M.B.B.S.

SUMMARY:

Background
Depression and anxiety are highly prevalent in patients with epilepsy, with prevalence rates range from 20% to 55%. Unfortunately, the rates, patterns, and risk factors are not well studied in our Middle East region, and, to our knowledge, not at all in UAE.

Objectives
To repot the rates of depression and anxiety among PWE and to correlate with various variables

Methods

Patients seen in the epilepsy clinics at SKMC were asked to complete the PHQ-9 and GAD-7 questionnaires. Using a standardized structured diagnostic instrument, all patients who have completed the questionnaires underwent a formal psychiatric assessment for the presence and absence of depression and anxiety. Age, gender, epilepsy classification, duration of epilepsy, number of seizures in the 6 months prior to the clinic visit, current AEDs and AD use, PHQ-9, and GAD-7 scores were recorded. In a multivariate model, we examined whether any of these variables were related to the degree of depression and anxiety

Results

A total of 186 patients have participated. The mean age was 33 years. A total of 50 of the 186 patients (26.9%) reported PHQ-9 scores >10, indicating a high likelihood of major depression. Increased risk of anxiety also witnessed with 25.8% of participants scored > 10 on the GAD-7 questioner. Eight patients (4.3%) had a score of >20 of PHQ-9; all of which, had GAD-7 >10. Furthermore, 17.7% had scores > 10 in both PHQ-9 and GAD-7. 34% of patients with scores consistent with major depression were on AD. Among all the studied variables, the main effect for seizure status (being seizure free vs having persistent seizures,) poor control of seizures, over 10 years history of seizures poly AED showed significant statistical relation to both depression and anxiety ($p<0.05$ for all). An Epiliptogenic MRI did not show any statistical significance. However, having an eplileptogenic MRI might be closely related to anxiety ($p=0.059$).

Conclusion

Depression and anxiety are prevalent disorders in patients attending the epilepsy clinics in our region. PHQ-9 and GAD-7 tools are conductive to routine screening in PWE

Abbreviations

AED- Anti epileptic drug, AD- antidepressant, PWE- patient with epilepsy, SKMC- Sheikh Khalifa Medical City

TREATMENT OVER OBJECTION: CHARACTERISTICS OF PATIENTS WHO REQUIRE COURT ORDER PRIOR TO ACCEPTING MEDICATION

Lead Author: David A. Nissan, M.D.
Co-Author(s): Julie B. Penzner, M.D.

SUMMARY:

INTRODUCTION: Treatment refusal on inpatient psychiatric units is common, and often leads to request by the physician for a court order for medication. A hearing in the Mental Hygiene Legal Court is one of the most stressful and most restrictive interventions that psychiatric inpatients undergo. As such, understanding factors influencing such hearings is essential to patient well-being. Among an apparently homogenous cohort of patients for whom court-ordered treatment is considered, there are two different outcomes: either cases are heard in the Mental Hygiene Legal Court, or cases are adjourned or withdrawn from court consideration. Given these divergent outcomes, we sought to understand factors that predict court hearing for treatment over objection.

METHODS: We reviewed the medical records of all patients for whom court papers were submitted for treatment over objection over a 5-year period (n=552), separating those whose cases were heard in court (n=306) from the group whose cases were adjourned or withdrawn prior to court hearing (n=246). The principal outcome measures were length of stay, court mandated outpatient treatment, treatment with long-acting-injectable antipsychotics or clozapine,

seclusion/restraint events, and transfer to a state hospital.

RESULTS: Compared with those whose cases were adjourned or withdrawn, patients whose cases were heard in court had fewer outpatient and family supports, were more likely to have been treated over objection in the past (17.0% vs 7.3%, p= 0.001), and more commonly diagnosed with psychosis (82.0% vs 68.3%, p<0.0001). Patient's whose cases were heard in court had longer lengths of stay (50.2 d vs 25.6 d, p<0.0001), were more likely to receive court ordered outpatient treatment following discharge (10.5% vs 2.85%, p=0.0005), to receive clozapine (12.8% vs 5.7%, p=0.005), and be transferred to state hospitals (14.1% vs 2.4%, p<0.0001).

CONCLUSION: Understanding the characteristics that differentiate these two groups has potential to tailor interventions. Specifically, if psychiatrists could identify patients whose cases are likely to require court hearing, court intervention could proceed more rapidly, ideally shortening inpatient length of stay and reducing percentage of hospitalized time in which a patient is untreated. Additionally, clarification of those factors likely to be protective against a court hearing has implications for sparing patients this intervention; for example, the presence of family is highlighted as a potential protective factor against court-ordered treatment. Given the impaired insight and judgment that often accompany severe mental illness, and given that treatment over objection is one of the most restrictive interventions available to psychiatrists, it is essential to characterize its use thoroughly so that we can apply it most sensibly.

ASSOCIATION ANALYSIS BETWEEN (AAT)N REPEATS IN THE CANNABINOID RECEPTOR 1(CNR1) GENE AND SCHIZOPHRENIA IN A KOREAN POPULATION

Lead Author: Min-jae Kim

Co-Author(s): Ji-won Kim, M.D., Yang-ho Roh, M.D., Byung-Lae Park, Ph.D., Joon Seol Bae, Ph.D., Hyoung Doo Shin, Ph.D., Ihn-Geun Choi, M.D., Yong-Gi Kim, M.D., Han-yong Jung, M.D., Ph.D.,, Jong-Myeong Kim, M.D., Hwa Young Lee, M.D., Ph.D., Sang-Woo Han, M.D., Ph.D., Jaeuk Hwang, M.D., Ph.D., Sung-Il Woo, M.D., Ph.D.

SUMMARY:

Objective

Previous studies suggest that the cannabinoid receptor 1 (CNR1) gene could be an important candidate gene for schizophrenia. According to linkage studies, this gene is located on chromosome 6q14-q15, which is known to harbor the schizophrenia susceptibility locus (locus 5, SCZ5, OMIM 803175). The pharmacological agent delta-9-tetrahydrocannabinol(Î”-9-THC) seems to elicit the symptoms of schizophrenia. The association between CNR1 polymorphisms and schizophrenia is actively being investigated, and some studies have linked the AAT-trinucleotide repeats in CNR1 to the onset of schizophrenia. In this study, we have investigated the association between the AAT-trinucleotide repeats in CNR1 and schizophrenia by studying schizophrenia patients and healthy individuals from Korea.

Methods

DNA was extracted from the blood samples of 394 control subjects and 337 patients diagnosed with schizophrenia (as per the DSM-IV criteria). After Polymerase chain reaction amplification, a logistic regression analysis, with age and gender as the covariates, was performed to study the variations in the AAT-repeat polymorphisms between the two groups.

Results

In total, 8 types of trinucleotide repeats were identified, each containing 7, 8, 10, 11, 12, 13, 14, and 15 repeats, respectively. (AAT)13 allele was most frequently observed, with a frequency of 33.6% and

31.6% in the patient and control groups, respectively. The frequency of the other repeat alleles in the patient group (in the decreasing order) was as follows: (AAT)13 33.6%, (AAT)14 21.6%, (AAT)12 18.5%, and (AAT)7 11.1%. The frequency of the repeat alleles in the control group (in the decreasing order) was as follows: (AAT)13 31.6%, (AAT)14 24.5%, (AAT)12 17.2%, and (AAT)7 11.6%. However, there were no significant differences in the AAT-repeat polymorphisms of the CNR1 gene between the patient group and the control group.

Conclusions
Although our study revealed no significant association of the AAT-repeat polymorphisms of the CNR1 gene with schizophrenia, it will serve as a good reference for future studies designed to examine the cannabinoid hypothesis of schizophrenia.

SEROTONERGIC-RELATED POLYMORPHISMS IN ADRA1A GENES AND MIRTAZAPINE TREATMENT RESPONSE IN KOREANS WITH MAJOR DEPRESSION

Lead Author: Ja Hyun Koo, M.D.
Co-Author(s): Min Soo Lee, M.D., Hun Soo Chang, Ph.D., Eunsoo Won, M.D.

SUMMARY:

Adrenergic neurotransmission plays an important role in mood disorder, especially in pathophysiology of depression. Indirect a1 adrenoreceptor-mediated enhancement of 5-HT neuron firing increases extracellular 5-HT. Thus, we investigated a candidate gene, adrenoreceptor alpha 1a (ADRA1A), which encodes alpha-1A-adrenergic receptor, as it is thought to be a key gene in the treatment of major depressive disorder. As mirtazapine acts both on alpha 1 and 2 adrenergic receptor, ADRA1A polymorphism can influence mirtazapine response in depression patients. This is the first study that focused on the relationship between ADRA1A gene polymorphism and mirtazapine treatment response on Korean depression patients. Total 316 patients who were diagnosed as major depressive disorder enrolled the study. Participants took 15-60mg of mirtazapine for 12 weeks, and we used 17-item Hamilton Depression Rating Scale(HAMD17) to measure the response. Patients were categorized as ADRA1A gene allele CC/CR/RR group and logistic regression was performed. We found that the proportion of ADRA1A R347C CC genotype was higher in the remission group, and that HAMD17 scores at week 12 were also significantly lower in patients with MDD with ADRA1A R347C CC than in other genotype groups. Especially, ADRA1A R347C CC group showed good response on mirtazapine treatment at sleep and appetite symptoms. The rate of HAMD17 score decline was also high in ADRA1A R347C CC group compared with CR and RR group. Therefore, ADRA1A R347C can be a useful marker to predict treatment response to mirtazapine in major depressive disorder patients. In conclusion, through genetic analysis of adrenergic neurotransmission system, it would be possible to expect the remission rate and treatment response to mirtazapine treatment.

MOBILE-BASED INTERVENTIONS CAN BE COST EFFECTIVE MENTAL HEALTH REFERRAL MEASURE IN RESOURCE POOR AFGHANISTAN

Lead Author: Khisraw Nawa, M.D.
Co-Author(s): Mohammad Ayan Ghairatmal, M.D., Najeeb Manalai, M.D., Ahmad shah Salehi, M.D., Hafiz A. Azizi, M.D., Partam Manalai, M.D.

SUMMARY:

After the intervention of the global community in Afghanistan, many aspect of life has improved for the population. There are more well-educated Afghans serving the community than ever before. However, mental health remains disproportionately ignored. For example, the budget for mental health in past fiscal year for the entire country of about 35 million people

living traumatized by close to four decades of chaos and wars was just over $50000. This shortage is multiplied by the fact that there are very few psychiatrists in Afghanistan. Thus creative and cost-effective measures are needed to address this disparity. In the current study, we analyzed data from https://www.mdoctor.af to evaluate the cost-effectiveness of mobile-device driven mental health counseling and referral system for the entire country. Methods: Raw data was obtained from https://www.mdoctor.af/. Data were categorized in different domains to streamline response to callers and appropriate consultation. Results: There were 6732 phone calls to the helpline in two months period after launch of the program. Questions regarding mental health ranked fourth among the inquiries (3.2%) after ENT (4.3%), orthopedics 11.7%, dermatology and STD (12.6%) and internal medicine (33.7%) domains. Surprisingly, more caller requested information on psychiatric health (3.2%) than reproductive health (3.1%). Discussion: This is the first study indicating that mobile-based intervention may be appropriate for Afghan population. With increasingly lower price of mobile phone, a larger number of Afghans have access to such devices. This accessibility provides a window of opportunity to deliver cost effective mental health counseling and referral system.

PREVALENCE OF METABOLIC SYNDROME IN ACUTE PSYCHIATRY INPATIENTS: COMPARISON BETWEEN DEVELOPED AND DEVELOPING COUNTRIES

Lead Author: Archana D. Patel, M.D.
Co-Author(s): Tariq Munshi, M.D, Queen's university
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SUMMARY:
Introduction:
Metabolic syndrome is a cluster of conditions that puts an individual at increased risk for cardiovascular disease, and is more prevalent in psychiatric patients than the general public. It is known that metabolic syndrome is a major public health concern in developed countries, however less is known about metabolic syndrome in developing countries. Thus the aim of this study is to compare the prevalence of metabolic syndrome in a population in Canada and Kenya.

Method:
Medical charts of 100 individuals (50 from Canada and 50 from Kenya) were examined and clinical and demographic data were extracted; including age, sex, psychiatric diagnosis based on DSM IV, medication, and history of smoking. Dementia was excluded. Investigations done included standardized lab work and physical exam including BP and waist circumferences. We used the IDF criteria for metabolic syndrome. The results of the study for both countries were compared.

Result:
The difference in the prevalence of metabolic syndrome between the two populations; Canada and Kenya is not statistically significant (48% vs 34% P=0.158). The Canadian population had significantly more individuals with central obesity and was, on average, older than Kenyans.

Conclusion:
The prevalence of metabolic syndrome is on the rise in developing countries; however there was no significant difference between our populations of patients with severe and persistent mental illness. The Canadian sample had more cases of metabolic syndrome; however none of the individual features except central obesity was significantly different between both the countries, which may be attributed to lifestyle differences. There is not much published literature on this particular topic;

therefore it is important that such projects are taken upon with collaboration.

ANIMAL HOARDING DISORDER, AN EMERGING HEALTH PROBLEM

Lead Author: Andrea Bulbena

SUMMARY:

Animal Hoarding disorder has gained attention from the community in recent years, as it is becoming a major public health concern. Although it remains a poorly understood human behavior, animal hoarder is defined as someone who has accumulated a large number of animals who fails to provide minimal standards of nutrition, sanitation and veterinary care. Despite good intentions, hoarders are frequently unaware to the extreme suffering of the animals. Cats and dogs are the most commonly hoarded species. In this report we described the case of 2 animal hoarders that took advantage of psychiatric intervention to gain insight about their illnesses. The collaboration among animal protection agencies, veterinarians, social work and mental health services should be implemented to allow earlier intervention to prevent escalation to more serious outcome

VARIATION IN HOSPITAL ADMISSIONS FROM THE EMERGENCY DEPARTMENT RELATED TO MENTAL HEALTH CONDITIONS

Lead Author: Jane E. Hamilton, M.P.H., Ph.D.

Co-Author(s): Charles E. Begley, Ph.D., Shin Jeong, M.P.H.

SUMMARY:

Introduction:

Research shows that patients with mental health conditions (MHC) use emergency departments (EDs) for acute psychiatric emergencies and when psychiatric or other primary-care options are inaccessible or unavailable. Prior research also indicates that patients presenting at the ED with a MHC are more likely to be hospitalized following an ED visit. While medical care in the ED represents only about 2% of the nation's $2.9 trillion in annual healthcare expenditures, the ED serves as a gateway to significant costs associated with hospital admission and subsequent inpatient care. The ED has become the primary source for hospitalizations in the United States, and admitting a patient to the hospital from the ED is one of the more expensive, routine decisions made in healthcare.

Methods:

In this retrospective study, we used a regional sample of 2013 ED visits (n = 878,921) to examine variation in hospital admission rates at 18 EDs in Harris County, Texas. Using logistic regression analysis, we examined the effect of MHCs on hospital admissions following an ED visit. We hypothesized that persons who were hospitalized following an ED visit were more likely to have a primary mental health diagnosis and that variation in hospitalization rates was related to differences in diagnostic profiles of patients served at different institutions.

Results:

Our preliminary statistical analyses indicate substantial variation in all-cause hospitalization rates among the 18 EDs in our study (ranging from 1.0 to 48.5%). Additionally, our study found that patients with a primary diagnosis of a MHC were 3.8 times more likely to be hospitalized following an ED visit compared to patients without a primary MHC diagnosis controlling for age, gender, race/ethnicity, and payer source (OR: 3.83; 95% CI: 3.66 - 4.03; $p < 0.000$).

Conclusions:

Quality mental health services require a system of care that includes EDs, hospitals, and outpatient services which are adequately resourced. Forecasting of hospitalization costs may benefit from tracking MHC prevalence among ED patients.

DOES TELEMEDICINE INCREASE ACCESS TO MENTAL HEALTH SERVICES IN RURAL AREAS: OPPORTUNITIES AND CHALLENGES

Lead Author: Yilmaz Yildirim

SUMMARY:

Method: This study involved a retrospective review of number of visits for three different models of mental health services provided at a rural outreach clinic between September 2009 and August 2014. A thirteen county project was established in September 2009 both by face to face and telemedicine patient care. A child and adolescent psychiatrist provided mental health services both for adults and child/adolescent population by face to face or by telemedicine from a university to a rural community mental health clinic. The data was analyzed using SPSS (Version 20). Descriptive statistics and ANOVA was used to compare mean visits for the three models of care.

Results: There were a total of 3263 patient sessions. Of these, 610 sessions were used for new patient evaluation (288 new child/adolescent and 322 new adult patients) and 2,653 sessions were used for follow ups. (1,482 child/adolescent follow ups and 1,171 adult patients follow ups). In this clinic, the patients were seen for a total of 368 work days. Of those 190 days were with telemedicine and 174 were with face to face services.

Psychiatric services were provided in three different phases between September 2009 and August 2014 as follows:

Phase I: Only face to face September 2009â€“ July 2010- Model I

Phase II: Both face to face and telemedicine- August 2010 â€“ March 2013- Model II

Phase III: Only telemedicine- April 2013- August 2014- Model III

The three Models of Care were compared for:

i. The total number of patients seen: There was a significant difference between Model I and II (p=.000) and Model I and III (p=.000) ; and there was no significant difference between Model II and III (p=.446)

ii. The number of new patients evaluated: There was no significant difference between Model I and II (p=.945), Model I and II (p=.108) and Model II and III (p=.058)

iii. The number of patients followed up: There was a significant difference between Model I and II (p=.000), Model I and III (p=.000); and there is no significant difference between Model II and III (p=.980)

Discussion: Since there were no prior mental health services at the rural outreach clinic, the first phase was expected to have lower number of total patients and follow ups. In the second and the third phase of the project there was no statistical significant difference for total, new evaluations and follow up patients.

Telemedicine in psychiatry can have the following challenges:

Quality and use of technology

Training support staff on the other site

Physician comfort level

Patient comfort level

Medical records

Prescription of control substances

Conclusion: The study findings show that telemedicine can be utilized effectively to provide mental services.

PIAYING WITH FIRE: BORDERLINE PERSONALITY PATIENTS AND BEGINNING THERAPISTS - CASE REPORT AND REVIEW OF LITERATURE

Lead Author: Sharvari P. Shivanekar, M.D.

SUMMARY:

Introduction: 10% of psychiatric outpatients fulfil DSM-IV criteria for borderline personality disorder. Psychotherapy is considered to be the treatment of choice for BPD patients. Most psychiatry residency training programs have didactic education about psychotherapy and personality disorders. Even so, resident therapists face significant challenges when starting outpatient psychotherapy.

Borderline patients, who test even seasoned therapists, pose a grim challenge to beginning therapists which can be detrimental to both patient and trainee.

Objectives: To assess whether resident therapists are prepared adequately to handle potential challenges in psychotherapy with borderline patients.

Case report: (Some details of this case have been altered to protect anonymity).We present the case of Ms. A, a 33 years old Caucasian female who was referred to the psychiatry clinic. Per records, she had a diagnosis of alcohol abuse and borderline personality disorder. She was assigned to a beginning resident therapist for weekly individual psychotherapy. In session 1 she had a contemptuous attitude with increasing anger and hostility towards the therapist. After session 3, she left several text messages on the therapist's phone stating "she needs to talk or she may do something." The therapist's return call was greeted by an insistence on knowing where the therapist lives. Several attempts made by the therapist to set boundaries were rejected by the patient as "heartless" and "mercenary". She maintained a scornful, devaluing attitude in sessions while increasing her demands on the therapist's time via text messages. After one such ambiguous threat, the therapist called 911 for her. The subsequent involuntary ER visit resulted in the patient calling the therapist in an uncontrolled rage and terminating therapy.
Effect on therapist: The resident reported being overwhelmed by the patient's hostility. Inspite of ongoing supervision, the resident had feelings of inadequacy and a fear of legal liability. The resident reported markedly decreased confidence in conducting therapy with Ms. A and with other patients. Even with excellent supervision, the therapist was left with feelings of disillusionment and self-doubt after the patient's abrupt termination of therapy.

Methods: A literature search was conducted on Cochrane, Ovid, Medline and PubMed using the key words BorderlinePersonalityDisorder/Beginningtherapist/psychiatry resident/trainee/novice/inexperienced.

Results: No relevant articles discussing the topic were found.

Discussion: This case elaborates the detrimental effects of novice therapists not being antecedently prepared for the difficulties in individual psychotherapy with borderline patients. The absence of literature about this subject demands that more importance be given to the concerns of trainees in this uniquely challenging setting. To the best of our knowledge, this is the first time that this topic is brought under discussion

FACTORS INFLUENCING ENGAGEMENT OF PEOPLE WITH SEVERE MENTAL ILLNESSES IN A REVERSE CO-LOCATED PRIMARY CARE CLINIC

Lead Author: Anand V. Iyer, M.D.
Co-Author(s): Melanie Thomas, M.D., Connie Chen, B.S., James Dilley, M.D., Steven Wozniak, M.D., Christina Mangurian, M.D.

SUMMARY:

Introduction/Hypothesis: Reverse co-locationâ€“ where primary care services are provided within a behavioral health setting â€“ appears to be a promising way to provide care to people with severe mental illness and co-morbid medical illness. Unfortunately, in community safety-net medical settings, patient non-attendance in such clinics remains a significant challenge. Previously identified factors related to non-attendance in general primary care settings include longer wait times to appointments, psychosocial stressors, and mental health conditions; non-attendance has also been associated with poor outcomes. However, there is sparse literature on which factors

play a role in patient attendance in reverse co-located clinic settings. The primary hypothesis of this study is that a shorter duration between referral and first appointment date will result in increased likelihood of attendance at the co-located primary care clinic appointment. The secondary hypothesis is that shorter duration is especially important in particularly vulnerable subpopulations, specifically people with psychotic disorders, substance use disorders, and/or homelessness.

Methods: This study is a retrospective analysis of psychiatric outpatients at a safety-net community mental health clinic who were newly referred to an on-site co-located primary care clinic from September 2013 to July 2014. Data will be collected from existing records, including patient-related (demographic, psychosocial, diagnostic) and referral-process related (timeline and reason for referral). Descriptive analyses will be conducted to examine characteristics of the study population. Binomial logistic regression will be used to examine the association between time to referral and clinic attendance, controlling for age, race, ethnicity, housing status, and psychiatric diagnosis. We plan to stratify the cohort into binary subpopulations (e.g. psychotic vs. not; substance use vs. not; homeless vs. not) to examine whether the association between time to referral and clinic attendance is especially important for these vulnerable groups.

Results: Preliminary results show approximately 250 patients were referred to the co-located primary care clinic during the study time period. Mean duration between referral date and first appointment was 24 days (range: 0-49 days). The study is currently underway, so further results are pending and will be available by the time of the poster presentation.

Discussion: Better understanding of factors impacting patient attendance in a reverse co-located primary care setting may allow for systematic and evidence-based changes to service delivery, such as optimizing speed to appointments or targeting services differently to vulnerable populations.

CAMH INTEGRATED CARE RESEARCH PROJECT

Lead Author: David J. Rodie, B.A., B.Sc., M.D.
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SUMMARY:

Depression, anxiety, and substance misuse are among the most common health problems among patients receiving general medical care. The majority of persons with depression, anxiety, or substance misuse are seen exclusively in primary care settings, and never see a mental health or addictions provider. Undetected, untreated or under-treated depression, anxiety, and at risk drinking create a significant public health burden. This four-year research study will evaluate an integrated care model of telephone-based, computer-aided care management using a new role of Mental Health Technician (MHT) and specialized software to support primary care providers in providing mental health care. The study will compare the effectiveness of this model vs. enhanced usual care in improving initiation of specific treatment by the primary care provider, reduction in severity of symptoms, and improvement in quality of life or functioning.

MORTALITY AND CO-MORBIDITY AMONG PUBLIC MENTAL HEALTH OUTPATIENTS WITH SEVERE MENTAL ILLNESS

Lead Author: Jose Vito, M.D.

Co-Author(s): Jose Vito, M.D., Nevine Ali, M.D., Elizabeth Anto M.D., Gabriel Tsuboyama M.D.

SUMMARY:
On average people with SMI (severe mental illness) die 20-35 years prematurely and have higher rates of mortality when compared to the general public. The increase in morbidity and mortality is caused by modifiable cardiac risk factors (poor diet, lack of exercise, tobacco use), higher rates of physical illness, increased substance use (illicit, over the counter or prescribed), medication side effects, psychosocial vulnerabilities (homelessness, poverty, unemployment, trauma and incarceration) and medical care that is less accessible and of poorer quality (lower screening standards). The Sixteen State Study on Mental Health Performance Measures 1997-2000: Federally funded study that examined patients with SMI served by the public health system. Eight states (AZ, MO, OK, RI, TX, UT, VT, VA) reported morbidity and mortality data from 1997-2000. All but VI (which only reported inpatient data) combined inpatient and outpatient data. In all 8 states, public mental health patients had a higher RR of death than the general population (1.2-4.9) and lost decades of potential life (YPLL = 13-30+). The average age at time of death was 49-60 with the exception of in Virginia where it was in the 70s. Heart disease (21%) , suicide (18%), accidents (14%), and cancer (7%) were the leading causes.

DEVELOPING A TEAM MODEL IN PSYCHIATRY: INCORPORATING AN EMPHASIS ON EXERCISE

Lead Author: Richard D. Wallis, M.S.N., N.P.
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SUMMARY:
Introduction:
There is no well-established model in outpatient psychiatry. While there are likely effective models being used in practice, the objective here is to identify the components of an effective outpatient psychiatry model. Obesity contributes to depression and is more prevalent in the mentally ill population. The Chronic Care Model (CCM) has been shown to be a useful framework for promoting weight loss in the severe mentally ill (SMI) population. The collaboration between nurse practitioners and physicians has been shown to be more effective than physician-only practice. With a declining proportion of physicians to patients, more effective ways of managing mental health must be a priority.

Hypothesis:
The CCM framework can be utilized to develop a team model for outpatient mental health that is more effective and efficient, with an emphasis on promoting overall physical and mental well-being through exercise.

Methods:
The CCM was used as a general framework for developing a team model where members have defined roles and tasks. A nurse practitioner and physician team model was used for psychiatric management. The roles of individual team members were evaluated and defined to distribute responsibilities equitably within the team. Weight loss management has been given a prominent role in the overall team model.

Results:
The team model roles defined include one psychiatrist, two psychiatric-mental health nurse practitioners (PMHNP), one registered nurse (RN), one certified medical assistant (CMA), one registered dietitian (RD), and one fitness coach.

Discussion:
The focus on exercise, as a central component of the outpatient mental health model, promotes both physical and mental health in a population with higher rates of

obesity and medical comorbidity. Utilizing both physicians and nurse practitioners reinforces communication and collaboration. Combining a focus on weight management, under the CCM, is presented here as a more effective and efficient outpatient mental health model.

Conclusions:
The team model, developed here under the CCM, has promise for being a standard for outpatient mental health, providing a holistic approach for treating the mentally ill.

THE IMPACT OF CHRONIC GENISTEIN TREATMENT ON BISPHENOL A RESPONSES OF ADULT MALE RATS ON WATER MAZE PERFORMANCE: IMPLICATIONS OF A HIGH-FAT DIET

Lead Author: Ying Fan, M.D., Ph.D.
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SUMMARY:
Objective: Bisphenol A (BPA), a controversial plasticizer, is perhaps the most widely studied environmental endocrine disrupting compound (EDC) on the market. Our previous study found that a low dose BPA induced spatial memory deficits, while the administration of BPA and a high-fat diet (HFD) had an additive effect on insulin resistance in male rats. Anecdotally, genistein (GEN), a primary soy phytoestrogen, has a protective effect against cognitive decline and metabolic disease. We therefore wanted to investigate whether HFD could influence BPA to have an effect on male rats' spatial memory performance and, if so, whether this could be mitigated by GEN. Methods: Sixty-day male rats were fed either a control diet (CD) or HFD and also received daily oral doses of either 0, 50 Î¼g/kg BPA and / or 0, 10 mg/kg GEN for 20 weeks. Their spatial memory functions were then assessed in the Morris Water Maze (MWM). Results: Among CD rats, BPA and BPA plus GEN produced comparably poor spatial memory acquisition and retrieval, and increased swimming speed, while GEN only induced hyperactivity. All HFD rats showed equivalent deficits in spatial memory function regardless of treatment. They also exhibited hyperactivity except in the case of GEN. Conclusions: Overall, BPA and HFD displayed similar potency to produce spatial memory deficits and hyperactivity in male rats. GEN alone had no effect on the response to BPA, but when co-supplemented with HFD, enhanced activity more than memory, possibly in a diet- and region-dependent manner. Whether this effect is mediated by estrogenic pathways or changes in pharmacokinetics of GEN needs further investigation.

EFFECT OF TREATMENT TIME AND CITALOPRAM ENANTIOMER LEVELS ON AGITATION AND QTC INTERVAL IN PATIENTS WITH ALZHEIMER DISEASE

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SUMMARY:
Objective: To evaluate the effect of citalopram enantiomers on neuropsychiatric scores and QTc interval in older patients with dementia who participated in the Citalopram for Agitation in Alzheimer's Disease Study (CitAD).

Method: All participants included in this analysis received citalopram or placebo for 9 weeks. Mathematical models were

developed to examine the contributions of treatment time, R-citalopram, and S-citalopram on changes in scores for the Neurobehavioral Rating Scale - Agitation Subscale (NBRS-A), the modified Alzheimer Disease Cooperative Study-Clinical Global Impression of Change (mADCS-CGIC), Neuropsychiatric Inventory Agitation Subscale (NPI-A), and Mini-Mental State Examination (MMSE) and changes in QTc interval. Nonlinear-mixed effects population pharmacokinetic models were used to capture individual exposure characteristics for R- and S-citalopram. These characteristics were then used to calculate the area under the plasma concentration time curve (AUC) for R- and S-citalopram. Time, R-AUC, and S-AUC effects on neuropsychiatric scores were evaluated individually and simultaneously using a nonlinear-mixed effects modeling approach (for continuous data as trajectories, and for categorical data using a logistic regression) as implemented in NONMEM 7.2 to determine the main contributing factors. Scores on the NBRS-A, mADCS-CGIC, NPI-A, and MMSE and QTc intervals were used to develop the models and evaluate the effects of treatment time, and R-, and S-AUCs.

Results: Time in study was the most important factor, contributing to improvement in scores on all of the scales over 9 weeks. R- AUC was identified as a main factor contributing to QTc prolongation (mean contribution (MC): 12.2 ms (range: 5.9 ms â€“ 34.5 ms), S-AUC contribution (SC): 0.23 (0.1-0.52)). R- AUC was also related to worsening MMSE scores (MC: 0.51 (0.19-1.09), SC: 0.066 (0.024-0.176)). S-citalopram was most closely related to improvement in NPI-A scores (MC: 1.1 (0.4-3.4), R-AUC contribution (RC): 0.002 (0.001-0.005)). In a logistic regression model, only R-citalopram was negatively associated with response based on the mADCS-CGIC scale: when the mean R-AUC was larger than 1700 Î¼g/L day, the probability of a patient response to treatment was worse than that observed in the placebo group (26%). However, both R- and S-AUCs contributed to improvement in NBRS-A scores (RC: 40%, SC: 60%)

Discussion: Our models suggest that R- and S-citalopram contribute differentially to changes in neuropsychiatric scores and QTc interval. R-citalopram worsens MMSE, QTc, and response based on the mADCS-CGIC. S-citalopram improves NPI-A scores. Both R- and S-citalopram improve NBRS-A score. These results suggest that there is competitive inhibition between the two enantiomers and that S-citalopram alone may be both more effective and safer than citalopram in patients with dementia and agitation. A followâ€“up clinical study with S-citalopram alone is recommended.

AGING EFFECT ON NEUROGENESIS AND BDNF EXPRESSION VIA AMPK ACTIVATION

Lead Author: Soo Ah Jang, M.D.
Co-Author(s): Hyunjeong Kim, M.S., Jihyeon Jeong, M.S., Minsun Park, Ph.D., Su Kyoung Lee, Jeong Seon Yoon, Ph.D., Eosu Kim, M.D., Ph.D.

SUMMARY:

Closed association between brain aging and neurometabolic disturbance has been revealed by several epidemiological, neuroimaging, and molecular studies. AMP-activated protein kinase (AMPK), a key regulator of cellular energy homeostasis, has been related to neurogenesis and Brain-derived neurotrophic factor (BDNF) expression. This neurogenic signal might be disrupted by aging process. Therefore, we aimed to examine effect of aging on neurogenesis and BDNF expression upon AMPK activation in young versus old mice.

Young (4 months) and old (18 months) ICR mice were received AICAR (5-Aminoimidazole-4-carboxamide ribonucleotide, AMPK activator) or normal saline (control) intraperitoneal injection for 7

days. Then mice hippocampal sections were examined to measure the number of BrdU (5-Bromo-2Â´-Deoxyuridine) positive cells and the levels of BDNF expression using immunohistochemistry.

The baseline (no treatment) levels of neurogenesis over the 7 days were significantly higher in young versus old mice ($p = 0.02$), though the degree of BDNF expression was comparable between these two groups. Upon AICAR treatment, significant increases in neurogenesis and BDNF expression were observed, yet only so in young mice; the number of BrdU positive cells per field ($p = 0.04$) and BDNF immunoreactivity ($p = 0.05$) were significantly higher in the hippocampal tissues of AICAR-treated versus control young mice. However, these treatment effects were not observed in old mice.

Our results showed that the responsiveness to a relevant neurogenic signal (AMPK activation) is reduced in aged brains, suggesting that aging may impair 'neurogenesis on demand' as well as neurogenesis in default state. This study was supported by a grant from the Korea Health Technology R&D Project, Ministry of Health & Welfare, Republic of Korea (A120723).

COGNITIVE FUNCTION OF THYROID PAPILLARY CARCINOMA PATIENTS BEFORE RADIOIODINE THERAPY

Lead Author: Hyunseuk Kim, M.D.
Co-Author(s): Hyunseuk kim, M.D., Jinsook Cheon, M.D., Minsu Kim, M.D., Byounghoon Oh, M.D.

SUMMARY:

Objectives : Thyroid cancers are rapidly increasing now. Thyroid hormones have been known to be intimately associated with mental disorders. The aims of this study were to know the prevalence of cognitive disorders in patients with thyroid cancer, and identify related variables to them.

Methods : Subjects were consisted of fourty-two patients with informed consent among seventy-three patients with thyroid cancer diagnosed by thyroid clinic in Endocrine Center of Kosin University Gospel Hospital, who were admitted for radioiodine ablative therapy at 6â˜¼12 months after total thyroidectomy. The data were obtained from structured interviews and assessments of depression (Hamilton Depression Rating scale-17, HDRS-17) and cognitive function (Korean Version of the Montreal Cognitive Assessment, MoCA-K) by two investigators who were blind to the subjects just three hours before radioiodine ablative therapy.

Results : 1) Among subjects, those with below 22 of total score of the MoCA-K were twenty-one (50.0%). The meanÂ±S.D. of the total MoCa-K score in all subjects was 22.02Â±5.12. The subgroup with above 23 of the MOCA-K score was 26.29Â±1.98, while those below 22 was 17.76Â±3.42. There was statistically significant difference between subgroups ($p<0.001$). Upon all the subtests of the MoCA-K except language and orientation, there were statistically significant difference between groups ($p<0.001$).
2) Upon age ($p<0.001$), education ($p<0.001$), Pre-radioiodine therapy thyroid stimulating hormone (TSH) ($p<0.005$), there were statistically significant difference between subgroup with above 23 of the total MoCA-K score and those below 22.
Otherwise, there were no significant difference upon variable such as sex, past history of psychiatric illnesses, metastasis to lymph node, comorbidity, size of cancer, duration of thyroid cancer and total score of the HDRS-17.
3) The total scores of the MoCA-K in subjects had significant correlation with age (Ï’=-0.629, $p<0.01$), education (Ï’=0.786, $p<0.01$), comorbidity (Ï’=0.786, $p<0.01$), Pre-radioiodine therapy TSH (Ï’=0.459, $p<0.01$), total score of the HDRS-17 (Ï’=-0.437, $p<0.01$).

Conclusions : Cognitive disorders were more prevalent among patients with thyroid cancer before radioiodine therapy. Therefore, further study should be needed to clarify the mechanism for the cognitive disorders in thyroid cancer. Furthermore, physicians should pay attention to the cognitive function and prepare preventative measures for cognitive disorder during management of thyroid cancer.

TOWARD SYSTEMATIC EXAMINATION OF RISPERIDONE ON QTC IN CHILDREN WITH AUTISM AND SERIOUS BEHAVIORAL PROBLEMS

Lead Author: Lan Chi L. Vo, M.D.
Co-Author(s): Courtney McCracken, Ph.D., Michael Kelleman, MSPH, Lawrence Scahill, MSN, Ph.D, and Research Units on Pediatric Psychopharmacology Autism Network

SUMMARY:

Background: The promise of the atypical antipsychotics was equal or better efficacy in the treatment of schizophrenia and lower risk of neuromotor adverse effects. Registration trials in the 1990s raised new questions about the potential for antipsychotic medications alone or in combination with other medications to prolong the QTc interval and induce life-threatening cardiac arrhythmias. Indeed, the promising antipsychotic medication, sertindol, was not approved due to this concern. Risperidone is among the best studied drugs in autism and is approved for the treatment of serious behavioral problems in children with autism. Few studies, however, have systematically examined the cardiac effects of risperidone in this pediatric population. Methods: We used data from an eight-week, multi-site trial conducted by the Research Units on Pediatric Psychopharmacology (RUPP) Autism Network comparing risperidone (n=49) to placebo (n=52). All subjects met diagnostic criteria for autism accompanied by serious behavioral problems such as tantrums, aggression and self-injury. Risperidone was superior to placebo in reducing the severity of the serious behavioral problems. Subjects had a standard 12-lead electrocardiogram (ECG) before and after treatment. The aim of the current analysis is to evaluate the effects of risperidone on cardiac conduction in children with autism. We examined the effect of risperidone on the QTc interval compared to placebo based on automated machine readings and readings by a single pediatric cardiologist. We also compared the agreement between the automated machine readings and the pediatric cardiologist. Results: Complete pre- and post-treatment ECG data were available on 67 subjects (placebo=34; risperidone =33). Neither automated machine readings nor the cardiologist readings indicated a clinically meaningful change in the mean QTc on the ECG across risperidone and placebo groups. Three subjects in the risperidone group were identified as exceeding 450 msec on the QTc at Week 8 according to the automated machine readings compared to four by the cardiologist. Collapsing ECG data over pre- and post-treatment recordings, the agreement between the machine readings and the cardiologist was poor (intraclass correlation = 0.24). On average, the machine readings tended to be higher on QTc than the cardiologist (420.3 + 17.3 msec compared to 406.1 + 30.9; $p < 0.001$). Visual examination of Bland-Altman plots suggests a systematic bias. Compared to the cardiologist, the machine readings were higher for smaller QTc values and lower for higher QTc values. Conclusions: The automated ECG reading may not be trustworthy for evaluating the effects of risperidone on QTc in children with autism. We are conducting additional analyses to explore the impact of risperidone on cardiac conduction in children with autism as well as the potential impact of automated and cardiologist disagreement.

CLINICAL DILEMMA IN DIAGNOSING A CASE OF FRIEDREICHâ€™S ATAXIA

Lead Author: Ameya U. Amritwar, M.B.B.S., M.D.
Co-Author(s): Prital Desai, M.D., M.P.H., PGY II, John W. Stiller, M.D.,

SUMMARY:
Background: Friedreich's Ataxia is the most common form of progressive spino-cerebellar ataxia with mixed sensory and cerebellar components and is inherited via an autosomal-recessive gene. Significant diagnostic challenges may be encountered due to variable course, history of chronic substance use particularly inhalants, head trauma and severe psychosis; all of which could present with similar clinical picture.

Case Report: We describe a patient who presented with confounding history of poly-substance abuse (inhalants, cannabis, PCP, cocaine, tobacco), multiple head injuries, IDDM, HTN and Schizoaffective disorder, who received prolonged inpatient treatment for psychosis, eventually diagnosed with Friedreich's ataxia. Ms. R is a 48 yr. old African American female, who presented for mental health evaluation and treatment following chronic refusal of food and treatment of insulin dependent diabetes due to delusions with paranoid and religious content like God taking care of her body and food being poisoned. The patient was medically compromised with severe hyperglycemia and cachexia. Her neurological examination was significant for quadriparesis, dysarthria and features of motor sensory polyneuropathy without incontinence. At the time of presentation, the patient required wheel chair for ambulation. The patient was variously diagnosed in the past as suffering from quadriplegia secondary to spinal cord injury, substance induced polyneuropathy, sensory-motor polyneuropathy and cerebellar ataxia but was never formally diagnosed. The patient never received targeted treatment for possible spino-cerebellar ataxia. The patient's psychiatric symptoms responded partially to Fluphenazine. After correct diagnosis the patient was also offered rehabilitative treatment and was considered for medication treatment like Deferiprome and Idebenone.

Conclusion: Treating physician's perception of diagnostic possibilities for the patient are often biased by previous diagnoses, especially if the patient has already received a mental disorder diagnosis. It is imperative that a good history is taken and all possible underlying medical or surgical causes are considered prior to concluding that the presenting symptoms are due to psychiatric or substance use disorder. In case of patients presenting with progressive neurological deficit which is previously diagnosed to be a result of chronic substance use, underlying negative symptoms and/ or trauma, treating psychiatrist must rule out possible primary neurological disorders like spino-cerebellar ataxia, as a correct diagnosis can have a huge impact on management of the patient.

CASE REPORT OF DELAYED POSTANOXIC LEUKOENCEPHALOPATHY PRESENTING WITH BEHAVIORAL SYMPTOMS

Lead Author: Daniel J. Lache, M.D.
Co-Author(s): Andrew Migliaccio, M.D., Pratap Yagnik, M.D., Vasant Dhopesh, M.D.

SUMMARY:
Background: In medical hospitals and emergency departments, psychiatrists are often consulted to help manage behavioral problems. However, even in the case of patients with documented mental illness, the physician must rule out underlying medical causes. This is particularly challenging in the case of anoxic brain injury, where signs and symptoms may be significantly delayed from the time of the original event. In addition, the clinical presentation may mimic primary psychiatric illness. We present a case of delayed

postanoxic leukoencephalopathy to illustrate this point.

Case: A 41 year old man with a history of PTSD, cocaine, and opioid use disorders presented to the Emergency Room of the Philadelphia VA Medical Center with agitation. Three weeks prior, the patient was brought by ambulance to an outside hospital after family members found him unresponsive at home. He was hypotensive and required intubation due to respiratory compromise. He was started on antibiotics for suspected aspiration pneumonia, improved dramatically, and was extubated and discharged home after eight days. At first, the patient did well at home and was able to perform all activities of daily living. However, his family members noted gradually worsening agitation and aggression. While at home, he cursed frequently, punched a hole in a wall, and broke a dresser. Due to concern over this new behavioral disturbance, family members brought the patient into the Philadelphia VA Medical Center Emergency Department. In the emergency room, the patient denied headache, visual disturbances, weakness, or numbness. His vital signs were stable. Physical and neurologic examinations revealed no focal abnormalities. Initial workup, including CBC, BMP, B12, folate, RPR, HIV, TSH, and head CT did not reveal any abnormalities. MRI was significant for nonspecific subcortical white matter intensities. EEG revealed diffuse background slowing. LP was significant for elevated protein of 100 but a normal cell count, normal glucose, and negative gram stain. During the first week of admission, the patient developed worsening rigidity and decreased verbal responsiveness. He became bed-bound and needed assistance with bathing, changing, and eating. He was able to intermittently follow commands. The diagnosis remained uncertain until 2 weeks after admission, when a repeat MRI showed worsening T2 hyperintensities and restricted diffusion in the white matter of both cerebral hemispheres, consistent with cerebral anoxic injury. He was subsequently placed in a nursing home and will be monitored for improvement.

Conclusion: This case illustrates several important clinical points for psychiatrists. In patients with a psychiatric history, new onset behavioral disturbances are not necessarily exacerbations of pre-existing mental health issues. In the case of anoxic brain injury, the presentation may be largely behavioral and mimic other primary psychiatric problems.

DIFFERENCES BETWEEN TWO TYPES OF DELUSIONAL MISIDENTIFICATION SYNDROME: CAPGRAS SYNDROME AND DELUSIONAL MISIDENTIFICATION FOR THE MIRROR IMAGE

Lead Author: Takashi Matsuki, M.D.
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SUMMARY:

Introduction: Delusional misidentification syndromes (DMS) include several related syndromes: delusional misidentification of persons (Capgras and Fregoli syndromes), delusion of inanimate doubles (DID), and DMS for the mirror image. DMS has been reported in both psychiatric and neurological disorders and there is evidence that DMS is more common in females, but differences between various subtypes of DMS have not been well studied. We reviewed two different forms of DMS and compared them with regard to etiology and gender.

Methods: We performed a comprehensive literature search using PubMed. For Capgras syndrome, we investigated studies published from 1995 through 2014 with the keyword "Capgras." For mirror misidentification, we searched for any studies published through 2014 using the term "mirror" combined with "misidentification" or "delusion." We collected additional cases from relevant journals and reference lists of articles

extracted from the database searches. Gender and etiology for each case was recorded. We used a chi-square test to examine differences between Capgras syndrome and DMS for the mirror image.
Results: We identified 18 cases of DMS for the mirror image (M:F 5:13), and 191 cases of Capgras syndrome (M:F 88:107). All cases of DMS for the mirror image had neurological etiology: all had either dementia or diffuse cerebral dysfunction. Four cases also had evidence of more specific right hemisphere abnormalities. Among Capgras cases, 92 had medical/neurological etiologies (M:F 49:43). The most common was Alzheimer and unspecified dementia n=34 (M:F 16:18). Ninety-nine cases had psychiatric etiologies (M:F 38:61). Most common was schizophrenia n=63 (M:F 24:39). Cases of DMS for the mirror image were much more likely to be the result of neurological etiology than Capgras cases (100% vs. 48%, $p< 0.0001$). For gender, we compared the 18 cases of DMS for the mirror image (all neurological) with the 92 medical/neurological cases of Capgras syndrome. Among these cases, DMS for the mirror image was significantly more likely to be female than Capgras syndrome ($p=0.0479$). We also found that Capgras syndrome in neurological cases was statistically more likely to be male than in the psychiatric cases ($P=0.0391$).
Conclusion: While Capgras syndrome has a mixed etiology, all cases of DMS for the mirror image had neurological causes and no cases had schizophrenia. This suggests that delusional misidentification of one's reflection in the mirror requires cognitive or perceptual impairment. In mirror cases, compared to Capgras cases, there was a significant predominance of females. This may suggest a particular psychological significance of the mirror image in females. Among Capgras cases, patients with neurological/medical etiologies were statistically more likely to be male than psychiatric patients. This could suggest that brain injury and psychiatric illness have differential effects on how males and females experience familiarity.

PERSONALITY TRAITS, ANXIETY AND DEPRESSION IN PATIENTS WITH WILSON'S DISEASE AND OTHER LIVER DISEASES: PRELIMINARY RESULTS FROM A COMPARATIVE STUDY

Lead Author: Jessica Thoma, M.D.
Co-Author(s): Shanthini Ratnakumarasuriyar, B. Sc., Nemer Al-Mosyab, M.D., Jordan Feld, M.D., Christopher Meaney, M.Sc., Angela Cheung, M.D., Hemant Shah, M.D., Sanjeev Sockalingam, M.D.

SUMMARY:
Introduction: Wilson's Disease (WD) is a rare genetic disorder of liver copper metabolism with a worldwide prevalence of about 1 in 30 000. In those with WD, impaired copper excretion leads to copper accumulating in the liver, cornea and brain, producing one or a combination of hepatic, neurologic and psychiatric symptoms. While florid psychiatric manifestations of WD are well-known, the more subtle psychiatric expressions of the disease remain poorly described. Researchers often refer to "personality change," rather than a syndromic disorder, as an early psychiatric manifestation. We present preliminary results from a study aiming to characterize the personality differences between patients with WD vs. non-WD liver disease, and to also determine if patients with WD have higher levels of anxious and depressive symptoms compared to non-WD liver disease patients. Our secondary objective is to determine if personality traits are associated with increased depressive and anxious symptoms in WD patients.

Method: Patients followed at the Toronto Western Hospital Liver Clinic who met the following criteria were invited to participate: a confirmed diagnosis of WD, autoimmune hepatitis, primary biliary cholangitis, or non-alcoholic steatohepatitis; 18 years or older; able to speak, read and write English; and

able to provide informed consent. Participants completed three self-report questionnaires: the PHQ9, GAD7 and NEO-FFI. A preliminary cross-sectional comparison of personality and psychological distress measures for WD patients and non-WD liver disease patients was performed. The Mann-Whitney U test was used to compare continuous variables between the two groups due to non-normal distribution. Bivariate correlations were conducted between the NEO-FFI domains and the PHQ9 and GAD7. Statistical significance was set at 0.05.

Results: Questionnaire data were collected from 6 WD patients and 30 non-WD liver disease controls. 3/6 WD patients and 14/31 non-WD liver disease patients were male. Mean scores on the GAD7 for WD patients and liver disease controls were 2.33, SD=5.24 and 4.63, SD=5.62, respectively (p=0.136). Mean scores on the PHQ9 were 2.67, SD=3.39 and 7.30, SD=5.99, respectively, approaching statistical significance (p=0.052). No statistically significant differences were detected between the WD and control group across the five main personality traits measured by the NEO-FFI. In WD patients, only neuroticism scores were significantly associated with higher PHQ9 scores (r2=0.847, p=0.033).

Conclusions: Our preliminary results show a significant difference in depressive symptoms between WD and non-WD liver disease patients. Although our preliminary results did not show significant differences in personality traits between the two groups, we will continue to recruit participants in order to increase statistical power. Our early findings suggest that neuroticism is associated with increased depressive symptoms in WD patients.

OPTIMIZING REPETITIVE BRAIN STIMULATION USING DIRECT ELECTRICAL RECORDINGS IN HUMAN NEOCORTEX

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SUMMARY:
Background: Brain stimulation is increasing used to treat psychiatric diseases. However, the generators underlying sustained network changes are not well-understood. We sought to elucidate these effects by applying electrical stimulation in epilepsy patients undergoing surgical monitoring, where direct subdural measurements of neuronal activity are possible.

Methods: Three patients undergoing surgical evaluation were enrolled. After implantation of electrodes, electrical responses were recorded in three conditions, with order counterbalanced across patients: 10Hz (4s train, 26s rest, 10min total); 1Hz (13 min train); sham stimulation. All conditions included 800 pulses. Current was 100% of motor twitch threshold.

Results: Stimulation pulses within the 10Hz train induced a consistent negative voltage deflection, found exclusively within 2cm of the stimulation site. The strength of negativity depended on 1) the pre-stimulation oscillatory phase as well as 2) the pulse number in the train. These responses summated to induce a 100% voltage change. Interestingly, this effect plateaued after 20 pulses were applied. These changes were sustained for the duration of the train but returned to baseline within 5s following the last pulse. These effects were not observed for 1Hz or sham stimulation.

Conclusions: Repetitive stimulation elicited changes that were predictable, short-acting, within 2cm of the stimulation site, and selective for the 10 Hz pulse rate. These results suggest the timing of pulses during repetitive stimulation can be

modified to induce stronger and longer-lasting changes in brain networks. Future work will include analysis of behavioral and functional connectivity changes following standard and optimized stimulation paradigms.

NEURONAL ACTIVITY AND SECRETED AMYLOID Î' LEAD TO ALTERED AMYLOID Î' PRECURSOR PROTEIN AND PRESENILIN 1 INTERACTIONS

Lead Author: Xuejing Li, M.D., Ph.D.
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SUMMARY:
Deposition of amyloid Î² (AÎ²) containing plaques in the brain is one of the neuropathological hallmarks of Alzheimer's disease (AD). It has been suggested that modulation of neuronal activity may alter AÎ² production in the brain. We postulate that these changes in AÎ² production are due to changes in the rate-limiting step of AÎ² generation, APP cleavage by Î³-secretase. By combining biochemical approaches with Fluorescence Lifetime Imaging Microscopy, we found that neuronal inhibition decreases endogenous APP and PS1 interactions, which correlates with reduced AÎ² production. By contrast, neuronal activation had a two-phase effect: it initially enhanced APP-PS1 interaction leading to increased AÎ² production, which followed by a decrease in the APP and PS1 proximity/interaction. Accordingly, treatment of neurons with naturally secreted AÎ² isolated from AD brain or with synthetic AÎ² resulted in reduced APP and PS1 proximity. Moreover, applying low concentration of AÎ²42 to cultured neurons inhibited de novo AÎ² synthesis. These data provide evidence that neuronal activity regulates endogenous APP-PS1 interactions, and suggest a model of a product-enzyme negative feedback. Thus, under normal physiological conditions AÎ² may impact its own production by modifying Î³-secretase cleavage of APP. Disruption of this negative modulation may cause AÎ² overproduction leading to neurotoxicity.

PILOT EXAMINATION OF MRNA ISOFORM EXPRESSION DISTURBANCES IN SCHIZOPHRENIA AND ALCOHOLISM USING NEXT GENERATION MRNA SEQUENCING

Lead Author: Christie Mensch, M.D.
Co-Author(s): Larry Carver, M.D., Merlin G. Butler, M.D., Ph.D., Ann M. Manzardo, Ph.D.

SUMMARY:
Objectives: Glutamate is an excitatory neurotransmitter that acts in concert with inhibitory Gamma Aminobutyric Acid (GABA) to modulate neurological activity in cognitive and emotional processes. Elevated brain glutamate levels are associated with neurotoxicity and neurodegeneration in several disease states including schizophrenia. Abnormalities in GABA and glutamate signaling are also implicated in pathology of alcoholism and exposure to alcohol has been associated with expression differences in GABA/glutamate pathways at the gene and protein level. We carried out a pilot examination to characterize mRNA isoform expression in GABA and glutamate pathways in human brain samples from schizophrenia and alcoholism. Methods: Illumina HiSeq 2500 next-generation (massively parallel) sequencing and bioinformatics were performed to identify differential global mRNA expression in the medial frontal cortex of three well-characterized men (mean age = 45 yr) meeting criteria defined by the Diagnostic and Statistical Manual of Mental Disorders, version 4 (DSM-IV) for an alcohol use disorder, and two matched control men procured from the New South Wales Tissue Resource Centre (Sydney, Australia) and

one adult male (55 yr) with schizophrenia. Samples were collected according to standardized protocols with institutional oversight. The resulting data were screened for disturbances in molecular components of the GABA or glutamate neurotransmitter pathways. Results: Of 1703 mRNA expression disturbances identified in our schizophrenic male, 10 isoforms involved GABA or glutamate pathways including 6 known protein coding transcripts. Isoforms of two important enzymes in glutamate metabolism: glutamate-ammonia ligase (GLUL,-8.4 fold) a precursor pathway to the Krebs Cycle implicated in Reye syndrome and glutamate-cysteine ligase (GCLC, -2.6 fold) required for the synthesis of the antioxidant glutathione were downregulated as well as several post-synaptic receptors (e.g., GABRG1, -2.3 fold; GRIK3, -2.1 fold). Of 1028 mRNA isoform expression disturbances identified in alcoholism, 7 isoforms involved GABA or glutamate pathways including four known protein coding transcripts. Glutamic-oxaloacetic transaminase (GOT1) involved in glutamate biosynthesis was downregulated (-1.8 fold) in addition to GRIK3 (-2.1 fold) and GABRQ (-1.4 fold). Conclusions: Our pilot examination of mRNA isoform expression using next generation sequencing in schizophrenia and alcoholism male brain samples support previous reports of glutamate signaling disturbances in these disease states. We also identified a novel disturbance in glutamate metabolizing enzyme expression in schizophrenia potentially impacting cellular energy production and response to oxidative stress. Follow-up confirmatory studies should use a larger number of subjects and consider a possible role for abnormalities in glutamate metabolism in the pathology and risk for schizophrenia and alcoholism.

FUNCTIONAL MAPPING OF DYNAMIC HAPPY AND FEARFUL FACIAL EXPRESSIONS IN YOUNG ADULTS WITH FAMILIAR RISK FOR PSYCHOSIS

Lead Author: Johannes Pulkkinen

SUMMARY:

INTRODUCTION

Social interaction requires mirroring to other people's mental state (1). Psychotic disorders have been connected to social interaction and emotion recognition impairment. We compared the brain responses between young adults with familial risk for psychosis (FR) and controls during visual exposure to emotional facial expression.

METHODS

51 FR and 51 control subjects were drawn from the Northern Finland 1986 Birth Cohort (Oulu Brain and Mind Study). None of the included participants had developed psychosis. The FR group was defined as having a parent with psychotic disorder according to the Finnish Hospital Discharge Register.

Participants underwent fMRI imaging using visual presentation of dynamic happy and fearful facial expressions. FMRI data were processed to produce maps of blood oxygen level dependent (BOLD) responses for happy and fearful facial expression, which were then compared between groups.

RESULTS

FR subjects had increased BOLD response in premotor cortex and decreased negative BOLD response in prefrontal cortex (PFC) structures during happy facial expression. There were no between-group deviations during fearful facial expression.

CONCLUSIONS

Increased BOLD responses by positive valence in FR group were in brain regions crucial to emotion recognition and social interaction (2). Our study had two main results. Increased BOLD response in

premotor cortex may serve as a compensatory mechanism as FR subjects may have to exert more effort in face recognition, as has been found earlier in schizophrenia (3). Secondly we discovered that FR subjects had decreased negative BOLD response in PFC structures which may imply error in Default mode network which is a resting state network that has an important role in social interaction (4). To our knowledge the latter finding has not been discovered in previous FR studies with facial stimuli.

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EFFECTS OF SEX, AGE AND NUMBER OF TREATMENTS ON THE SEIZURE DURATION IN BILATERAL ECT: A NATURALISTIC STUDY

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SUMMARY:

Background: The efficacy and adverse effects of electroconvulsive therapy (ECT) depends on the amount by which the electrical dose exceeds individual patients' seizure threshold. Titration method is arguably the commonest method of assessing seizure threshold. Formula-based methods use age as the most important predictor of seizure threshold. The effect of anticonvulsants (AC) in determining the seizure threshold has been sparsely studied

Method: ECT records of 521 patients who received bilateral ECT (BLECT) in one calendar year in NIMHANS were studied. Their demographic, clinical and ECT details were recorded. At NIMHANS, during the first ECT session, seizure threshold is determined by titration method, starting with 30 milli-Coulombs (mC) and increasing in steps of 60mC till generalized seizure is induced. We compared the percentage of patients above and below 40 years of age with different seizure thresholds.

Results: Among those <40 years of age, 330 of 427 (77%) had seizure threshold >120mC; nearly all (90 of 94; 96%) of those over 40 years of age had the threshold >120mC (OR=9; 95% CI=2.127 â€“ 38.1). The figures were similar irrespective whether they were on AC or BZPs or both.

Conclusions: While using titration method of determining seizure threshold with BLECT for those above 40 years of age, one may start at 120mC. This would avoid repeated stimulations at lower doses and chances of failure to elicit seizures during the first session of BLECT. The risk of using higher stimulus dose is about 4% with this approach.

ELECTROCONVULSIVE THERAPY FOR MAJOR DEPRESSIVE DISORDER IN A PATIENT WITH A PERMANENT SKULL DEFECT: A CASE REPORT

Lead Author: Jihyun Roh, M.D.

SUMMARY:
Electroconvulsive therapy (ECT) is an effective and safe treatment method for a variety of psychiatric disorders, including major depressive disorder (MDD). Although there is no absolute contraindication of to ECT, clinicians often hesitate to apply this method to patients with a skull defect. We report a case of ECT performed on an MDD patient with an open wound after craniectomy. We summarize successful ECT cases of patients with a permanent skull defect and discuss various factors that may influence ECT outcomes in patients with a skull defect, including; electrode placement, benzodiazepines, and anticonvulsants.

ADDRESSING RESTRAINT AND SECLUSION IN AN ACUTE INPATIENT PSYCHIATRIC FACILITY

Lead Author: Vijeta Kushwaha, M.B.B.S., M.D.
Co-Author(s): Ahmad Hameed, M.D, DFAPA.

SUMMARY:
Background: Patients requiring inpatient mental health treatment are at a higher risk of aggressive behavior which could be directed at self or others. One of the challenges of inpatient mental health treatment is to provide treatment in a safe environment for all patients. Historically seclusion and restraint have long being used in psychiatric care, but its perception is changing and it is no longer viewed as a therapeutic modality but as a treatment failure. In 2008 JCAHO developed a set of 7 core performance measures for hospital-based inpatient psychiatric services. 2 of which are seclusion and restraint. Seclusion and restraint are a measure of quality of care which allows for comparability of different psychiatric facilities and is linked with reimbursement.

Study design: Retrospective analysis of the incident reports of past 6 months was performed and an intervention module was formulated based on literature review that could be appropriately used in our acute inpatient psychiatric setting on adult and child and adolescent floors. Literature review suggested that reason for seclusion and restraint in inpatient psychiatric setting are multifactorial. In our study, intervention was directed at staff including education, encouraging staff to use non-violent crisis intervention and emergency response teams and debriefing of patients after an incident. Post intervention follow up data during next 7 months was compared with pre-intervention data of comparable time frame.

Results: The incidents of restraint decreased from 3% to 1.3% on adult units and 18.5% to 5% on child unit. The incidents of seclusion decreased from 1.3% to 0.54% on adult units and 9.4% to 3.4% on child unit. However there was overall increase in incidents of self-harm, assault and property destruction.

Discussion: Strategies to address seclusion and restraint should take into account various factors and should be balanced with strategies for addressing the aggression, agitation and self-harm.

LINKAGE FROM CRISIS CLINIC TO LONG-TERM OUTPATIENT MENTAL HEALTH CARE: WHAT FACTORS INFLUENCE SUCCESS?

Lead Author: Melissa A. Goelitz, M.D.
Co-Author(s): Melanie Thomas, M.D., Connie Chen, James Dilley, M.D., Richard Oliva, M.D., Christina Mangurian, M.D.

SUMMARY:
Background:
A major problem in many public mental health systems is over-utilization of emergency psychiatric services among people lacking a consistent outpatient provider. Many factors, such as low perceived need for care, involuntarily mandated treatment, psychosocial stressors, and increased length of time to

establish steady outpatient care are thought to prevent these people from successfully linking to outpatient care after receipt of emergency services. A clearer understanding of the most salient factors within a specific urban, crisis clinic population might lead to more targeted interventions and help patients to successfully link to and engage in outpatient mental health services.
Objectives:
Our main objective is to determine whether any demographic or systemic variables are associated with successful linkage to outpatient care. Specifically, a main hypothesis is that shorter length of time to the outpatient appointment is associated with successful linkage to outpatient care.
Methods:
Design: Retrospective cohort study
Subjects: Psychiatric patients with intake at an urgent care outpatient mental health clinic in an urban setting between January 1, 2014 and March 31, 2014.
Procedures: Billing reports will be used to identify all patients seen for intake at the crisis clinic within a three-month period. Retrospective chart review will be used to gather our primary outcome variable, first appointment at an outpatient clinic with a prescriber in the six months following the crisis intake assessment. For each patient in our cohort, we will gather demographic data as well as other independent variables including diagnosis, legal situation, employment status, relationship status, provider who referred them to crisis clinic, and outpatient clinic to which they were linked.
Data analysis: STATA software will be used for data analysis. Descriptive analyses using chi-square and t-tests will be conducted to examine differences between those who connect to outpatient care and those who do not. Logistic regression models will be used to examine associations between predictor variables and the primary outcome measure of subsequent engagement with outpatient clinic.
Results:
The study is underway at this time and data is currently being gathered (N= 292). Preliminary results indicate wait times at referral clinics vary and may correlate with poor linkage.
Conclusions:
The goal of the study is to characterize whether particular demographic or systemic factors help patients successfully connect with outpatient clinics following receipt of crisis mental health services. Information obtained from this study will be used for future QI projects aimed at improving engagement with long-term outpatient mental health treatment within our local setting. This study has implications for other systems of care that have challenges connecting people utilizing urgent care mental health services to long-term outpatient care within the safety net.

IMPLICATION OF PHQ1 & PHQ9 SCREENING FOR DEPRESSION AND SUICIDALITY IN MEDICALLY & SURGICALLY ILL PATIENTS TREATED IN A COMMUNITY TEACHING HOSPITAL

Lead Author: Dheeraj Kaplish, M.D.
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SUMMARY:

Depression and suicidality often go unrecognized, undiagnosed and untreated in hospital practice. The JCAHO has published sentinel alerts regarding suicide risk for patients in emergency & medical/surgical hospital settings. Depression also makes the outcome of treatment for CAD, Diabetes, CHF and other medical conditions worse. It is incumbent upon health care providers to develop effective real-world screening processes for depression and suicidality in both primary care and Inpatient settings. This retrospective study will report on the findings of a real-world quality improvement project in community teaching hospital to screen patients for depression and

suicidality using a PHQ1 & PHQ9 process who are admitted for medical and surgical conditions.
METHODS:
This study was approved by the IRB. It was initially implemented as a Quality improvement project but later formalized in 2007. 1470 of 19917 individuals admitted to the Medical, Surgical, Observation, OBGYN floors between 11/2007 and 12/2009 had answered "yes" to "During the past month have you been bothered by feeling down, depressed or hopeless?" question. Social workers performed PHQ9 assessment for the "yes" responders. All available 491 PHQ9 forms were analyzed in an excel spreadsheet. For the purpose of this study a score <10 on PHQ9 constituted mild depression, 10-14 were moderately depressed, 15-19 were moderate to severely depressed & 20-27 were considered severely depressed.
STATISTICS:
Subjects were grouped in 3 populations: age<40, age40-69 & age>69. Admissions to Medical, Surgical (includes OBGYN) and Observation services were compared. Analysis consisted of descriptive statistics, analysis of variance and Chi Square using Minitab16.
RESULTS:
We found 42.36% of individuals had at least a moderate degree of depression and 30.14% of subjects had some level of suicidality. Medicine service admissions had higher average PHQ9 scores in the age group 69(P=0.00019), and in the age group of 40-69 compared with age>69(P=0.00003). In Surgical admissions, average PHQ9 scores were again higher in the age group 69(P=0.0425). No statistical significance was found on Observation service comparison.
CONCLUSION:
Our Pilot study finds evidence of clinical depression during Medical and Surgical admissions. The PHQ1 screening method is a simple & effective tool currently established at Berkshire Medical Center. Younger patients are found to have higher PHQ9 scores on average when compared to the older population especially in medical admissions. This finding is consistent with surgical admissions, particularly when age<69. Observation service admissions do not show this difference. This may be due to short duration of admission and less severe comorbidity.

ESTABLISHING THE ROLES OF THE KYNURENINE PATHWAY IN INFLAMMATION-INDUCED EMOTIONAL AND COGNITIVE DYSFUNCTION

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SUMMARY:
Background
A high comorbidity of MDD (major depressive disorder) and autoimmune disorders (e.g. multiple sclerosis) supports the growing evidence that immune-inflammatory processes might play an important role in the aetio-pathophysiology of mood disorders. Several candidate pathways are proposed to mediate these effects, including direct effects of elevated pro-inflammatory cytokines (e.g. tumor necrosis factor (TNF)) and alterations in tryptophan-metabolism. In autoimmune disorders, the CD40-CD40L pathway is essential for the response to self-antigens and, when activated, leads to the synthesis of chemokines and cytokines.

Methods
We stimulated the CD40-CD40L pathway by intra peritoneally injecting a monoclonal CD40 antibody (CD40 Ab) in a C57BL/6J mouse model (10 mg/kg). We first examined the mice for changes in mood disorder relevant behavioural phenotypes:

Saccharin consumption as a test for anhedonia was assessed in the home-cage, general activity and operant behavior in the Intellicage (a system for automated continuous monitoring of the behavior of individual mice) and fear conditioning to a tone and to context. We then measured TNF (with flow cytometry) and metabolites of the tryptophan pathway (using liquid chromatography - tandem mass spectrometry) in plasma and various regions of the brain.

Results
CD40 Ab administration led to a significant reduction in saccharin consumption and a reduction in motivational behavior in the IntelliCage for 7 days after the injection. It also impaired the acquisition (day 5 post injection) and expression (day 6) of fear freezing to a tone but not to context. In plasma, CD40 Ab led to an increase of TNF at days 2-5, increases in plasma and brain kynurenine (days 2-8), 3-hydroxy kynurenine (days 2-6) and reduced plasma levels of serotonin (days 2-8).

Conclusions
The study demonstrates that activation of the CD40-CD40L pathway in mice causes a sustained decrease in motivation for gustatory reward and in learning and that these behavioral phenotypes were accompanied by changes in brain levels of metabolites of the tryptophan pathway. These findings contribute to the further understanding of the aetio-pathophysiology of the comorbidity of autoimmune disorders and MDD and could lead to potential treatment targets.

ASSOCIATION BETWEEN HERPES SIMPLEX VIRUS-2 AND PERSONALITY

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SUMMARY:
Background: Herpes Simplex-2 is a neurotropic virus which has been associated with encephalitis, schizophrenia and affective disorders. It establishes latency in central nervous system and reactivates with stimuli such as stress, menstruation, infection, ultra violet light, fever, nerve injury and immunosuppression. To our knowledge, no previous studies on HSV-2 seropositivity and personality traits have been reported.

Method: 1,000 psychiatrically normal adults (51% males, mean age of 56 and 49% females, mean age of 51) with no Axis I or Axis II conditions were recruited from general population in Munich, Germany. Multivariate test of association (MANOVA) and multiple regression models were used between HSV-2 seropositivity status and TCI.

Results: Seropositivity of HSV-2 is inversely associated with Harm Avoidance (p=0.039) and positively associated with Novelty Seeking (p =0.016).

Conclusion: This is the first study reporting an association between HSV-2 seropositivity and personality traits related to risk taking behavior. Limitation is absence of the direction of causality which requires further longitudinal studies.

EFFECTS OF CNS REGION-SPECIFIC VERSUS PERIPHERAL INCREASED TNF ON EMOTIONAL BEHAVIOUR IN MICE

Lead Author: Federica Klaus, M.D.
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SUMMARY:
BACKGROUND
High comorbidity of MDD (major depressive disorder) and autoimmune disorders (e.g.

multiple sclerosis) supports the growing clinical and experimental evidence that inflammatory processes might play an important role in the aetio-pathophysiology of MDD. Several candidate mediators of these effects are proposed, including increased levels of the pro-inflammatory cytokine tumor necrosis factor alpha (TNF).
METHODS
In mice, the effects of brain-region specific or peripheral circulation increase in murine TNF on MDD-relevant emotional behaviours were investigated. One readout test was saccharin consumption and preference. Central expression of TNF was increased by bilateral injection of an adeno-associated (AAV) murine TNF vector in a specific brain region. After 14 days of viral expression, a localized, dose-dependent increase in TNF protein to 0.5-100 pg/mg tissue protein vs <0.3 pg/mg in control mice was observed, in the absence of effects on brain cytoarchitecture or peripheral TNF levels. When murine TNF was injected daily at 1Âµg i.p for 6 days, plasma TNF level was 600 pg/ml after 1 h (0.6 pg/ml in controls) and declined rapidly. In brain, TNF level in amygdala was 2.7 pg/mg tissue protein (2.5 pg/mg in control mice). When murine TNF was administered continuously via subcutaneous osmotic minipump at 0.5 Âµg/day for 7 days, plasma TNF was 35 pg/ml at day 1 and 8.6 pg/ml at day 3 (0.5 pg/ml in controls).
RESULTS
In amygdala, viral TNF expression was without effects on saccharin consumption or preference. When murine TNF was injected daily at 1Âµg i.p for 6 days saccharin consumption was reduced ($p<0.05$). When murine TNF was administered continuously via subcutaneous osmotic minipump at 0.5 Âµg/day for 7 days saccharin consumption was reduced ($p<0.05$).
CONCLUSION
Integrating the current findings indicates that, in isolation from other factors, increased TNF exerts important indirect but not direct effects on the neurobiology underlying emotional responses to a rewarding stimulus in mice.

ANTIDEPRESSANTS ASSOCIATED PURPURA: A RARE FAMILIAL CASE PRESENTATION

Lead Author: Shama Faheem, M.D.
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SUMMARY:
SSRIs and SNRIs have been a welcomed-edition in psychopharmacology. Though not frequent, side effects such as purpura, thrombocytopenia and bleeding have been reported from these medications.

A 70-year-old Caucasian female with major depression and comorbid fibromyalgia was prescribed duloxetine, dose gradually increased to 60 mg. Patient responded with remission of her depression and improvement of fibromyalgia. However, she developed 1-2 inch-purpura on her arms. Her basic labs including CBC with platelet count, PT/INR were within normal range. The patient's duloxetine was stopped. She developed no more purpura and the ones she had, faded away. Subsequently the patient was tried on bupropion XL 150mg, with an intent to avoid serotonergic antidepressants. However, the patient developed similar purpura that cleared once the medication was discontinued. The patient was lost to follow up for some months but then returned requesting a re-challenge with duloxetine for her depression which has worsened off the medication. Duloxetine was reinstituted with similar results and was, thus, discontinued. Later patient developed severe neuropathy and, was tried on nortriptyline starting at 25mg and increasing to 50mg. She developed purpura again that resolved upon discontinuation of medication. Upon questioning, it was discovered that her daughter had also developed a similar reaction with duloxetine as well other antidepressants including

bupropion and nortriptyline that resolved with its discontinuation.

In the last few years, the role of SSRIs and SNRIs in inducing bleeding has emerged as a new safety concern. Mechanisms that have been postulated include depletion of serotonin in platelets, increase in capillary fragility, modification of formation of platelet plug and responsiveness of peptide-induced activation of platelets through stimulation of thrombin receptor, all affecting platelet aggregation. Studies using rat serum focusing on fluoxetine, nortriptyline and their effect on the vascular system reported significant inhibition of ATP, ADP, and AMP hydrolysis and suggested that both medications changed the nucleotide catabolism, signifying that homeostasis of the vascular system can be altered by antidepressant treatments.This could be one possible pathway in the etiology of these side effects. The development of similar purpura with bupropion was more unexpected as the bleeding risk associated with antidepressants has been attributed to serotonin. Significant improvement in her physical signs upon medications discontinuation, confirms that the reaction was caused by 3 different classes of antidepressant indicating the possibility of some common pathway for this reaction. Our patient is unique in having a family member with the same reaction to various classes of antidepressant, further suggesting a genetic predisposition to platelet dysfunction in a selected group of patients to antidepressant treatment, an area needing further investigation.

TARDIVE DYSKINESIA AND TARDIVE DYSTONIA WITH SECOND-GENERATION ANTIPSYCHOTICS IN BIPOLAR DISORDER PATIENTS UNEXPOSED TO FIRST-GENERATION ANTIPSYCHOTIC

Lead Author: Ahram Lee
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SUMMARY:
Objective Second-generation antipsychotics (SGAs) are frequently used in the treatment of bipolar disorder. However, there is still no consensus on the risk of tardive dyskinesia and dystonia with SGAs in bipolar disorder. This study aimed to investigate, in a naturalistic out-patient clinical setting, prevalence rates and associated factors of tardive dyskinesia and dystonia with SGAs in patients with bipolar disorder.

Methods The authors assessed 78 non-elderly patients with bipolar (n=71) or schizoaffective disorder (n=7) who received SGAs with a combined use of mood stabilizers for more than three months without previous exposure to first-generation antipsychotics. Tardive movement symptoms were assessed using the Abnormal Involuntary Movement Scale (AIMS), Extrapyramidal Symptom Rating Scale (ESRS). Hospital records longer than one recent year describing any observed tardive movement symptoms were reviewed.

Results A current or past history of tardive dyskinesia and/or tardive dystonia associated with SGAs was identified in 13 subjects (16.7%). These patients were being treated with ziprasidone, risperidone, olanzapine, quetiapine, paliperidone at the time of the onset of the movement symptoms. Tardive dyskinesia was mostly in the orolingual area, and the most frequently observed tardive dystonia was oromandibular area. A past history of acute dystonia was significantly associated with tardive dyskinesia and dystonia. A antecedent lithium use also showed trend of association with tardive movement syndromes.

Conclusion Tardive dyskinesia or dystonia was observed in a substantial portion of

bipolar disorder patients who had been treated with SGAs. A history of acute dystonia and the antecedent lithium treatment seem to increase the risk of tardive movement syndromes.

Key Words: Second-generation antipsychotics, Tardive dyskinesia, Tardive dystonia, Bipolar affective disorder, lithium

SEROTONERGIC ANTIDEPRESSANTS AND INCREASED BLEEDING RISKS IN BREAST BIOPSY

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SUMMARY:
PURPOSE:
Recent investigations have demonstrated that serotonergic antidepressant (SAd) use may increase the risk of perioperative bleeding events. Our objective is to evaluate the possibility of a similar association in patients undergoing radiologic breast biopsies.

METHODS:
We used data from 3890 patients undergoing 6300 biopsy procedures between January 2011 and October 2014 in the Breast Clinic of McGill University Health Centre, Montreal, Canada. In this case-control study, cases were patients reported to have abnormal bleeding during their biopsy by board-certified radiologists. A control group of non-bleeders was selected using matching according to age and type of biopsy. The correlation between abnormal bleeding and SAd use was assessed using bivariate and multivariate statistical analyses.

RESULTS:
There were 97 patients with abnormal bleeding and 137 matched controls. Ten bleeders (cases) were on SAds (7 Citalopram, 3 Paroxetine) while only one non-bleeder (control group) was on a SAd (low-dose Sertraline, 25mg/day). SAds were significantly associated with increased bleeding risk (10.3% vs. 0.7%, Fisher's Exact p=0.001). Moreover, after controlling for confounding factors (size of biopsy, pathology result, and NSAID use), multivariate logistic regression confirmed that SAds were associated with elevated bleeding risk (OR=15.9 [95%CI 2.0-127.1], p=0.009).

CONCLUSIONS:
This is the first study demonstrating increased bleeding events in breast biopsy patients using SAds. Clinicians should be aware that SAds may be associated with peri-operative bleeding risk, even in relatively minor procedures.

A CASE OF MIRTAZAPINE-INDUCED NEUTROPENIA

Lead Author: Melinda McCusker, N.P.

SUMMARY:
Neutropenia is defined as having an absolute neutrophil count (ANC) of less than 1500/ÂµL. Risk of infection increases at <1000/ÂµL and severe neutropenic range is <500/ÂµL. Patients suffering from neutropenia are at risk for severe infection and sepsis as well as septicemia and shock. Neutropenia is a rare but threatening side effect of mirtazapine with a risk of 1/1000. Few articles specifically addressing mirtazapine-induced neutropenia have been reported in the medical literature. In this case, a 73 year old female taking mirtazapine 15 mg at bedtime for major depressive disorder presented to the emergency department with chief complaints of confusion, nausea and vomiting. Initial impression was febrile neutropenia. Through several differential assessments, neutropenia was attributed to mirtazapine. Mirtazapine was discontinued and changed to sertraline. This case highlights the importance of awareness of such potentially fatal side effect of mirtazapine.

ADDERALL-INDUCED TRICHOTILLOMANIA: A CASE REPORT

Lead Author: Chiranjir Narine, M.D.
Co-Author(s): Sajjad R Sarwar, MD., Theodor B Rais, MD

SUMMARY:

Adderall (dextroamphetamine/amphetamine) is a psycho-stimulant medication approved by the Food and Drug Administration (FDA) for the treatment of Attention Deficit Hyperactivity Disorder (ADHD). This medication is usually well tolerated with minimal side effects. We report a case of a 12 year old female who was prescribed Adderall for her ADHD by her primary care physician who subsequently developed Trichotillomania. A short time following the initiation of the medication the patient's family members noticed the patient displaying an unusual hair pulling behavior. The patient was referred to a psychiatrist for an evaluation of Trichotillomania. Following a thorough evaluation the decision was made to discontinue the Adderall and switch to Guanfacine. The urge to pull her hair along with her anxiety dissipated following this change. Close follow up was maintained for over a year with both the psychiatrist and the primary care physician, during this time the patient did not display any unusual hair pulling behaviors. This case appears to display a very unusual side effect of Adderall.

AN ATOMOXETINE ABERRATION- A CASE REPORT OF ADULT ONSET SUBSTANCE INDUCED PSYCHOSIS

Lead Author: Insiya Nasrulla
Co-Author(s): Joseph Squitieri D.O., Maria Bodic M.D., Theresa Jacob Ph.D., M.P.H.

SUMMARY:

Abstract
Introduction
The FDA has approved atomoxetine in 2002 for the treatment of Attention Deficit/ Hyperactivity Disorder (ADHD). It is a selective inhibitor of the presynaptic norepinephrine transporter with minimal affinity for other receptors or transporters. Most common side effects in adult trials include constipation, dry mouth, nausea, decreased appetite, dizziness, erectile dysfunction, and urinary hesitation. Emergence of psychotic symptoms in patients without a prior history is a very rare side effect. We present a case of a 52-year-old woman with a past psychiatric history of posttraumatic stress disorder (PTSD) and major depressive disorder (MDD) in full remission with no previous episodes of psychosis, who was recently started on Atomoxetine. She presented with paranoid delusions, disorganized behavior and auditory hallucinations. No symptoms of depression, mania or anxiety were elicited. She improved promptly upon discontinuation of atomoxetine and a course of risperidone. Other differential diagnoses including MDD with psychotic features, other substance induced psychosis or psychosis due to a medical condition were considered and ruled out.
Methods
A literature review using PubMed, Google scholar and Embase databases was performed using the keywords: "Atomoxetine", "psychosis" and "adult". Publications reporting on adverse events were selected for review. The package insert information for this drug, including the clinical trials data available leading to the FDA approval, was also consulted.
Results
The search revealed a total of 12 relevant articles describing treatment with atomoxetine in adults. Only two of them mentioned new onset psychosis among the reported adverse events but there were no details regarding the frequency, severity or treatment in those patients. All other articles concluded atomoxetine was fairly well tolerated in adults and there were no major adverse events leading to the discontinuation of treatment. As per the package insert, in a pooled analysis of multiple short-term, placebo-controlled studies, psychosis occurred in about 0.2%

of cases (4 patients with reactions out of 1939 exposed to atomoxetine for several weeks at usual doses, compared to 0 out of 1056 placebo-treated patients), however these studies included only children and adolescents.

Conclusion

To the best of our knowledge, psychosis has been very rare in conjunction with atomoxetine treatment in adults. There is a large body of data regarding the emergence of psychosis in children and adolescents, but this has not been found to be as common in adults. However, due to the debilitating nature of this symptom it would be an important adverse effect to consider prior to beginning therapy with this medication, especially in populations at risk for developing psychosis.

SYNDROME OF INAPPROPRIATE ANTIDIURETIC HORMONE (SIADH), A CLINICAL REPORT OF A CASE WITH SODIUM-VALPROATE INDUCED HYPONATREMIA

Lead Author: Kalliopi S. Nissirios, M.D.
Co-Author(s): Tina Hackett, William Greg Levitt, M.D, Muhammad Puri, M.D., Asghar Hossain, M.D.

SUMMARY:

We report a case of a 59 year-old Hispanic Female who was admitted to the acute adult inpatient unit for worsening depression and inability to care for herself. The patient has a history of schizoaffective disorder, bipolar type and has been admitted to the inpatient psychiatric ward multiple times for severe depressive and psychotic symptoms. Review of available medical records shows that this patient has had schizoaffective disorder, bipolar type since at least 2006 and has been on the mood stabilizer Sodium Valproate since January 2008. Five months after being placed on divalproex sodium 500 mg BID patient developed hyponatremia (Na 127) that required medical hospitalization in June 2009. Patient was stabilized with intravenous fluids at that time and her sodium level normalized. She remained on Sodium Valproate, however, and her sodium levels have been low to normal since 2009. One well-known side effect of chronic sodium valproate therapy is hyponatremia caused by excess Anti-Diuretic Hormone secretion.

The purpose of this case report is to document a case in which chronic sodium valproate therapy precipitated inappropriate secretion of Anti-Diuretic Hormone leading to chronic hyponatremia. It is also to explore the mechanism by which Sodium Valproate causes SIADH.

CLOZAPINE RELATED MYOCARDITIS: A CASE SERIES

Lead Author: Anupriya Razdan, M.B.B.S.
Co-Author(s): Srinath Gopinath, M.B.B.S., Aryeh Dienstag, M.D., Nitin Toteja,M.D.

SUMMARY:

Introduction:

In 1989 Clozapine was approved in the United States for severely ill and treatment refractory schizophrenic patients. We present two cases, including an adolescent who were started on clozapine and developed myocarditis with completely different clinical picture.

Case 1-Adolescent with treatment resistant schizophrenia, who was started on Clozapine titrated rapidly up to 200mg. He developed sinus tachycardia on day 13 of his treatment but was clinically asymptomatic. Cardiac enzymes were elevated, and non-specific ST/T wave changes were present with minor changes on Echocardiography.

Case 2- This was an adult in his mid 20's, who developed fever, headache, and chest pain within 3 weeks of starting clozapine, rapidly titrated up to 250 mg/day. EKG showed non-specific ST/T wave changes, BNP, ESR, CRP elevated but Troponins were negative. Echocardiography showed EF of 15%.

Both the patients were diagnosed with toxic myocarditis- clozapine induced. Clozapine was stopped and was not re-challenged.

Discussion: Common side effects of clozapine on the cardiovascular system include tachycardia and orthostatic hypotension. However, clozapine-associated myocarditis and cardiomyopathy have been reported as well. A review of the literature showed that clozapine is associated with a low risk (0.015%â€“0.188%) of potentially fatal myocarditis or cardiomyopathy (Merrill 2005).
The pathophysiology of clozapine-induced myocarditis is uncertain. A study done by Killian et al., suggested that clozapine-induced myocarditis could likely result from a Type I Ig E-mediated acute hypersensitivity reaction. Other hypothesis include elevated Noradrenaline levels in patients treated with clozapine; cytochrome P450 1A2/1A3 enzyme deficiency, blockade of calcium dependent ion channels, and increased production of inflammatory cytokines.
Clozapine related cardiotoxicity remains difficult to diagnosis because its manifestations -particularly fever (20%), tachycardia, and fatigue-are common during clozapine titration and are considered "benign, self-limited phenomenon" (Merrill 2006).
No specific guidelines have been recommended for screening for myocarditis. However, ECG, cardiac enzymes, BNP and echocardiography are recommended when myocarditis is suspected. Cardiac biopsy though considered a gold standard for diagnosis, maybe inconclusive due to uneven distribution of the inflammation. Once diagnosed, clozapine should be stopped immediately and supportive care provided.

Conclusion
High index of suspicion should be maintained especially in the first 2-3 weeks of starting clozapine for onset of myocarditis including a close watch on vitals and clinical symptoms.
Although there have been documented case reports of clozapine re-introduction after clozapine induced endocarditis (Manu 2005) â€“ clozapine is generally used with caution /withheld in cases of heart failure (Stahl 2005).

SUBSTANCE WITHDRAWAL CATATONIA: A NEW DSM-5 DIAGNOSIS?

Lead Author: Salmahn Alam, M.D.
Co-Author(s): Gregory Gale, M.D., Nancy C. Maruyama, M.D.

SUMMARY:

Introduction: Benzodiazepine withdrawal catatonia (BWC) is a rare complication of benzodiazepine withdrawal that is scarcely described in the literature. Most catatonia occurs secondary to psychiatric reasons including psychotic and mood disorders. It has been reported to occur in up to 35% of psychiatric inpatients and in 2-3% of psychiatric consultations on medical inpatients. The DSM-5 divides catatonia into three categories: catatonia associated with another mental disorder, catatonia due to another medical condition and unspecified catatonia (where the etiology is unclear or the criteria for catatonia are not met). We present two cases of catatonia during acute withdrawal from benzodiazepines in patients with benzodiazepine dependence. The patients had no comorbid psychiatric, medical or seizure disorder typically associated with catatonia. We summarize the literature on this phenomenon, explore the possible pathophysiology of BWC and propose treatment recommendations.
Methods: A literature review was conducted by searching PubMed using the keywords "benzodiazepine withdrawal catatonia." Non-English publications were omitted.
Results: The search produced 21 case reports in 15 papers. Of the 21 cases, only

four were in benzodiazepine using patients who had no diagnosis that might otherwise produce catatonia (mood, psychotic, and medical or seizure disorder). Very few papers made global treatment recommendations.
Discussion: BWC is a rare complication of benzodiazepine withdrawal that can occur in the absence of other catatonia producing disorders (mood, psychotic, seizure or medical). Our two cases underscore the importance of recognizing BWC as an independent phenomenon of withdrawal that should be considered in the differential of catatonia. BWC appears to require an extremely slow taper. We propose a separate category in DSM-5, substance withdrawal catatonia, to ensure these patients are appropriately diagnosed, treated and receive substance use disorder referrals.

RISPERIDONE-ASSOCIATED PANCREATITIS

Lead Author: Sogand Ghassemi
Co-Author(s): Jonathan G. Leung, PharmD., Kathryn M. Schak, M.D.

SUMMARY:

Objective: To describe a case of pancreatitis associated with the use of risperidone in patient with pervasive developmental disorder and intellectual disability. Case Report: A 26 year-old female with a psychiatric history of pervasive developmental disorder NOS and intellectual disability was treated with risperidone 1.5 mg for approximately 2 years to target aggressive outbursts. Her medical history was significant for latent tuberculosis and reflux disease with no history of alcohol, tobacco, or substance abuse. Concomitant medications included melatonin and omeprazole. After experiencing reduced oral intake and progressively worsening nausea and vomiting for 3 weeks the patient presented to the emergency department. Patient's emesis was non-bloody and non-bilious. She had no diarrhea, melena, or hematochezia. Physical exam was positive for sharp epigastric pain. She was afebrile and slightly tachycardic. Labs studies showed elevated lipase (833 U/L), amylase (114 U/L), but normal aspartate aminotransferase (52 U/L), alanine aminotransferase (17 U/L), total bilirubin (1.0 mg/dL), indirect bilirubin (0.1 mg/dL), and normal lipid panel (TGs 26 mg/dL, LDL 82 mg/dL, HDL 50 mg/dL). She was hospitalized for management of acute pancreatitis, including pain management as well as fluids repletion. Ultrasound was negative for stones or changes to the biliary tree. With other common causes of pancreatitis including hypertriglyceridemia and choledocholithiasis were ruled out; risperidone was suspected as the culprit and discontinued. Symptoms of pancreatitis abated and she was discharged without risperidone. At a follow-up outpatient visit the risks and benefits of restarting risperidone were discussed. The patient's guardian wished to attempt a rechallenge with risperidone due to the significant benefits previously seen. A reduced dose of 1 mg was restarted. Ongoing monitoring of lipase remained within normal limits at 2 weeks, 1 month, 3 months, and 6 months. Discussion: Pancreatitis is a potentially fatal adverse event that has been associated with antipsychotic use. The majority of cases involve second-generation antipsychotics; however first-generation antipsychotics have also been implicated. Prior reports describe pancreatitis occurring after days to years after antipsychotic initiation with no dose relationship. Pancreatitis associated with second-generation antipsychotics has also been reported with or without hypertriglyceridemia or diabetic ketoacidosis. Additionally, asymptomatic pancreatitis has been described in the literature. We report a first case describing risperidone-associated pancreatitis in a patient with a pervasive developmental disorder and intellectual disability. This is important adverse event to be aware of because somatic symptoms may not be

clearly vocalized by this demographic of patients.

DISCORDANT IDENTIFICATION OF SYMPTOMS AND DIAGNOSIS OF DELIRIUM

Lead Author: Eun Ha Kim, M.D.
Co-Author(s): Victoria Balkoski, M.D., Kalid Elnagar, M.D.

SUMMARY:
Discordant Identification of Symptoms and Diagnosis of Delirium

Introduction: Delirium is a common psychiatric disorder in the acute adult inpatient setting. Its prevalence is estimated to be approximately 10 to 30 percent of all medically ill patients who are hospitalized (Sadock & Sadock, 2007). Delirium has a relatively poor prognosis, including increased morbidity and mortality, longer hospital stays and increasing healthcare costs. However, its detection rate by primary treating physician is low. In this study, we examined misdiagnosed delirium cases to determine which specific symptoms of delirium were identified and which were frequently missed by the primary team and were later detected by the psychiatry consultants.

Method: This is an exploratory study based on retrospective chart review. We reviewed charts of patients who were diagnosed with delirium by a psychiatrist on the psychiatry consultation service only in cases where the initial consult was called for a problem other than delirium, confusion or disorientation between January 1, 2012 and December 31, 2013. We examined which delirium symptoms were not detected or were incorrectly identified by the primary treating physician, and examined whether there was a relationship between undetected or misidentified symptoms and other factors, such as specialty of referring service or patient demographics. Data was coded for differences in detection of individual symptoms of delirium between the primary team and the psychiatric team for each patient.

Conclusion: Symptoms of delirium that were accurately identified by the primary treating physician were reduced clarity of awareness of the environment, acute onset, psychomotor agitation and neurological abnormality. Other symptoms of delirium were not detected by or were misidentified by the primary treating physician but were detected during the psychiatric consultation. These included reduced ability to focus, sustain attention or shift attention, memory deficit, fluctuation of symptoms during the course of the day and psychomotor retardation. There was also a difference between detection of symptoms of delirium among different subspecialties, for example medical versus surgical services. Results indicate that improved education for primary care and other specialties regarding specific or more subtle signs and symptoms of delirium and/or use of a standardized delirium checklist would lead to earlier detection and improved clinical outcomes in addition to reduced lengths of stay and hospitalization costs.

TREATMENT OF CATATONIA CAUSED BY WILSONÂ´S DISEASE WITH ELECTROCONVULSIVE THERAPY: A CASE REPORT AND SYSTEMATIC REVIEW OF LITERATURE

Lead Author: Antonio L. Nascimento, M.D., M.Sc.
Co-Author(s): Daniel Mazza Levin, M.D., Fernanda Alves Ramallo, M.D., Flavio Valdozende Alheira, M.D., M.Sc., Marco Antonio Alves Brasil, M.D., M.Sc., Ph.D.

SUMMARY:
Introduction: WilsonÂ´s disease (WD) is an autosomal recessive disorder of hepatic metabolism of copper. Patients with WD may present copper accumulation in hepatocytes and in other organs such as the brain. The lifetime prevalence of WD is 1:30,000 and it is attributed to a defect in

ATP7B gene in chromosome 13. Since the first description of the disease in Dr. WilsonÂ´s monograph published in 1912, psychiatric symptoms have been related to WD in addition to hepatic symptoms (as cirrhosis or liver failure) and neurological symptoms (as Parkinsonism). Psychiatric symptoms (which might include depressive and manic symptoms as well as psychosis, catatonia and obsessive-compulsive symptoms) might be the first manifestation of WD and it might take up to 2.4 years from the onset of psychiatric symptoms to the diagnosis of WD. Although antidepressants, antipsychotics, benzodiazepines and lithium have been used in patients with WD, reports of the use of electroconvulsive therapy (ECT) in these patients are still scarce.

Case Report: We present the case of a 35 year old man who was on prophylactic treatment for WD since the age of 13, when he was diagnosed with the defect in ATP7B gene after his brotherÂ´s death. The patient presented sudden mood and behavioral changes with periods of restlessness and agitation, which evolved to catatonia in ten days. He was then admitted to the university hospital and treated for catatonia with lorazepam 6mg/day for five days and olanzapine 10mg/day for 10 days with no response. Considering the poor response to pharmacological treatment, the psychotropics were discontinued and ECT was started. The patient received 12 sessions of bilateral ECT with a brief-pulse square-wave ECT device. After the ECT course, the patient presented remission of the psychiatric symptoms and was discharged and referred for outpatient psychiatric treatment.

Systematic Review: We conducted a systematic review at the PubMed and ISI Web of Knowledge database with the keywords "WilsonÂ´s Disease" combined with "Electroconvulsive" or "ECT" which retrieved only five articles, all of them case reports. The five papers reported treatment of patients with WD (four men and one woman) with a myriad of psychiatric manifestations (one patient with a depressive episode, two patients with psychotic symptoms, two patients with catatonia) treated with ECT. Four patients presented remission of their psychiatric symptoms with ECT. The patient with a depressive episode presented a manic switch and ECT was discontinued. Although the authors of the first report hypothesized that the accumulation of copper on the brain might cause changes in brain conductance, this did not happen.

Conclusion: ECT might be an effective treatment for psychiatric manifestations of WilsonÂ´s Disease. Further studies are need to evaluate the efficacy and tolerability of ECT in this population.

USING NEW PSYCHIATRIC DIAGNOSIS AS A QUALITY INDICATOR FOR CONSULTATION-LIAISON PSYCHIATRY SERVICES: A CANADIAN STUDY

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Co-Author(s): Adrienne Tan, M.D., Rima Styra, M.D., Mateusz Zurowski, M.D., Raed Hawa, M.D., Susan Abbey, M.D., Sanjeev Sockalingam, M.D.

SUMMARY:

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 C-L Psychiatry services are also being asked to report quality indicators on outcomes relevant to complex medically ill patients with co-morbid psychiatric illness. Rate of newly diagnosed psychiatric illness by the C-L Psychiatry Service has been previously identified as a potential quality indicator for C-L services. We report Canadian C-L Psychiatry quality data on the rates of new

psychiatric diagnoses made by the C-L Psychiatry team during a 10 month period.

Methods: 643 patients referred to the C-L Psychiatry Service at two hospitals in the University Health Network in Toronto, Canada were included in this sample. The time period for data collection was from January 2014 to October 31, 2014. Data collected as part of quality and clinical care reporting included patient demographics, referring services, consultation diagnosis, length of stay and rates and type of new psychiatric diagnoses were made in a C-L service. A new psychiatric diagnosis included all major psychiatric disorder categories except for delirium and adjustment disorder. Data was analyzed using descriptive data. Missing data was excluded from the final analysis.

Results: Amongst all referred patients, 51.5% were male and the mean age was 58.2 years. The highest referring services were General Internal Medicine (34.9%), Transplant (15.4%), the Intensive Care Units (12.8%) and the Cardiology (8.1%) services. The most common reasons for referral were for assessment of mood (38.8%), confusion (20.5%), anxiety (15.6%) and suicide risk assessment (11.6%). The primary diagnoses made at the time of consultation were delirium (24.5%), major depression (20.4%) and anxiety disorders (11.2%). In 14% of patients, the C-L Psychiatry service made a new psychiatric diagnosis based on collateral history, patient report and review of the patient's medical chart.

Conclusions: Based on this data from two Canadian General Hospitals, C-L Psychiatry services diagnosed new psychiatric disorders 14% of the time. The most common psychiatric diagnosis was mood followed by anxiety when delirium was excluded. Future studies should compare referral patterns and new psychiatric diagnoses by other C-L Psychiatry services in Canadian settings to increase generalizability of findings.

DEVELOPMENT OF THE KOREAN VERSION OF POSTCONCUSSIONAL SYNDROME QUESTIONNAIRE

Lead Author: miri Yoon
Co-Author(s): Younghoon Ko, M.D., Ph.D., Changsu Han, M.D., Ph.D., Sangwon Jeon, M.D

SUMMARY:

Objectives
Postconcussional syndrome questionnaire(PCSQ) is a self â€“ report inventory for postconcussional disorder(PCD). The purpose of this study was to evaluate the validity and reliability of the Korean version of the PCSQ.

Methods
The PCSQ, Trait and State Anxiety inventory(STAI-I, II), CESD were administered to 104 patients(Postconcussional disorder 54, organic disorder such as organic mood disorder, organic emotionally labile disorder, organic anxiety disorder and organic personality disorder 50). A mann-whitney test was performed to see if there is any statistical significant difference between the PCD group and the organic disorder group. Inter-item correlation, test-retest correlation were tested. Factor analysis among the items were performed. Their relationship between PCSQ and STAI-I, II, CESD were evaluated by correlation coefficient.

Results
There was no significant statistical difference between the PCS group and the organic disorder group among total PCSQ and each subscale factors. The factor analysis of the PCSQ yielded 4 factors model. Factor 1 represented 'psychological and cognitive symptoms', factor 2 represented 'somatic symptoms', factor 3 represented 'infrequent symptoms' and factor 4 represented ' exaggeration or

inattentive response symptoms'. The Cronbach's alpha coefficient of the total PCSQ was 0.956. Among the sub scale factors, the Cronbach's alpha coefficient were 0.956, 0.851, 0.75 and 0.686 (psychological and cognitive, somatic, infrequent and exaggeration or inattentive response factor, respectively). The test-retest reliability coefficient was 0.845. Among the sub scale factors, the test-retest coefficient were 0.873, 0.713, 0.621 and 0.743 (psychological and cognitive, somatic, infrequent and exaggeration or inattentive response factor, respectively). The PCSQ showed positive correlation with STAI-I, II(State and Trait anxiety in STAI) and CESD(correlation coefficient 0.646, 0.64, 0.779 respectively).

Conculsions
This study suggests that the Korean version of PCSQ is a reliable tool for assessing postcocussional disorder. The factor analysis of the Korean version of PCSQ yielded 4 factors model. The Korean version of PCSQ can also be applied to other organic disorders including organic mood, organic anxiety, organic personality and organic emotionally labile disorder.

WORK RELATED STRESS AMONG CANADIAN RESIDENT TRAINEES

Lead Author: Priya Sharma, B.Sc., M.D.
Co-Author(s): Priya Sharma, B.Hsc. M.D., Mamta Gautam, M.D. FRCP(C), MBBS, DPM, MD, MRCPsych, CCT(Geriatric Psychiatry), FRCPC

SUMMARY:
Work-Related Stress Among Canadian Resident Trainees

Learning Objectives:
1. Know the prevalence of work-related stress among residents
2. Recognize the causes of work-related stress
3. Learn about strategies for early detection and management of stress-related mental health problems

Abstract: Postgraduate training is an exciting time of professional growth; however, residency can also be a challenging period for some physicians. We reviewed the literature to examine the prevalence of, triggers for, strategies for detection and management of work-related stress and mental health problems among Canadian residents. Methods: PsychInfo, Embase and PubMed databases were searched for relevant English language articles using the medical subject headings resident, residency education, Canada, stress, burnout, emotional stress, chronic stress, job stress, suicide, suicidal behavior, self-injurious behavior. Results: The search yielded a total of 36 articles of which 12 were included in this review. The prevalence of depression is higher among residents than it is among community samples. Close to 30% of respondents in a 2005 Canadian study identified that they experienced a mental health problem over the course of their residency training. Ratings of perceived stress as well as depression scores are higher in females. Contributing factors to the experience of heightened stress and mental health difficulties include year of postgraduate training, duty hours, sleep deprivation, being unmarried and time pressures. Conclusions: There is a paucity of research on Canadian residents wellbeing and mental health. The studies that have been done in this area indicate a need for early detection of distress among residents through educational initiatives, recognizing the barriers to physicians seeking help and the implementation of formal wellness programs into residency program curricula.

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THE MENTAL HEALTH CARE FOR LOW INCOME/UNINSURED CHILDREN IN AN EASTERN IOWA COMMUNITY AS IT RELATES TO MENTAL HEALTH DISPARITIES

Lead Author: Nicole Del Castillo, M.D.
Co-Author(s): Coreen Frank, B.A., Elizabeth Homan, M.D., Nancy Beyer, M.D.

SUMMARY:
Objective: Assess differences suggestive of a mental health disparity in children seen in a University Clinic (UC) versus a School Mental Health Clinic (SMHC) in an Eastern Iowa community.

Methods: Demographic data of school aged children who are served at the UC and SMHC from 2010-2014 was obtained. This data included: Date of birth/age, sex, ethnicity/race, payer source/insurance, date of appointment, visit status, city and county.

Results: Most students were males around 12-13yrs. From 2010 to 2014 the UC increased from 16 [psychiatrist (8), fellows (6) and NP/PA (2)] to 19 providers [psychiatrist (9), fellows (7), and NP/PA (7)]. The SMHC increased from 1 (psychiatrist) to 2 providers (a psychiatrist and fellow). The number of students seen in the SMHC increased by about 46% after another provider was added. Given that the SMHC only has clinic 1 morning weekly, providers see ~5-10% the patients that the UC sees. 25-30% at the UC are minority patients verses >60% Black and Latino patients at SMHC.
From 2010-2011 many Black (67%) and Latino (75%) students in the SMHC were uninsured. By 2012, the number of uninsured Latino students decreased by about 20% and the majority of Black students were on Medicaid. Now, <30% are uninsured, >50% on Medicaid, and <11% have private insurance. The majority of UC patients have private insurance (>55%) or Medicaid/Medicare (35-40%). No patients have been designated as "uninsured" in the UC. In the UC, most Black and Latino patients are on Medicaid/Medicare and most Asian (>80%) and White (>60%) patients had private insurance. Multiracial patients often have either Medicaid (~50%) or private insurance (~40%).

Conclusions: A high proportion of the minority/underserved populations in this Eastern Iowa community are on medicaid/medicare or are uninsured. The SMHC reduces barriers to care by providing services more readily accessible to students and their families. Furthermore, the support of the school district in providing student family advocates enhances service provision to a higher proportion of the low income/uninsured and minority/underserved students in this community. Though the number of SMHC students remained the same from 2010-2011 to 2011-2012, there was a decrease in the amount of uninsured likely due to increased resources within the school to identify needs and facilitate resource utilization, as well as due to increased resources in the state through Affordable Care Act. In addition, the collaboration of the SMHC with primary care optimizes outcomes through further collaboration to address overarching disparities in health care that may contribute to problems in academic achievement, legal difficulties, and overall health. Therefore, expanding this school mental health clinic may help identify the sources of health disparities in Eastern Iowa with the hope of reducing and possibly eradicating these disparities with their devastating effects.

LIFE EXPECTANCY OF INDIVIDUALS WITH SEVERE MENTAL ILLNESS IN AN UNDERSERVED COMMUNITY MENTAL HEALTH POPULATION

Lead Author: Shalin Patel, M.D.
Co-Author(s): Carlos Fernandez, MD, Julia Hoang, MD, Janet Charoensook, MD, Jerry Dennis, MD

SUMMARY:

Introduction

People with serious mental illness die, on average, 25 years earlier than the general population. According to the 2006 morbidity and mortality report by the National Association of State Mental Health Program Directors, suicide and injury account for approximately 30-40% of excess mortality. Sixty percent of premature deaths in persons with schizophrenia are due to medical conditions such as cardiovascular, pulmonary, and infectious diseases.

In the County of Riverside (located in Southern California, east of Los Angeles), the records of 50,000 consumers of mental health services, from childhood to advanced age, were analyzed. We postulate that in an indigent county population with diverse socioeconomic issues and barriers to primary care access, the life expectancy would be shorter than the national average.

Methods

The authors conducted a database review of 50,000 Riverside County mental health consumers and analyzed for morbidity and mortality events as reported to the Medical Director of Mental Health. The consumers were predominantly Medi-Cal (California Medicaid), Medi-Care, or uninsured. The data ranged from January 2014 to June 2014. The adverse incidents tallied greater than 200 cases. The data was analyzed for trends in causes of death, age, gender, and race/ethnicity.

Results

The data analysis showed significant decreased life expectancy in Riverside County for persons with serious mental illness, more so than what was reported by the national average (near 42 years of age). The trends showed that two variables, Caucasian males and those aged 40-49, posed a higher risk for an adverse incident. When evaluated, persons with serious mental illness were more likely to die from unnatural causes compared to natural causes. Of the unnatural causes, accidental death was more prevalent. Diseases of the circulatory (cardiovascular and pulmonary) system accounted for approximately half of all deaths from natural causes.

Among these deaths, the life expectancy of those who died from natural causes was approximately 8 years more than those from unnatural/unexpected causes. On average, the Riverside County consumers of mental health services with serious mental illness who had an adverse incident resulting in death, from January 2007 to June 2014, had a life expectancy that was approximately 36 years less than the general population. Thus, compared to the national average for those with serious mental illness, the Riverside County mental health services consumers had a significantly earlier mortality/morbidity. It is suspected that this might be due to higher poverty rates, diverse ethnicity and cultural backgrounds, and barriers to access primary care services. Thus, the implementation of a new community-based psychiatry residency program in the county with integrated psychiatry/primary training is now in place with the goals of improving access to care and addressing these serious health disparity issues.

TOP 10 FREE SELF-HELP APPS FOR MINDFULNESS AND MEDITATION

Lead Author: Karen Reimers, M.D.
Co-Author(s): Andrea M. Dorn, LCSW-IT

SUMMARY:

TITLE: Top 10 Free Self-Help Apps for Meditation and Mindfulness

AUTHORS: Karen Reimers MD, Andrea M. Dorn LCSW-IT

ABSTRACT BODY:

Introduction : Self help apps can be empowering tools for psychiatric patients, to support their mental health and assist in recovery in depression, anxiety and other disorders. Meditation and mindfulness are powerful techniques to support mental health and treat psychiatric symptoms. Patients and providers may not be aware of helpful free apps they could easily recommend to patients.

Methods: Many self help apps are available to promote meditation and mindfulness. Sorting through the many options can be daunting. We tested and reviewed many available apps and selected the most promising free self help apps for independent meditation and mindfulness practice.

Results: We will list and briefly review 10 free self help apps for meditation and mindfulness that mental health care providers may wish to recommend to patients in their clinical practice.

Conclusions: This poster will familiarize clinicians with important free self help apps for meditation and mindfulness.

KEYWORDS: app, self help, meditation, mindfulness.

IDENTIFYING THE PHYSICAL ACTIVITY PREFERENCES, ATTITUDES AND BARRIERS AMONG INDIVIDUALS DIAGNOSED WITH BIPOLAR DISORDER

Lead Author: Mehala Subramaniapillai, B.Sc.

Co-Author(s): Roger McIntyre, M.D., Rodrigo Mansur, M.D., Markus Duncan, M.Sc., Kelly Arbour-Nicitopoulos, Ph.D., Guy Faulkner, Ph.D.

SUMMARY:

Physical inactivity and obesity are prevalent co-morbid conditions affecting individuals with bipolar disorder (BD). These individuals often also have to cope with multiple symptoms related to their diagnosis, which can interfere with their ability to pursue activities of daily living. Physical activity (PA) has the potential to play a dual role in this population by supporting both mental and physical well-being. However, the majority of individuals affected by BD are not physically active and lead a sedentary lifestyle. The purpose of this ongoing research project is to understand the PA preferences and barriers of individuals with BD in order to inform future PA programs that will be tailored to their needs.

Twenty-eight outpatients with BD (15 males, 13 females; mean age 43.54 Â± 11.78) from the Mood Disorders Psychopharmacology Unit at Toronto Western Hospital completed a survey assessing views on their health, weight, perceived interest and potential barriers to becoming physically active. Fifty-four percent of participants considered themselves to be "slightly overweight" or "very overweight" and expressed dissatisfaction with their weight. Seventy-one percent of participants indicated that they wanted to weigh less and considered PA to be an important component towards this goal. The majority of participants (61%) expressed an interest in a PA program tailored specifically to individuals with BD.

Participants reported that PA is likely to help their mood when they are "depressed or down" (83%) and when they are feeling "very energetic" (75%) or "up or hyper" (61%). The majority of participants (75%) did not believe that PA would trigger or worsen a manic episode. However, participants did report their BD diagnosis as the biggest barrier (57%) towards

becoming regularly active and indicated that they did not know how to tailor their PA program based on their mood (54%). Participants preferred a program that would give them the independence to carry out their own PA routine but also the professional guidance from a fitness specialist to get started, with subsequent regular contact to help them reach their fitness goals. Participants preferred a program that was of moderate intensity, although there was high variability in the type of activity they preferred. Walking was the most popular activity (54%). Participants also indicated that they would be interested in starting a PA program immediately but there was also greater variability in some parameters of a potential PA program (e.g. when, where, with whom). This study suggests that individuals with BD are interested in receiving support to be more physically active. There also appears to be some consistent preferences for the type of PA program that would be most attractive. These findings will be used in the development and evaluation of a PA intervention for this population.

PRENATAL DEPRESSION AND ANXIETY: IMPLICATIONS FOR POSTNATAL MATERNAL SENSITIVITY?

Lead Author: Philippe-Edouard Boursiquot, M.D.
Co-Author(s): Roberto Sassi, M.D., Ph.D., Leslie Atkinson, Ph.D., Alison Fleming, Ph.D., Ashley Wazana, M.D., Ph.D., Michael Meaney, Ph.D., Meir Steiner, M.D., M.Sc., Ph.D.

SUMMARY:

Rationale: Recent studies have focused on the prenatal origins of child behavior, postulating that prenatal stress, anxiety, or depression have long term consequences on the child's neurobiological development. Environmental factors in early life have also been found to influence child outcomes. Parsing out the impact of prenatal from postnatal factors on child outcomes, although challenging, allows for a more refined distinction between fetal programming and early life environmental influences on brain development. Maternal care is critical to child attachment, but to our knowledge no studies have examined whether maternal prenatal psychopathology is associated with the quality of postnatal maternal care. Thus, we tested whether prenatal symptoms of anxiety or depression were associated with maternal sensitivity at child age of 18 months.

Methods: Data from the Maternal Adversity Vulnerability and Neurodevelopment (MAVAN) study were used. Although the MAVAN is a multi-site study, only participants from Hamilton, ON were included in this analysis for methodological reasons. In this prospective study, women were recruited prior to week 20 of pregnancy. Mothers completed the Edinburgh Postnatal Depression Scale (EPDS, n = 268, mean = 6.69, SD = 5.362) and Hamilton Anxiety Rating Scale (HAMA-A, n = 269, mean = 7.09, SD = 5.677) prenatally. Maternal sensitivity was measured at child age 18 months, using the Maternal Behavior Q-sort (MBQS), based on a 35-minute videotaped session in the home. This measure captures the mother's attention and responsiveness to her infant's needs. A correlation coefficient of the mother's sensitivity, compared to a prototypically sensitive mother in 9 domains, is then generated. The MBQS was collected in 220 mothers (mean = 0.47, SD = 0.396).

Results: Due to attrition, 205 pairs of pre- and post-natal measures were available for the EPDS to MBQ-S correlation, while 206 pairs were available for the HAM-A to MBQ-S correlation. Neither prenatal EPDS ($r = -0.098$, $p = 0.163$) nor HAM-A ($r = -0.099$, $p = 0.159$) were significantly associated with MBQ-S scores.

Discussion: Prenatal anxiety or depression severity were not associated with postnatal

maternal sensitivity in our sample. These results suggest that discrete prenatal and postnatal risk factors for child psychopathology can be identified. Given that maternal sensitivity is a key aspect in the development of healthy attachment in the child, further investigations are needed to examine other potential risk factors for poor maternal sensitivity.

DIFFERENTIAL FACTORS ASSOCIATED WITH DEPRESSION IN PERI-MENOPAUSAL AND POST-MENOPAUSAL WOMEN: FOCUSED ON PREMENSTRUAL SYNDROME AND VASOMOTOR SYMPTOMS

Lead Author: Hongdae Hyun
Co-Author(s): Sook-Haeng Joe, M.D., Ph.D.

SUMMARY:
Background: The menopause is a stage where women are not only exposed to physiological changes but also face heavy psychosocial burden. Many previous researches suggest that perimenopausal women, experiencing fluctuation of sex hormones, are more vulnerable to depression than premenopausal individuals. It is also thought that postmenopausal women do not have higher risks of depression compared to women before their menopause. However, in a clinical point a view, postmenopausal women seem to be as vulnerable to depression as perimenopausal women are. It may be possible that there are different associations of potential risk factors for depression due to physiological differences according to the stages of menopause. The purpose of this study was to investigate these differential associations of potential risk factors for depression, focused on the history of premenstrual syndromes and hot flushes.
Methods: This cross-sectional study recruited Korean women aged 45-64 years who were peri-menopausal and post-menopausal from the 16 branch offices of the Korean Association of Health Promotion. All participants completed self-report questionnaires that assessed depression, menopausal status, history of premenstrual syndrome, vasomotor symptoms , attitude toward menopause, exercise, alcohol drinking, smoking, income, education.
Results: A total of 959 participants(320 perimenopausal women and 639 postmenopausal women) completed the study. In perimenopausal women, A history of premenstrual syndrome(OR=3.899, 95% CI=1.632-9.312) and a negative attitude toward menopause(OR=2.110, 95% CI=1.009-4.413), smoking(OR=14.756, 95% CI=1.229-177.113) increased the prevalence of depression. In postmenopausal women, A history of premenstrual syndrome(OR=3.311, 95% CI=1.746-6.278) and a negative attitude toward menopause(OR=1.886, 95% CI=1.176-3.024), vasomotor symptoms(OR= 2.028, 95% CI=1.132-3.632), exercise(OR=2.078, 95% CI=1.207-3.578) are significant correlate of depression.
Conclusions: Risk factors associated with depression were different for perimenopausal and postmenopausal individuals. Prospective studies with larger population are needed to confirm these findings.
Key words: perimenopause, postmenopause, depression, risk factors, premenstrual syndrome, vasomotor symptoms

COMPARISON OF STRESSFUL EVENTS AND STRESS SENSITIVITY BETWEEN DEPRESSIVE PATIENTS WITH AND WITHOUT BIPOLARITY

Poster Presenter: Kang Yoon Lee, M.D.
Lead Author: Kang Yoon Lee, M.D.
Co-Author(s): Kang Yoon Lee, M.D., Eunsoo Moon, M.D., Je Min Park, M.D., Ph.D., Byung Dae Lee, M.D., Ph.D., Young Min Lee, M.D., Hee Jeong Jeong, M.D., Tae Uk Kang, M.D., Yoonmi Choi, B.A.

SUMMARY:
Background

There are some evidences that patients with bipolar depression experience more stressful life events than do patients with unipolar depression. However, there is lack of evidence that bipolarity in depressive patients is associated with more frequent and severe stressful life events.

The current study aimed to compare stress-related factors according to the Bipolar Spectrum Diagnostic Scale (BSDS) result in depressive patients. It is known that the BSDS is useful screening tool for detecting bipolarity in depression.

Methods

A total of ninety-four patients who have experienced major depressive episodes were recruited. The presence of bipolarity was evaluated using the Bipolar Spectrum Diagnostic Scale (BSDS). Stress-related factors were measured by the Perseceived Stress Scale (PSS), the Life Experiences Survey (LES), and the Life Events Assessment (LEA). Depressive symptoms were measured using the Beck's Depression Inventory (BDI). Then the Stress-related factors were compared between depressive disorder with and without bipolarity using analysis of covariance(ANCOVA) in SPSS version 18.0, to adjust the influence of depressive symptoms.

Results

Patients with depressive disorders who screened positive on the BSDS showed higher score on the PSS negative perception subscale (p=.041), more experiences checked on the LES experience status (p=.011) and LES negative scores (p=.052) than did those who screened negative on the BSDS. However, the LEA scores did not present a significant difference between the two groups.

Discussion

These results suggest that depressive patients with bipolarity face more stressful events and hence their lives are more likely to get stress. The presence of bipolarity in depressive patients can affect their trajectories of depression. Further, prospective and systematical studies are needed to clarify these relationships between bipolarity and stress.

COMPARISON OF PERSONALITY TRAITS RELATED TO PERCEIVED STRESS BETWEEN BIPOLAR AND DEPRESSIVE DISORDERS

Poster Presenter: Jeong Jin Lee, M.D.
Lead Author: Jeong Jin Lee, M.D.
Co-Author(s): Jeong Jin Lee, MD, Je Min Park, MD, PhD, ByungDae Lee, MD, PhD, Young Min Lee, MD, HeeJeong Jeong, MD, Kang Yoon Lee, MD, Yoonmi Choi, BA

SUMMARY:

Background

Stress can substantially affect the symptoms and courses of mood disorder. Among the various factors of stress management, one's personality traits and mood state are especially important. The current study aims to examine the influence of personality traits on perceived stress in mood disorder, comparing bipolar disorder and unipolar depression disorder.

Method

Patients with bipolar disorder (N=149) and depressive disorder (N=119) who meet DSM-IV diagnostic criteria were included in this analysis. Stress was measured using the Perceived Stress Scale (PSS). Personality traits were assessed using the Temperament and Character Inventory (TCI) and the Neo Five Factor Inventory (NEO). Linear regression analysis was conducted to examine and find out the predictors that significantly affect perceived stress.

Results

When a univariate linear regression analysis was performed, it was shown that harm avoidance (Beta =.514, p<.001) and neuroticism (Beta =.572, p<.001) were positively related to the PSS score in patients with unipolar depression. However,

reward dependence (Beta =.341, p=.007), self-directedness (Beta =.385, p=.002), cooperativeness (Beta =.444, p=.000), extraversion (Beta =.480, p=.000), and agreeableness (Beta =.330, p=.009) subscales were negatively related to the PSS score. In bipolar patients as well, harm avoidance (Beta =.403, p=.001) and neuroticism (Beta =.579, p=.000) were positively related to the PSS score. Self-directedness (Beta =.633, p<.001), cooperativeness (Beta =.334, p=.006), extraversion (Beta =.496, p=.000), agreeableness (Beta =.404, p=.001), and conscientiousness (Beta =.308, p=.011) were negatively related to the PSS score.

When a multivariate linear analysis was conducted with the variables mentioned above, only neuroticism (Beta=.400, p=.025) was positively associated with the PSS score in patients with unipolar depression. In bipolar patients, self-directedness (Beta=.450, p=.003) and extraversion (Beta=.313, p=.045) were negatively associated with the PSS score.

Discussion

These results suggest that personality traits associated with perceived stress may differ according to subtype of mood disorder. Further, consideration on the difference of personality subtypes that affects perceived stress is probably needed to establish strategies for decreasing perceived stress in mood disorder.

COMPARISON OF ANXIETY PROFILES BETWEEN DEPRESSIVE PATIENTS WITH POSITIVE AND NEGATIVE SCREENING IN MOOD DISORDER QUESTIONNAIRE

Poster Presenter: Tae Uk Kang, M.D.
Lead Authors: Eunsoo Moon, M.D., Tae Uk Kang, M.D.
Co-Author(s): Tae Uk Kang, M.D., Eunsoo Moon, M.D., Je Min Park, M.D., Ph.D., Byung Dae Lee, M.D., Ph.D., Young Min Lee, M.D., Hee Jeong Jeong, M.D., Jeong Jin Lee, M.D., Kang Yoon Lee, M.D.

SUMMARY:

Background

Patients with bipolar disorder have high rate of comorbid anxiety disorders. However, there is lack of evidence about what the differences in anxiety profiles are between depressive patients with bipolar spectrum disorder and without Bipolar spectrum disorder. Mood Disorder Questionnaire(MDQ) has been accepted as a useful screening tool for Bipolar spectrum disorder.We aimed to compare anxiety profiles according to MDQ result in depressive patients.

Methods

We recruited one hundred and four patients who have experienced major depressive episode. Bipolarity was evaluated by using the Mood Disorder Questionnaire(MDQ). Anxiety symptoms were measured by using the Beck's Anxiety Inventory (BAI), the State Trait Anxiety Inventory (STAI), the Anxiety Sensitivity Index-Revised (ASI-R), the Penn State Worry Questionnaire (PSWQ), the Body Sensation Questionnaire (BSQ), the Acute Panic Inventory (API), the Korean Albany Panic and Phohia Questionnaire (K-APPQ), the Social Phobia Scale (SPS), the Maudsley Obsessional Compulsive Inventory (MOCI), the Interpersonal Sensitivity Measure (IPSM). Depressive symptoms were measured by using the Beck's Depression Inventory (BDI). The Anxiety profiles were compared between depressive disorder with bipolarity and without bipolarity using analysis of covariance(ANCOVA) in SPSS version 18.0, to adjust the influence of depressive symptoms.

Results

The patients with depressive disorders who screened positive on the MDQ showed higher ASI-R (fear of publicly observable anxiety reactions, fear of cognitive dyscontrol), MOCI (Chekcing, Doubting, total), IPSM (Interpersonal awareness, Need for approval, Separation anxiety, Fragile inner, total), API and BAI total scores than those with negative MDQ scores. (In the

order named, p=.005, p=.013, p=.036, p=.025, p=.035, p=.000, p=.001, p=.001, p=.039, p=.001, p=.043, p=.010)

Discussion
These results suggest that the presence of bipolarity in depressive patients accompanies different anxiety symptoms compared to the absence of bipolarity group. Especially, interpersonal sensitivity and anxiety sensitivity may be related to bipolar spectrum disorder. Therefore, using the MDQ for depressive patients can be supported and Further studies are needed to confirm the relationship between anxiety and bipolarity.

KEY WORDS : Bipolarity, Bipolar spectrum disorder, Anxiety, MDQ

MENTAL DISORDERS IN OFFSPRING OF PARENTS WITH BIPOLAR DISORDERS IN KOREA

Lead Author: Jong-myeong Kim
Co-Author(s): Hwa-Young Lee, Ph.D., Yong-Gi Kim, M.D., Han-Yong Jung, Ph.D., Min-Jae Kim M.D., Sung-Il Woo Ph.D., Sang-Woo Han, Ph.D.

SUMMARY:

Objectives
There is limited information on the specificity of associations between parental bipolar disorder(BPD) and the risk of psychopathology in their offspring. The chief aim of this study was to investigate the association between bipolar disorders in the parents and mental disorders in the offspring in Korea.

Methods
The sample consisted of 101 child and adolescent offspring (aged 6.0-18.9 years; meanÂ±S.D.=13.6Â±3.9 years) from 66 nuclear families with at least one parent with BPD (37 with BP-I and 29 with BP-II). Parents with BPD were recruited primarily through inpatient and outpatient clinics at department of Psychiatry, Soonchunhyang University Hospital between January 1, 2012, and December 7, 2013. Probands, offspring, and biological co-parents were interviewed by psychologists, using a semi-structured diagnostic interview and the offsprings were diagnostically evaluated using the Korean Kiddie-Schedule for Affective Disorder and Schizophrenia-Present and Lifetime Version(K-SADS-PL). The main outcome measures are from the Diagnostic and Statistical Manual of Mental Disorder(4th Edition) Axis I Disorder.

Results
59 of the 101 participants (58.4%) met the DSM-IV criteria for at least one psychiatric disorder, most commonly (38.0%) a mood disorder. Of these 59 children, 22 were diagnosed with BPD. 16 children received a diagnosis of any depressive disorder. The remaining 21 received other Axis 1 diagnoses, as follows: three were diagnosed with ADHD, mostly combined type; four with ADHD plus any anxiety disorder and one with ADHD plus DBD; Two with DBD alone; one with Tic disorder and one with Tic disorder plus ADHD; one with an autistic disorder; and one with schizophrenia plus anxiety disorder. 41(41.0%) of the children and adolescents did not receive any psychiatric diagnosis.
Comorbidity with ADHD was present in 12 (31.6%) of the 38 children with mood disorders, including those with BPD; one with ADHD plus any depressive disorders and 11 with ADHD plus BPD. In all 12 of these subjects, ADHD onset occurred at least one year before the onset of mood disorders. Comorbid anxiety disorders were found in 15 (39.5%) of these 38 children; 6 with anxiety disorder plus any depressive disorders and 9 with anxiety disorder plus BPD. In addition, comorbid DBD in 11 child (29.0%).
The mean age at onset of mood symptoms among the subjects with bipolar and major depressive disorder was 11.8Â±2.3 years. Specifically, the child with BPD type 1(n=1) developed her first mood symptoms at 8 years of age. Moreover, child with BD type I had episodic courses, exhibiting irritable or

elated moods during manic episodes, and had a prior history of psychiatric hospitalization.

Conclusions
Offspring of parents with BPD are at high risk for psychiatric disorders and specifically for early onset BP spectrum disorders. These findings further support the familiality and validity of BPD in youth and indicate the need for early identification and treatment.

CHILD MENTAL HEALTH AND JUVENILE DELINQUENCIES

Lead Author: Dohyung Kim, Ph.D.
Co-Author(s): Seong Ju Kim, M.D.

SUMMARY:

Using a nationally representative survey on U.S. children and young adults, we examine the consequences of mental health problems in childhood (age 4-12) on subsequent delinquency measured by lifetime criminal activities and illicit drug use by age 18. After controlling for family-specific unobserved factors as well as child-specific observed factors, we find that antisocial scores in childhood are strongly associated with lifetime arrest, probation, and incarceration as well as lifetime illicit drug use in adolescence. We also find that symptom scores for attention deficit/hyperactivity disorder are associated with lifetime victimization in physical attack and rape, but not with criminal activities or illicit drug use. Our results are robust in a model that allows comorbidity. Gender differences are inconspicuous in general although we find that anxious/depressed symptoms are often positively associated with delinquent outcomes only among females.

TREATING PSYCHOSIS IN A PATIENT WITH PARKINSONâ€™S DISEASE

Lead Author: Michael Marcus, M.D.
Co-Author(s): Sean Minjares, M.D., Geoffrey Phillips, M.D.

SUMMARY:

Introduction

Parkinson's Disease Psychosis (PDP) is a "syndrome of psychotic symptoms present continuously or intermittently over the course of a month in someone with idiopathic Parkinson's Disease who has no primary psychotic process." Some patients with PDP may have dementia, and some may take antiparkinsonian medications. In some instances, PDP is attributable to antiparkinsonian medications. PDP represents a challenge for providers due to antipsychotic selection. Current evidence suggests clozapine and quetiapine are both effective in treating PDP. Using this evidence, the authors of this case report present a patient with PDP who was treated with clozapine initially, and later quetiapine.

Case

The patient is a 65 year old male with Parkinson's Disease, PDP, and major neurocognitive disorder who was admitted to the inpatient psychiatric unit after he wandered from his home and had anger outbursts. He was continued on his antiparkinsonian medications including carbidopa 25 mg/levodopa 100 mg QID, ropinirole 2 mg TID, and rasagiline 1 mg daily. While on the inpatient unit, he displayed psychosis including visual hallucinations and disorganized speech. Due to continued psychosis, the patient was started on an antipsychotic. After ensuring his baseline labs were within normal limits, clozapine was started at 12.5 mg and this was gradually increased over multiple days to 37.5 mg. While the patient's psychosis appeared to improve gradually with this medication, he developed consistent tachycardia. As such, his clozapine was gradually tapered off. Due to the concerns that his antiparkinsonian medications could be worsening his psychosis, neurology was consulted to assess for the possibility of decreasing his dosages of these

medications. Neurology recommended that the patient continue rasagiline 1 mg daily, but to lower the carbidopa/levodopa to TID and the ropinirole to BID. After making these changes and discontinuing clozapine, the patient was started on quetiapine 12.5 mg TID. The patient showed good response to this dose and as such, the dose was increased to 12.5 mg QID. However, the patient had too much sedation during the day from this dose and as such, the evening doses were combined such that the patient received 12.5 mg QAM, QPM and 25 mg QHS. The patient's psychosis gradually improved with the quetiapine and he was discharged.

Discussion

The patient's psychosis appeared to improve with dose reductions of his antiparkinsonian medications as well as with clozapine and quetiapine; however, the patient was unable to tolerate the clozapine due to his tachycardia. Per the American Academy of Neurology (AAN), clozapine is deemed "probably" effective for PDP whereas the AAN states that quetiapine is "possibly" effective for PDP. Therefore, in patients with PDP, careful attention should be paid to the choice of antipsychotic as well as the patient's antiparkinsonian regimen.

NEW RESEARCH POSTER SESSION 2

SBIRT TRAINING IN HEALTH PROFESSIONAL EDUCATION- AN INTERDISCIPLINARY CURRICULAR APPROACH TO SUBSTANCE USE

Lead Author: Shilpa Srinivasan, M.D.
Co-Author(s): Suzanne Hardeman, N.P., David Murday, Ph.D., Rebecca Payne, M.D., Camille Wood, M.A.

SUMMARY:
Alcohol and drug use contribute significantly to morbidity, mortality, and economic burden in the United States. Up to 30% of adults use alcohol at unhealthy risk levels and 6-10% misuse illicit drugs or prescription medications. However, only 1 in 6 individuals are engaged by healthcare providers in discussions about drinking. Limited healthcare provider training and competing curricular demands potentiated by the absence of interdisciplinary coordination further contribute to the under-diagnosis and sub-optimal management of patients with risky or dependent levels of substance use. Effective interdisciplinary education is critical to address this unmet need. Screening, Brief Intervention and Referral to Treatment (SBIRT) is a brief, evidence-based model to efficiently identify, reduce, prevent, and manage problematic use of alcohol and drugs as well as substance use disorders. This poster describes a collaborative, interdisciplinary educational model where SAMHSA- developed SBIRT training was customized and delivered in health professional curricula for medical residency programs (Neuropsychiatry-NPSY, Family Medicine- FM, Internal Medicine- IM, and Preventive Medicine-PM) and graduate level nursing, social work and rehabilitation counseling programs.

Methods:
Using online instructional modules and faculty-facilitated skill-building opportunities (live-interactive skills assessment), health professional learners are trained to identify patients at risk for substance related disorders, utilize motivational interviewing techniques to conduct brief interventions, and identify the need for referral to treatment. Training materials are hosted on learning management platforms (Blackboard and New Innovations).
Demographic data was collected and pre- and post-training surveys of knowledge, attitudes, and confidence were administered.

Results:
To date, 195 trainees have completed SBIRT training, including 6 NPSY and 17

FM, PM, and IM residents, 102 social work, 52 nursing, and 18 rehabilitation counseling students. 72% of trainees were white, 25% African American and 3% Asian. Average age was 32 years. At baseline, residents self-reported more training and experience in alcohol and drug problems than other learners. Despite this difference, post-SBIRT training knowledge and confidence scores improved for medical residents as well as for trainees from the other disciplines with statistically significant differences ($p < 0.001$) for residents, nursing and social work learners.

Conclusions:
Interdisciplinary approaches using SBIRT can enhance healthcare provider knowledge and skill to identify and treat patients at risk for substance related disorders. Our approach has demonstrated effectiveness as an academic educational model. Next steps include engaging additional faculty/preceptors to ensure curricular sustainability to enhance patient care.

Funding: SAMHSA Grant: 1U79TI025374-01

THE SEVERITY OF ETHANOL WITHDRAWAL SCALE (SEWS) SIGNIFICANTLY IMPROVES SCALE-DRIVEN ALCOHOL WITHDRAWAL TREATMENT: A QA OUTCOME ASSESSMENT

Lead Author: Thomas Beresford, M.D.
Co-Author(s): Thomas Beresford, M.D., Melver Anderson, M.D., Francisco Maravilla, Benjamin Temple, Brenda Learned, RN, MHA, Zhibao Mi, Ph.D., Kim McFann, Ph.D., Brian Pitts, M.D., Brie Thumm, MSN, MBA, Jennifer Ratzlaff, MA, Brandon Schmidt, MA, Julie Taub, M.D.

SUMMARY:

Background: Up to nine million people in the US, or an estimated 3% of the total population, encounter the Alcohol Withdrawal Syndrome (AWS) at any point in time and a very small minority will receive systematic medical treatment. Of the total affected by AWS, about 5 to 7%, or from 450,000 to 630,000 people, will encounter seizures or Delirium Tremens (DTs). Untreated, the latter's mortality rate estimated at 10 to 15 percent accounting for about 45,000 to 94,500 deaths. Complicated AWS can be avoided or mitigated by early recognition and effective medication delivery.

Methods: When AWS treatment is available through scale-driven medication delivery, the CIWA-Ar is often used by default despite its relative clinical imprecision and cumbersome clinical rating properties. We developed the Severity of Ethanol Withdrawal Scale (SEWS) targeting early AWS recognition, scale-driven medication delivery, and ease of use. Put in place in our VA hospital, we collected prospective clinical data in a Quality Assurance assessment of both the SEWS and the CIWA-Ar. The primary outcome measure was time on AWS protocol. Associated pilot measures included total medication dose in the first 24 hours and during the total time on protocol per episode.

Findings: Mean times on protocol were 52.5 + 47.6 hours for SEWS ($n=244$) and 81.7 + 43.4 hours for CIWA-Ar ($n=137$) respectively ($p<0.0001$). Mean medication doses for SEWS-driven administration were twice those indicated by the CIWA-Ar, both within the first 24 hours ($p<0.01$) and during the total episode ($p<0.01$).

Interpretation: Improved clinical design resulted in the mean AWS course shortened by one hospital day on average. This was most likely due to the SEWS properties as a symptom scale that recognizes early AWS and drives front loaded medication treatment.

REDUCING SUBSTANCE INVOLVEMENT IN COLLEGE STUDENTS: A THREE-ARM PARALLEL-GROUP RANDOMIZED

CONTROLLED TRIAL OF A COMPUTER-BASED INTERVENTION

Lead Author: Roseli Boerngen-Lacerda, Ph.D.
Co-Author(s): Adriana de Oliveira Christoff, M.S.

SUMMARY:
The prevalence of alcohol and other drug use is high among college students. Reducing their consumption will likely be beneficial for society as a whole. Computer and web-based interventions are promising for providing behaviorally based information. The present study compared the efficacy of three interventions (computerized screening and motivational intervention [ASSIST/MBIc], non-computerized screening and motivational intervention [ASSIST/MBIi], and screening only [control]) in college students in Curitiba, Brazil. A convenience sample of 458 students scored moderate and high risk on the ASSIST. They were then randomized into the three arms of the randomized controlled trial (ASSIST/MBIc, ASSIST/MBIi [interview], and assessment-only [control]) and assessed at baseline and 3 months later. The ASSIST involvement scores decreased at follow-up compared with baseline in the three groups, suggesting that any intervention is better than no intervention. For alcohol, the specific involvement scores decreased to a low level of risk in the three groups and the MBIc group showed a positive outcome compared with control, and the scores for each question were reduced in the two intervention groups compared to baseline. For tobacco, involvement scores decreased in the three groups, but they maintained moderate risk. For marijuana, a small positive effect was observed in the ASSIST/MBIi and control groups. The ASSIST/MBIc may be a good alternative to interview interventions because it is easy to administer, students frequently use such computer-based technologies, and individually tailored content can be delivered in the absence of a counselor.

DEPRESSION AND ALCOHOL WITHDRAWAL SYNDROME: IS ANTIDEPRESSANT THERAPY ASSOCIATED WITH LOWER HOSPITAL READMISSION RATES

Lead Author: M. Caroline Burton, M.D.
Co-Author(s): Scott A. Larson, M.D.,Ph.D., Stephen S. Cha, M.S., Maria I. Lapid, M.D.

SUMMARY:
Background: Alcohol withdrawal syndrome (AWS) is a frequent cause of admission to acute care hospitals, and many of these patients have a history of depression. Studies have shown that depression is associated with acute care hospital readmission in patients whose index admission is for COPD exacerbation, coronary artery disease, heart failure, and stroke. Other studies have shown that depression is a risk factor in general for readmission to the general medical floor and to the intensive care unit.
Objective: Our objective was to determine if antidepressant use in patients with a history of depression and AWS is associated with lower rates of hospital readmission for AWS.
Methods: A retrospective study was performed of patients admitted with AWS between January 1, 2006 and December 31, 2008 to an academic tertiary referral hospital.
Results: Three hundred and twenty-two patients were admitted with AWS during the study period. One hundred and sixty-one patients (50%) had no history of depression, 111 patients (34%) had a history of depression and antidepressant use, and 50 patients (16%) had a history of depression and no antidepressant use. There was no significant difference in the number of hospitalizations for AWS between these three groups. Patients with a history of depression on antidepressant medication were more likely to be retired or work disabled compared to the other two groups ($p<0.05$). The antidepressant class most commonly used was SSRI (63%).

Conclusion: Our study highlights the high frequency of depression and antidepressant use in patients admitted with AWS to an acute care hospital. Further research is necessary to clarify the optimal treatment of comorbid depression and alcohol use disorder in reducing these revolving door admissions.

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REDUCING ADMISSIONS FOR ALCOHOL WITHDRAWAL SYNDROME

Lead Author: M. Caroline Burton, M.D.
Co-Author(s): Kimberly Carter, M.D., Stephen Cha, M.S., Scott Larson, M.D., Ph.D., Maria I. Lapid, MD

SUMMARY:

Background: Alcohol withdrawal syndrome (AWS) is a frequent cause of acute care hospital admissions and is associated with significant morbidity and mortality and high rates of recidivism. Factors associated with multiple admissions include psychiatric and medical co-morbidity, low education level, additional substance use and high CIWA-Ar score on admission. What happens to these patients upon discharge is also of interest in reducing admissions for AWS.

Methods: Patients included in the study were adults admitted with AWS to general medicine services and treated with symptom-triggered Clinical Institute Withdrawal Assessment-Alcohol Revised (CIWA-Ar) protocol between January 1, 2006 and December 31, 2008. Demographic and clinical variables including hospital follow-up was determined from review of the electronic medical record. Patients were divided into two groups, those with a single admission during the study period versus those multiple admissions. Multivariate logistic model analyses with stepwise elimination were used to identify risk factors that were associated with multiple admissions.

Results: The study population included 322 patients, 180(56%) patients had a single admission and 142(44%) patients had multiple admissions during the study period. With stepwise elimination, multivariate analysis showed in the final model that patients with multiple admissions were more likely to have a high school education or less ($p=0.0152$), a higher CIWA-AR (max) score ($p<0.0001$),), a higher Charlson comorbidity index ($p<0.0054$), a positive urine drug screen ($p=0.0003$), more psychiatric co-morbidity ($p=0.0003$) and less likely to attend an addiction treatment program ($p=0.0008$) or receive inpatient psychiatric care ($p<0.0001$) immediately following treatment of AWS. There was no statistically significant difference bewtween the two groups with respect to outpatient medical and/or psychiatric follow-up.

Conclusion: Following acute care hospitalization for AWS, immediate participation in an addiction program as well as inpatient psychiatric treatment may be more effective than either outpatient medical and/or psychiatric follow-up in decreasing acute care readmissions for AWS. What happens after discharge may be just as important as medical comorbidity, psychiatric comorbidity and education level in determining those patients at risk for these revolving-door

admissions. Prospective studies are needed to further characterize optimal follow-up care of patients requiring acute care hospitalization for AWS.

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A PILOT STUDY OF COERCION-DRIVEN TREATMENT OUTCOME OF SUBSTANCE ABUSERS WITH CO-OCCURRING PSYCHIATRIC DISORDERS WITH CRIMINAL HISTORY

Lead Author: Simon Chiu, M.D., Ph.D.
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SUMMARY:

Introduction: There is ample body of evidence to suggest that violence and criminality intersect in a complex manner substance abuse and co-ocurring psychiatric disorders. Very few studies examine the role of coercion in treatment outcome of engaging Substance use disorders with co-occurring psychiatric disorders (dual diagnosis DD) offenders in hospital-based DD program.
Methods: We analysed the data of 100 DD clients with current criminal history (DD+) and without criminal history (DD-) consecutively admitted to the specialized 28-day multi-modal program at a provincial psychiatric hospital in Southwest Ontario. DD clients were referred from probation officers, court diversion programs and forensic psychiatric units, as compared with CAP- clients from community mental health services. Formal Coercion strategies comprised probation terms, court diversion conditioning sentencing and forensic board review-board recommendations for drug abusing offenders with psychiatric co-morbidity . Outcome measures included random urine drug screen and retention rate, Clinical Global Improvement (CGI).
Results: In our study sample, we recruited 64 DD + and 36 DD- clients to our program. Assault was the commonest offense. Poly-substance dependence (cocaine, marijuana, alcohol) with multiple relapses and intoxication episodes distinguished DD + from DD - groups. No adverse events in group integration were found. The DD + group had statistically significant higher dropout rate and positive urine toxicological screen and lower CGI scores ($p < 0.05$).
Conclusion: Our findings provide marginal evidence in support of coercion in enhancing outcome in DD offenders. We suggest multi-functional treatment outcomes can be enhanced through integration care: forensic, mental health and addiction services and harmonizing contingency management with coercion strategies within the context of therapeutic jurisprudence.

DO SUBSTANCE USE DISORDERS MITIGATE OR AGGRAVATE INSANITY DEFENSES? PRELIMINARY FINDINGS FROM THE FORENSIC 100 STUDY .

Lead Author: Simon Chiu, M.D., Ph.D.
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SUMMARY:

Introduction::Criminal code of Canada stipulates Insanity Defense (Not-Criminal Responsible) on account of Mental Disorder (NCR-MD) however, the issue as to whether Substance Use mitigates or aggravates the insanity defense remains controversial. The objective was to review the links of substance use to criminal offenses in a cohort of forensic patients with serious psychiatric disorders in the context of NCR-MD adjudication.
Methods: We reviewed 100 clinical histories from patients admitted to Ontario Psychiatric hospital forensic program (St Thomas, Ontario) for Fitness-to-stand trial and NCR-MD assessments from l993-2001 (Forensic 100 study: Ontario). The Forsenci Data were extracted from police files, court proceedings, forensic psychiatric and substance use assessments., comprehensive clinical notes and judicial proceedings
Results: In our cohort, 23/100 (mean age: 38.2 yrs; male/female ratio 19/4) forensic psychiatric patients applied for NCR-MD after they were found fit to stand trial for various violent offenses : assault, murder, arson and robbery. The judicial adjudication accepted and agreed with the forensic psychiatric testimonial evidence (100 % concordance rate). Schizophrenia was most frequent psychiatric disorder (18/23) followed by bipolar and psychotic depression disorders (5/23). Alcohol and Cannabis Use disorders ranked highest in frequency of abuse. Substance use was closely related to the criminal offenses in 19/23 and unrelated in 4/23 cases. No single NCR-MD verdict was recommended on the exclusive criteria of substance-induced psychosis. Substance use appeared to aggravate violence episodes related directly to psychiatric disorders.
Conclusion: Our findings highlight substance use disorders interact with psychosis and violence in a bidirectional manner regarding NCR-MD adjudication. We suggest that integrating substance use rehabilitation can improve outcomes and reduce Violence Risk in dual diagnosis offenders.

RELATION OF CHRONIC MARIJUANA USE TO MOOD SYMPTOMS IN RECENTLY ADMITTED INPATIENTS CARRYING A UNIPOLAR, BIPOLAR OR PSYCHOTIC DISORDER DIAGNOSES

Lead Author: Michael Colin, M.D.
Co-Author(s): Igor Galynker MD,Ph.D, Elizabeth Chavez M.A., Zimri Yaseen MD

SUMMARY:

Background: As the use of Marijuana becomes legal, more socially acceptable and pervasive, a thorough investigation and consideration of the diverse properties and potential health hazards of the drug would be beneficial. This is particularly relevant to more vulnerable populations of users such as the mentally ill, who could potentially sustain a detrimental effect following use. In this study, our aim was to assess the relationship between the level of Marijuana use and the severity of symptoms of mania depression in psychiatric inpatients.
Methods: Data for this study is collected in a psychiatric inpatient unit. Patients are recruited by screening admission records for reports of Marijuana use from a diverse patient population in an urban inpatient unit, and stratified into individuals with bipolar disorder vs unipolar depression vs psychotic disorders based on diagnoses given by the primary treatment team using DSM IV-TR criteria. Inclusion criteria further involve subjects who had reported to have used Marijuana in the past six months. Young Mania Rating Scale (YMRS) is administered and the Beck Depression Inventory (BDI) is self-rated by patients to measure the extent of the symptoms of mania and depression in the participants. The Cannabis Use Disorder Identification Test (CUDIT) is self-reported by patients and is used to assess the level of cannabis use. Comparison of the correlation and significance between CUDIT and YMRS and BDI scores, respectively, for all cases

and within each of the diagnostic class are assessed.
Results: In the analysis, 54 subjects were evaluated, and no significant correlation was found between CUDIT and YMRS scores across any of the diagnostic classes. BDI scores for individuals with Bipolar disorder, when compared to CUDIT results also showed a small and insignificant correlation. However, our findings do show a significant positive correlation of BDI and CUDIT scores in individuals diagnosed with a psychotic disorder (r=.488, p=0.016). In individuals with unipolar depression, we found a moderate positive correlation that was not significant (r=.342, p=.333).
Discussion: These findings suggest that there is no relation between chronic MJ use and the severity of symptoms of mania in Bipolar, Unipolar or psychotic inpatients. The symptoms of depression appear to present more severely in psychotic patients and less so in patients with unipolar depression when these patients regularly use Marijuana. Depression symptoms do not appear more severe in bipolar patients who use Marijuana regularly. This may be clinically significant as it showcases the need to screen for and potentially treat depression in individuals who present with a psychotic disorder and who regularly use Marijuana.
Limitations: This study was done with patients in various stages of psychiatric stabilization and with varying degrees of presenting symptoms, therefore limiting our capacity to standardize our cohort.

COMORBIDITY AND TREATMENT UTILIZATION ASSOCIATED WITH 12-MONTH DSM-5 SUBSTANCE USE DISORDERS AND INDEPENDENT MENTAL HEALTH DISORDERS

Lead Author: Rise B. Goldstein, M.P.H., Ph.D.
Co-Author(s): Sharon M. Smith, Ph.D., Tulshi D. Saha, Ph.D., W. June Ruan, M.A., Boji Huang, M.D., Ph.D., Bridget F. Grant, Ph.D., Ph.D.

SUMMARY:
Background. The clinical complexity introduced by comorbidity of alcohol (AUDs) and drug use disorders (DUDs) with independent mood, anxiety, posttraumatic stress, and personality disorders is well documented. Previous general population research did not find substantial associations of comorbid 12-month DSM-IV AUDs and DUDs with treatment seeking for 12-month independent mood and anxiety disorders. However, for AUDs and DUDs, rates of most comorbid mood and anxiety disorders were 2 to 5 times higher among help seekers than among the total population of affected individuals. The publication of DSM-5 raises questions about how changes in diagnostic classification will affect treatment demand and specific components of service provision. This study examines associations of comorbid past-year AUDs and DUDs with help seeking for past-year independent mood, anxiety, and posttraumatic stress disorders; and of psychiatric comorbidity with help seeking for AUDs and DUDs.

Methods. Data were derived from the National Epidemiologic Survey on Alcohol and Related Conditions-III (NESARC-III), which surveyed 36,309 civilian, noninstitutionalized individuals 18 years and older in 2012-13. Diagnoses were generated and help seeking queried using the Alcohol Use Disorder and Associated Disabilities Interview Schedule-DSM-5 Version.

Results. Rates of treatment among individuals with past-year mood, anxiety, and posttraumatic stress disorders ranged from 10% (specific phobia) to 48% (panic disorder). Past-year treatment was associated with comorbid AUD for social and specific phobias, and with comorbid DUD for social and specific phobias and generalized anxiety disorder. Rates of help seeking were 8% for AUD and 13% for

DUD. Except for hypomanic episodes and specific phobia, help seeking for AUD was associated with all comorbid diagnoses examined. Help seeking for DUD was associated with major depressive, manic, and hypomanic episodes, agoraphobia, and schizotypal and borderline personality disorders. Sole reliance on 12-step programs accounted for 16% of total help seeking for AUDs and 11% for DUDs, whereas sole reliance on self-help/support groups, hotlines, or Internet chat rooms comprised under 5% for other examined disorders except social phobia.

Conclusions.

Associations of comorbidity with help seeking emphasize the need for comprehensive clinical assessment and attention to all identified disorders. While evidence demonstrates the benefits of participation in 12-step programs, including among individuals with comorbid mental health and substance use disorders, the prevalence of sole reliance on 12-step programs suggests exploration of approaches to ensure that comorbid individuals, particularly those solely utilizing 12-step groups with a single focus on substance use disorders, get mental health needs fully met.

MEMORY REACTIVATION UNDER PROPRANOLOL REDUCES CRAVING IN ADDICTION: A PILOT STUDY

Lead Author: Michelle Lonergan, M.Sc.
Co-Author(s): Daniel Saumier, Ph.D., Jacques Tremblay, M.D., Ph.D., Brigitte Kieffer, Ph.D., Thomas Brown, Ph.D., Stefanie Brideau, B.A., Alain Brunet, Ph.D.

SUMMARY:

Substance dependence is a chronic, treatment-resistant psychiatric disorder characterized by a continuous cycle of remission and relapse. According to the learning model of addiction, persistent and maladaptive drug-related memories are hypothesized to underlie craving and the subsequent long term propensity for addicted individuals to relapse, even after protracted abstinence. Previous literature suggests that administering propranolol, a synthetic noradrenergic beta-blocker, in conjunction with a brief memory retrieval procedure abolishes drug-seeking behavior in rodents, as well as craving and physiological arousal to drug-cues in human clinical populations. In this report, we present preliminary results of a pilot randomized placebo-controlled trial investigating this procedure, referred to as reconsolidation impairment, as an adjunct treatment for a variety of addictions. Seventeen eligible treatment-seeking substance dependent participants were randomized to receive 6 treatments of propranolol or placebo prior to reading a personalized script detailing a drug-using experience. Subjective craving was measured using reliable and valid self-report questionnaires, such as the Cocaine Craving Questionnaire-Now version. Results from a 2X2 ANCOVA with drug group as the between factor, pre-post craving scores as the within factor, and baseline craving as a covariate revealed that subjective craving was significantly attenuated in the propranolol group ($p < .005$; $d = 1.40$), but not the placebo group (p = ns; $d = .06$), by the end of the six-session treatment protocol. Conclusion: The adjunct experimental treatment of reconsolidation impairment using propranolol can be successfully incorporated into ongoing inpatient and outpatient addiction treatment programs. Side effects of the medication were mild and included nausea and fatigue on treatment days. Despite the small sample size and lack of follow-up evaluation, preliminary results are encouraging and highlight the need for larger randomized-controlled trials of reconsolidation impairment using propranolol in this treatment-resistant population. The authors discuss the implication of these findings from a clinical research perspective.

OPIOID OVERDOSE EDUCATION IN A SUBURBAN COMMUNITY TREATMENT PROGRAM

Lead Author: David Lott, M.D.
Co-Author(s): Ashley Forrest, M.A.

SUMMARY:

Introduction

Opioid overdose mortality rates have risen significantly in the US, with much of the increase occurring in suburban communities. Naloxone, which can reverse overdose, has been identified as an important intervention to address this problem. Recent studies have evaluated opioid users on their knowledge of overdose signs and risks and naloxone use, showing that education improves these measures. However, prior research sampled mostly non-treatment seeking users from lower socioeconomic groups. In addition, although emergency personnel are now trained in more communities to carry and use naloxone, education and distribution in treatment settings has faced opposition.

Hypothesis

We predict that opioid overdose education in a suburban middle class treatment program will provide measurable improvement in overdose knowledge in this high risk population.

Methods

This study examines the effect of an opioid overdose education program on overdose knowledge in a day treatment center, where usual treatment includes 12-step facilitation, cognitive behavioral therapy, and motivational enhancement therapy. A specialized education group was added to the existing program, based on the New York State Department of Health's opioid overdose guidelines. The Opioid Overdose Knowledge Scale (OOKS) was administered before and after the educational training to assess knowledge of the risks, signs, and actions associated with opioid overdose, as well as the appropriate use of naloxone. Subjects (n=22), recruited from the treatment group of opioid use disorder patients, were 30% female and had a mean age of 32.5 years. Scores on the OOKS and its subdomains were compared using t-tests.

Results

Total score on the OOKS increased significantly from pre- to post-education ($p<0.0001$). OOKS subdomains of actions and naloxone use also had significant increases ($p<0.005$).

Conclusion

Education about opioid overdose and naloxone use is effective in a suburban middle class community treatment program in increasing overdose knowledge.

Discussion

Increasing opioid overdose mortality requires the development of new interventions and ways to reach target populations effectively. This study shows a positive effect from overdose education in a high risk population, providing additional support for the routine use of overdose education in substance use disorder treatment settings.

OPIOID WITHDRAWAL SEVERITY, DRUG USE, AND OUTPATIENT INDUCTION ONTO XR-NTX TREATMENT

Lead Author: Paolo Mannelli, M.D.
Co-Author(s): Kathleen Peindl, Ph.D., Li-Tzy Wu, Sc.D.

SUMMARY:

INTRODUCTION

Opioid withdrawal intensity and drug use may significantly contribute to the failure of antagonist treatment of opioid use disorder (OUD). We compared the time course of withdrawal and drug use among OUD individuals who completed outpatient extended release naltrexone (XR-NTX) induction with those of patients who discontinued treatment.

METHODS

Treatment-seeking individuals with moderate to severe OUD were given decreasing doses of buprenorphine with increasing doses of naltrexone during a 7-day outpatient XR-NTX induction procedure. Withdrawal discomfort and drug use were assessed daily until the XR-NTX injection and compared between completers and non-completers controlling for baseline features.
RESULTS
No significant differences in socio-demographic or clinical characteristics, and in-treatment measures of withdrawal intensity and drug use were found between patients who received XR-NTX (N=24), and those who did not complete induction (N=8). The positive outcome was associated with a significantly higher withdrawal score at admission [Beta= 0.263 (0.114), Wald 5.35 (1), p= 0.02, 95% CI 1.020-1.570].
CONCLUSIONS
Pre-treatment conditions, in particular the degree of opioid withdrawal discomfort, may affect LNTX-BUP outpatient induction to XR-NTX. Further studies are warranted to identify factors that may contribute to successful induction to NTX and improve antagonist treatment of OUD.
Financial support and XR-NTX injections were provided through an Investigator-Initiated Trial Grant from Alkermes, Inc.

HISTORY OF A USE OF NOVEL PSYCHOACTIVE SUBSTANCES IN A SAMPLE OF YOUNG PSYCHIATRIC PATIENTS: AN OBSERVATIONAL STUDY

Lead Author: Giovanni Martinotti, M.D., Ph.D.
Co-Author(s): Giovanni Martinotti, M.D., Ph.D., Tiziano Acciavatti, M.D., Rita Santacroce, M.D., Matteo Lupi, M.D., Eleonora Chillemi, Psy.D., Marco Di Nicola, M.D., Ph.D., Luigi Janiri M.D., Massimo Di Giannantonio, M.D.

SUMMARY:

Objective: Comorbidities between psychiatric diseases and consumption of traditional substances of abuse (alcohol, cannabis, opioids, and cocaine) are common. Nevertheless, there is no data regarding the use of novel psychoactive substances (NPS) in the psychiatric population. The purpose of this multicenter survey is to investigate the consumption of a wide variety of psychoactive substances in a young psychiatric sample.
Methods: A questionnaire has been administered, in different Italian cities, to 510 psychiatric patients aged 18 to 26 years and to a sample of 500 healthy control subjects matched for sex, gender, and living status.
Results: Alcohol consumption was more frequent in the healthy young population compared to age-matched subjects suffering from mental illness (82.5% versus 71.7%; P< 0.003). Conversely, cocaine and NPS use was significantly more common in the psychiatric population (cocaine 9.4% versus 3.9%; P = 0.002) (NPS 9.8% versus 3%; P< 0.001). Synthetic cannabinoids (5.8%), Methamphetamine (3.8), Gamma-Hydroxy-Butirrate (1.9), and Salvia Divinorum (1.2) were the most commonly used NPS in the clinical sample.
Conclusions: The use of novel psychoactive substances in a young psychiatric population appears to be a frequent phenomenon, probably still underestimated. Therefore, careful and constant monitoring and accurate evaluations of possible clinical effects related to their use are necessary.

SUBSTANCE MISUSE IN ACUTE PSYCHIATRIC ADMISSIONS OF YOUNG ADULTS

Lead Author: Muhammad I. Naeem, D.P.M., M.B.B.S., Psy.D.

SUMMARY:

Background:
A high proportion of persons presenting with cooccuring psychiatric disorders and substance misuse has been demonstrated by investigators in many parts of the world including United Kingdom. Comorbidity

poses special clinical problems and treatment difficulties. Management of such comorbidities is a challenge for service providers and urges them to come up with special measures to tackle the problem.
Objectives:
This study focuses on an inpatient psychiatric sample to find out the prevalence of alcohol and substance misuse. The charachteristics of patients with or without associated substance misuse are studied.
Methods:
The patients admitted for psychiatric inpatient treatment in Metropolitan Borough of Solihull over a specified period of 3 months were the subjects. Patients' demographic data and the given ICD-10 diagnoses were recorded. Every patient was assessed by giving Brief Symptom Inventory (BSI), CAGE, AUDIT and CIDI-SF questionnaires.
Results:
Ninety seven patients (between the ages of 16 and 65) were interviewed with most frequent diagnoses of Depressive Episode and Paranoid Schizophrenia. Bipolar Affective Disorder was the second group of the study sample. Forty four individuals (45.4%) were identified with hazardous alcohol intake by using AUDIT. Drug misuse was present in twenty four (24.70%) of the participants of the study. Young male subjects were at highest risk of having substance misuse problems.
Conclusions:
The prevalence of Alcohol and Drug misuse is high in psychiatric inpatients. The problem of severity of symptoms with frequent need to use the mental health services by these patients incur an increased financial burden on the service providers. A need for the development of further specialised services for this particular group of patients having dual diagnoses was identified.

ROLE OF ZIPRASIDONE IN CANNABIS-INDUCED PSYCHOTIC DISORDER

Lead Author: Debanjan Pan, D.P.M.

Co-Author(s): Amarnath Mallik, D.P.M., Dr Malay Sarkar, M.D., Dr Shyamal Chakraborty, D.P.M.

SUMMARY:
Introduction: Cannabis abuse disorder can take up various forms, each of them represented and coded separately in DSM V. Of them, cannabis-induced psychotic disorder is not uncommon and a lot of antipsychotics have been in use in clinical practice to address the problem.
However, there has been limited data of trials with Ziprasidone in similar cases. Ziprasidone is an atypical antipsychotic agent with a unique combination of pharmacological activities at CNS receptors with a low propensity for extrapyramidal side effects, cognitive deficits and weight gain.

Objective and Aims: This study aims to understand any possible role of Ziprasidone in patients of cannabis-induced psychosis.

Methods: We recruited 20 patients of cannabis-induced psychotic disorder as per DSM V criteria, coded 292.9 (equivalent representation of the same at ICD 9) into the study and randomly divided them into 10 each of 2 groups, Group A and Group B and administered Ziprasidone (mean dosage 80mg/day in this study) and Placebo respectively for the two groups and then followed up for 6 months. All patients were assessed for their psychotic symptoms before and after the study, using Brief Psychiatric Rating Scale (BPRS) and then statistically analysed.

Result: Gr A patients, overall, showed better response (at least 50%reduction in BPRS score from the baseline in all patients) in comparison to the Gr B patients in terms of their psychotic symptoms as we could analyse from the mean t-score measurement difference between the two groups before and after the study. Significantly, Ziprasidone was very well

tolerated with very few adverse effects and there was no drop out.

Discussion: While several antipsychotic drugs have already been proven beneficial in the treatment of cannabis-induced psychotic disorder, many of them have troublesome side effects and even some of them, like Risperidone has actually been found to increase craving for cannabis in some patients, as available literature suggests. However, Ziprasidone, because of its overall favourable pharmacological profile might be a very useful drug in such cases.

PRESCRIPTION OPIOID AND BENZODIAZEPINE MISUSE IN DELAWARE

Lead Author: Iman Parhami, M.D., M.P.H.
Co-Author(s): Jonathan "Kevin" Massey, Imran Trimzi M.D., Gerard Gallucci M.D.

SUMMARY:
Although opioids and benzodiazepines are among the top psychoactive medication classes misused (taken for a purpose other than the reason prescribed), providers still prescribe them commonly. According to a recent CDC report, over 80 and 35 prescriptions per 100 persons in the United States are dispensed for opioids and benzodiazepines, respectively. In addition, many are prescribed medications from both classes together, increasing the risk to experience the associated repercussions, such as respiration depression and death. The poster will present a brief review of prescription opioid and benzodiazepine co-misuse and discuss data from Delaware's Prescription Drug Monitoring Program (PDMP). In 2013, 347,930 individuals filled prescriptions in Delaware, and approximately, 42,364 (twelve percent) filled prescriptions for benzodiazepines and opioids in the same calendar quarter (Table 1). Most of those that filled prescriptions for both opioids and benzodiazepines were aged between 51-75 years old (47%) and male (66%). In 2012, there were more than 90 opioid prescriptions per 100 persons (ranked 17th highest in the US). There were also 21.7 prescriptions per 100 persons for long-acting / extended-release opioid pain relievers (ranked 2nd highest in the US) and 8.8 per 100 persons for high-dose opioid pain relievers (ranked 1st highest in the US). Additionally, there were 41.5 prescriptions per 100 persons for benzodiazepines in Delaware. In conclusion, data suggest a significant number of individuals receive both opioids and benzodiazepines in Delaware and are at high risk to experience significant repercussions. Stakeholders can use this data to help promote safer prescribing patterns among providers.

GENDER DIFFERENCE OF PERCEIVED STRESS, COPING, SOCIAL SUPPORT, ANGER, ALEXITHYMIA AND DEPRESSION IN THE KOREAN ADOLESCENT WITH INHALANT ABUSE

Lead Author: Min Cheol Park, M.D., Ph.D.
Co-Author(s): Hye-Jin Lee, Ph.D., Sang-Yeol Lee, M.D., Ph.D.

SUMMARY:
Objective: The aim of this study was to investigate the difference of gender in terms of perceived stress, dysfunctional attitude, self-efficacy, social support, coping style, alexithymia and anger in the Korean adolescent with inhalant abuse and the difference of gender regarding which factors predict the depression of adolescent with inhalant abuse.
Methods: In the 3 juvenile correctional facilities, 123 male and 53 female adolescent with inhalant abuse were sampled, and the all adolescent were administered semi-structured interview schedule and scales for the perceived stress, dysfunctional attitude, self-efficacy, social support, coping style, alexithymia, anger and Beck Depression Inventory(BDI). The data were analyzed by t-test and multiple regression analysis.
Results: There was no significant difference in the ages and education level. There were significant difference in perceived stress,

self-efficacy, avoidant coping, anger control between male and female adolescent with inhalant abuse, but there was no significant difference in dysfunctional attitude, social support, BDI, alexithymia, cognitive and behavioral coping, state and trait of anger, anger expression and inhibition between them. The score of BDI were 18.7+8.7 male and 21.2+8.4 female. In multiple regression model, anger inhibition, perceived stress, dysfunctional attitude, and cognitive coping accounting for 37.7% of the depression in male; only alexithymia, and anger inhibition accounting for 19.9% of the depression in female.
Conclusion: The finding suggest that there are gender differences in factors that can mediate stress, and in factors regarding predict the depression between male and female adolescent with inhalant abuse.

THE URGE TO DRINK: CORRELATES OF ALCOHOL ABUSE AMONG A PSYCHIATRIC INPATIENT SAMPLE

Lead Author: Mariela Reyes, B.A.
Co-Author(s): Afshan Ladha, M.A., Firouz Ardalan, Thachell Tanis, Igor Galynker, M.D., Lisa J. Cohen, Ph.D.

SUMMARY:

Comorbid alcohol abuse among psychiatric populations can impact illness course and treatment outcome. It is worthwhile therefore to investigate the correlates of problematic alcohol use, as high prevalence rates continue to exist among this population. Data was collected from a sample of 159 psychiatric inpatients on a range of psychological and interpersonal factors, including attachment style, childhood trauma history, expression of anger, as well as behavioral inhibition and activation as measures of impulsivity. Alcohol abuse was assessed by the CAGE questionnaire. Bivariate Kendall Tau_b correlations revealed two significant relationships: anger expressed outward and the CAGE total score r (N =158) = .214, p < .001 and anxious-preocupied attachment and CAGE Total score r (N =133) = .174, p < .013. Multivariate stepwise linear regression with backwards elimination method yielded a significant final model with outward expressed anger, behavioral inhibition, and childhood physical abuse as significant individual predictors of CAGE total score F (3, 128) = 7.849, p <.001 . Anger expressed outwards was positively correlated and self-reported childhood physical abuse and behavioral inhibition negatively correlated with alcohol abuse. These findings are consistent with previous literature documenting a relationship between impulsivity and substance abuse. The negative correlation of the CAGE with childhood physical abuse was surprising, and may be related to the correlation between physical abuse and fearful attachment style. Such an attachment style is often associated with high internalization of emotions and avoidance of conflict. The current study underscores the importance of attending to impulse control, emotion regulation, and alcohol abuse among psychiatric patients.

BARRIERS TO MENTAL HEALTHCARE FOR MENTALLY ILL PHYSICIANS IN THE UK

Lead Author: Tariq Hassan, M.B.B.S.
Co-Author(s): Syed O. Ahmed, Alfred C. White, Niall Galbraith

SUMMARY:

Introduction:

One in four people in the UK suffer from a mental illness.1
Although doctors are generally physically healthier than the general
population they have higher rates of mental illness and suicide.
2â€“4 Stigma to mental health and by extension to mental
health services is a barrier for doctors being assessed and treated
for a mental illness. With the adage 'doctors make the worst
patients' this is an especially potent issue in spite of various antistigma

campaigns. The literature in this area is primarily based
on doctors with an active mental illness, substance misuse, anxiety
and depression.5â€“7 There are no studies encompassing all
specialties that have sought doctors' views regarding disclosure
and treatment if they became mentally ill. For this study the
views of doctors on the prevalence of mental illness, their preference
for disclosure, and treatment should they develop a
mental illness in addition to their own experiences of mental illness
were studied.

Method
A postal survey of 3,512 doctors in
Birmingham was carried out to assess attitudes to
becoming mentally ill. The response rate for the questionnaire
was 70% (2,462 questionnaires).

Results:
In total, 1,807
(73.4%) doctors would choose to disclose a mental illness
to family and friends rather than to a professional. Career
implications were cited by 800 (32.5%) respondents as
the most frequent reason for failure to disclose. For outpatient
treatment, 51.1% would seek formal professional
advice. For inpatient treatment, 41.0% would choose a
local private facility, with only 21.1% choosing a local
NHS facility. Of respondents 12.4% indicated that they
had experienced a mental illness. Stigma to mental health
is prevalent among doctors.

Conclusions:
At present there are no clear guidelines for doctors to follow for mental healthcare.
Confidential referral pathways to specialist psychiatric care
for doctors and continuous education on the vulnerability
of doctors to mental illness early on in medical training is
crucial.A greater emphasis is required to educate doctors on mental
health and the provision of an option to confidentially refer
themselves to mental health teams. Doctors are reluctant to
utilise occupational health services for fear that they will be seen
as a problem that is best removed rather than rehabilitated.
Similarly with the GMC, the association of reporting mentally ill
doctors with disciplinary measures could be revisited with a separate
more humanistic approach â€“ a return to the previous
system. Trusts should develop clear protocols for the records of
healthcare professionals and access should potentially be
restricted. The common pathway into NHS psychiatric services
remains via the GP which, according to this study, most doctors
may avoid.

THE STIGMA-DISCRIMINATION COMPLEX ASSOCIATED WITH MENTAL DISORDER AS A RISK FACTOR FOR SUICIDE: A SYSTEMATIC REVIEW

Lead Author: Edwin Herazo, M.D., M.Sc.
Co-Author(s): Adalberto Campo-Arias, M.D., MSc

SUMMARY:
Background: Around the world the stigma-discrimination complex associated with mental disorder (SDCAMD) is one of the most frequent. Internalized and perceived SDCAMD may explain a number of suicide cases; however, it has been little studied the SDCAMD as a risk factor for suicide.

Objective: To review the association between SDCAMD and suicide (2000-2014).
Method: A systematic review was carried out including researches from January 2000 to June 2014. Stigma, mental disorder and suicide were used as key words. Descriptive review was done.
Results: Two studies were identified. The SDCAMD increased the risk of suicidal behaviors. It was evident that people who meet criteria for mental disorder (OR=2.3, CI95% 1.3-4.1); and people reported high self-stigma committed a greater number of suicide attempts and countries with high SDCAMD in the general population (Beta standardized=0.46).
Conclusions: The SDCAMD is an understudied variable that could explain a significant number of suicide cases. Further researches are necessary to deep knowledge in this association. Also, SDCAMD must be considered when designing and implementing suicide preventive actions and public policies.
Keywords: Social stigma; social discrimination; suicide; review.

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INHALED LOXAPINE FOR THE CONTROL OF AGITATION: RESULTS FROM A NATURALISTIC LONGITUDINAL STUDY.

Lead Author: Pedro M. Sanchez Gomez, M.D.
Co-Author(s): Edorta Elizagarate, M.D., Jesus Ezcurra, M.D., Ana B. Yoller, M.D., Juan Larumbe, M.D., Rafael Garcia, M.D., Blanca Revuelta, M.D., Esther Ibarrola, M.D., Natalia Ojeda, Ph.D., Javier Pena, Ph.D., Koldo Callado, M.D.

SUMMARY:

Background: The DSM-5 defines psychomotor agitation as excessive motor activity associated with a feeling of inner tension. In patients with schizophrenia or bipolar I disorder, agitation may escalate along a continuum of severity over time. There are few therapeutic options to control and reduce the levels of agitation back to normal in individuals with schizophrenia or bipolar disorder: verbal de-escalation, oral medication and intramuscular medication. Inhaled loxapine is a typical antipsychotic recently approved for the acute treatment of agitation associated with schizophrenia or bipolar I disorder in adults. Efficacy was demonstrated in 2 trials in acute agitation: one in schizophrenia and one in bipolar I disorder. Methods: This is a prospective, repeated measures, naturalistic, open-label study to assess the efficacy of inhaled loxapine in a sample of 20 consecutive agitated patients with schizophrenia or bipolar disorder, admitted at a psychiatric hospital. Measures were taken at minute 2, 10, 30, 60, 120, and 360. Efficacy was measured as change from baseline in the PANSS-EC and CGI-S scales score. Response time was measure as the time needed to achieve a score of 1 or 2 on the scale CGI-I. Patient and Nurses satisfaction measures were also taken.
Results: Reduced agitation, as reflected in PANSS-EC score, was evident 2 minutes after first dose in the majority of patients. In addition, efficacy was evident for all assessment times in the 24 hours after the first dose. Inhaled loxapine produced significant improvement of agitation in both scoring endpoints.
Conclusion: This study, conducted in a sample of consecutive "real-world", inpatients with schizophrenia or bipolar disorder replicates the results achieved in the two clinical trials conducted so far. We

observed and onset of action faster than that obtained in these clinical trials. Inhaled loxapine seems to have a faster onset of action than oral medication and it carries no negative connotations for the patient in terms of coercion or side effects.

HIGHER NEOPTERIN BUT NOT CRP LEVELS IN T. GONDII SEROPOSITIVE OLD ORDER AMISH

Lead Author: Prital Desai, M.D., M.P.H.
Co-Author(s): Prital Desai, M.D., Maureen Groer, Ph.D., Mary A. Pavlovitch, M.S., Braxton D. Mitchell, Ph.D., Adem Can, Ph.D., Soren Snitker, M.D., Alan R. Shuldiner, M.D., Teodor T. Postolache, M.D.

SUMMARY:

Background: Toxoplasma gondii (T. gondii) is a widespread parasite associated with schizophrenia, bipolar disorder, personality disorders and traits of aggression/impulsivity, and suicidal behavior across diagnostic boundaries. The behavioral effects of T. gondii have been attributed to either direct effects of the parasite (reactivation, dopamine production) or to immune activation. C-reactive protein, a global marker of inflammation often investigated in neuropsychiatric conditions, and neopterin, a more specific marker of T-cell induced macrophage activation (centrally implicated in T. gondii immunity) have been previously evaluated in T. gondii infection but the results have been inconsistent. Nonspecific causes of immune activation such as smoking, alcohol intake and low prevalence of T. gondii infection may have contributed to results heterogeneity. The aim of this study was to investigate the relationship between T. gondii seropositivity and levels of CRP and neopterin in the Old Order Amish, a population with a more homogenous genetic background, lifestyle and very low rates of smoking and alcohol intake.

Methods: Participants included 107 individuals (77.5% women, average age 54.04) from the Old Amish sect, a culturally homogenous Caucasian population of Central European ancestry. All participants were analyzed for their seropositivity to T. Gondii infection and levels of neopterin and C-reactive protein. Only 26.3% were T. gondii negative, with 9.3% equivocal and 64.4% positive. The right-tailed distribution of both neopterin and CRP levels imposed log transformations. T-tests and ANCOVAs were used to compare T. gondii positives and negatives for logCRP and logneopterin levels respectively, with and without adjustment for age.

Results: T. gondii seropositives had significantly higher levels of logneopterin but not logCRP when compared to T. gondii negatives, with and without age adjustment ($p<0.05$).

Limitations include potentially a lower generalizability as well as not having analyzed other inflammation markers.

Conclusions: Seropositivity of T. gondii is associated with elevated levels of plasma neopterin. Considering that neopterin is a marker of cellular immunity and oxidative stress, future studies on neuropsychiatric disorders and behavioral dysregulation in patients with chronic neurotropic infections should include its measurement for prediction, mediation and moderation purposes.

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THERAPEUTIC DRUG MONITORING (TDM) OF VALPROATE AND CARBAMAZEPINE USING SALIVA AS MATRIX.

Lead Author: Pankaj Lamba, M.B.B.S., M.D.

Co-Author(s): Varma Penumetcha, M.D., Naga Kothapalli, M.D., Piyadarsha Amaratunga, Ph.D., Fadi Matta, M.D., Bridget Lemberg, Ph.D., Chandra Lake, C.C.R.C., Leslie R. Mahlmeister, M.B.A., Samuel Wedes, M.D., Nabila Farooq, M.D.

SUMMARY:
INTRODUCTION: Therapeutic Drug Monitoring (TDM) is a routine clinical practice for titrating and monitoring drug levels of carbamazepine and valproate (metabolite of divalproate) while reducing the chance of toxicity. Currently, TDM is performed by measuring the level of drug in the plasma/serum.

Oral fluid sampling (OFS) for quantitative measurement of drugs in saliva could provide an alternative matrix for TDM. There are many advantages to using salivary fluid â€“ the collection is easier, non-invasive, painless, and the method requires minimal training. Further, in the salivary fluid the drugs are present in the free form (not protein-bound and available for activity). Thus the measurement of salivary concentration has advantages, especially for carbamazepine and valproate which are extensively bound to plasma proteins (75 â€“ 85%).

However, for the OFS to be useful clinically, studies need to be performed to determine the level of the drugs in saliva and their correlation to actual blood level. The studies for carbamazepine have been successful but laboratories have failed to accurately measure valproate. However, over the last decade, due to technological advancements, saliva collection and analysis has become more reliable, allowing measurement of smaller amounts of drugs with greater sensitivity. Thus, we are performing a pilot study to assay valproate level using OFS. The assay is performed using liquid chromatography coupled with tandem mass spectrometry (LC-MS/MS) technique. Carbamazepine has been included in the study as an established comparator.

METHODS: Adults patients (18-79 years) admitted to the inpatient psychiatry unit at our hospital, excluding pregnant women and those who cannot provide consent, receiving divalproex sodium or carbamazepine, are provided an opportunity to participate in the study. The oral samples are collected using the QuantisalÂ® collection kit within 10-15 minutes of blood for TDM. The blood samples are analyzed for total and free serum level of drug at our hospital and OFS are sent to Forensic Fluids Laboratories. Data will be analyzed using SPSS Version 19. Linear regression analysis will be performed and correlation coefficient will be calculated. Two-tailed P values < 0.05 will be considered statistically significant.

RESULTS: The study protocol has been approved by Institute Review Board of Saint Joseph Mercy Health System. Sample collection is under way and the preliminary results are significant for carbamazepine and valproate. The data on the ease of salivary collection and patients' perspective on the method are also being gathered during the study.

DISCUSSION: Valproate is commonly used drug and blood levels are needed in order to adequately titrate and avoid toxicity. Thus, there is a need for studying alternative matrix like salivary fluid which could allow more easy and economical determination of drug level and improve its safety profile.

ELUCIDATING THE ROLE OF 5-HT1A PARTIAL AGONISM IN VILAZODONEâ€™S ANTIDEPRESSANT EFFICACY

Lead Author: Eduardo D. Leonardo, M.D., Ph.D.
Co-Author(s): Alvaro Garcia-Garcia, Ph.D., Gila Pilosof, Ph.D., Pradeep Banerjee, Ph.D.

SUMMARY:

Introduction: Vilazodone blocks serotonin reuptake in addition to acting as a partial agonist at 5-HT1A receptors. Interestingly, 5-HT1A receptors function as autoreceptors on serotonergic neurons in the raphe, where they regulate serotonergic tone, and exist as heteroreceptors on non-serotonergic neurons where they mediate a hyperpolarizing response to serotonin. However, it is not well understood whether vilazodone's partial agonist effects play a role in its antidepressant effects, although synergy between its serotonin reuptake inhibition and 5-HT1A partial agonism is expected to occur in producing antidepressant efficacy.

Hypothesis: We hypothesize that treatment with vilazodone differs from treatment with SSRIs in mouse behavioral paradigms of depression/anxiety that require chronic administration, such as in the mouse novelty suppressed feeding (NSF) model. Specifically, we hypothesize that vilazodone will have a more rapid onset of action than SSRIs without 5-HT1A effects and will generate antidepressant-like response in animals insensitive to SSRIs.

Methods: The NSF paradigm has been demonstrated to be sensitive to chronic but not acute or subchronic administration of SSRIs. We tested whether vilazodone (10 mg/kg, PO; QD for 8 or 28 days) exerts its antidepressant effects at an earlier timepoint than fluoxetine (FLX) (20mg//kg, PO; QD for 8 or 28 days) in the 129SvEv mouse NSF model. Furthermore, we have previously demonstrated that mice with relatively higher levels of 5-HT1A autoreceptors (Hi mice) do not respond to FLX under conditions that elicit a response in animals that have lower levels of autoreceptors (Low mice). Thus, we tested the antidepressant effects of vilazodone (10 mg/kg, PO, QD for 8 or 28 days) and FLX (20mg/kg, PO; QD for 8 or 28 days) in 5-HT1A Hi mice using the NSF paradigm.

Results: In the 129SvEv mouse NSF model, vilazodone but not FLX significantly decreased the latency to eat after only 8 days of treatment. Both vilazodone and FLX had an effect after 28 days of treatment. In addition, as expected, FLX did not exhibit antidepressant effect in 5-HT1A Hi mice but vilazodone produced efficacy in these mice at both the early (8 days) and late time points (28 days).

Conclusions: In the NSF paradigm, vilazodone exerts an earlier effect when compared to the SSRI FLX and is efficacious in a strain of mouse that is resistant to SSRIs. These results suggest that vilazodone's antidepressant effect may not be attributed exclusively to its SSRI properties and that the 5-HT1A partial agonist properties likely contribute to its therapeutic effect. Supported by funding from Forest Laboratories, LLC, an affiliate of Actavis, Inc.

MEN AXILLARY EXTRACTS MODIFY PLATELET SERT AND IMPULSIVITY IN WOMEN

Lead Author: Donatella Marazziti, M.D.
Co-Author(s): Armando Piccinni, Antonello Veltri, Stefano Baroni

SUMMARY:

The aim of this study was to assess the possible changes of a peripheral marker of the serotonergic system, i. e., the platelet 5HT transporter, and of some psychological tests, in a group of women who were exposed to men axillary extracts (group 1), as compared with a matched group of women who underwent an exposure to a neutral solution (group 2). The 5-HT transporter was evaluated by means of the specific binding of 3H-paroxetine (3H-Par) and of 3H-5-HT reuptake in whole platelets, at baseline (T0) and one hour after the stimulation (T1). The following tests were used: the "Experiences in Close Relationships" Questionnaire (ECR) and the latest version of the Barratt Impulsiveness

Scale (BIS-11. The dissociation constant (Kd) values of 3H-Par binding showed a significant decrease at T1 only in the women exposed to men axillary extracts, as compared with baseline values, while the Bmax values and 3H-5-HT reuptake parameters did not show any change in both groups. The correlation analyses showed that at T0, the Kd values correlated significantly and positively with the factor of motor impulsiveness in all subjects. Two factors of the BIS-11, in particular, the attentional and the motor impulsiveness were significantly lower at T1 in the group 1. Further, at T1 and still in the group 1, a significant and positive correlation was measured between the Kd values and two ECR attachment styles, the secure and preoccupied, as well as with the ECR anxiety scale.

Taken together, these findigs suggest that the application of male armpit extracts to women may modify the affinity of their platelet 5-HT transporter, as well as of some impulsivity and romantic attachment characteristics. The substance (or substances) responsible for this effect should be yet identified

L-METHYLFOLATE, FOLINIC ACID, AND FOLIC ACID AND REPORTED IMPROVEMENTS IN FATIGUE IN DEPRESSED PSYCHIATRIC OUTPATIENTS WITH MTHFR-VARIANT GENOTYPES

Lead Author: Arnold W. Mech, M.D.

SUMMARY:

Purpose of the Study

Clinical dietary management with medical prescriptive foods has emerged as an essential management tool for physicians and patients. Molecular genetic testing has made an entry into everyday clinical practice helping healthcare providers individualize treatment based not only on reducing symptoms with prescription medications but addressing underlying causes.

60% of the general population have variant alleles for methylene teterahydrofolate reductase (MTHFR) gene.[1] MTHFR is crucial to the synthesis of all neurotransmitters. In fact, 70% of patients with mood symptoms have either a heterozygous or homozygous C677T allele substitution. Individuals with these genotypes are less able to convert folate B vitamins efficiently to their methylated, reduced forms. [2] This step is necessary to enable passage across the blood-brain barrier for use in the production of neurotransmitters. [3]

Fatigue can be a presenting symptom in psychiatric patients being treated for depression and variety of co-occurring disorders. Treatment outcomes may benefit from a better understanding of how the administration of a combination of methylated folic acid, folinic acid and folic acid may improve fatigue.

Methods

In an effort to assess the degree to which fatigue and resultant emotional dysregulation might be improved, a medical prescriptive food with 15 mgs. of L-methyl folic acid, in addition to folinic acid and folic acid was added in an open-label fashion to the treatment regimen of 60 depressed outpatients. These outpatients were selected in a neuropsychiatry clinic for testing positive for one or two C677T allele MTHFR single nucleotide substitutions. Patients took the supplement in an open label manner for 4-weeks. Pre- and post-treatment levels of fatigue were obtained per standard clinic protocol using the Fatigue Assessment Scale (FAS) [4] and levels of emotional dysregulation (difficulties in frustration tolerance and impulse control) with the Mech Emotional Dysregulation Inventory (MEDI). [5]

Summary

Most patients (44 or 73.3%) reported their fatigue was significantly improved. This was demonstrated on the Fatigue Assessment inventories completed by patients pre- and post-treatment with methylated B vitamin administration where patients reported

improvements in sleep quality with a 22% reduction in fatigue based on Fatigue Assessment Scale pre-treatment responses and a 41% reduction in related emotional dysregulation (i.e., impaired frustration tolerance and impulse control) on the Mech Emotional Dysregulation Inventory.
Conclusions
This study suggests that adding methylated B vitamins may be helpful in reducing reported fatigue in depressed psychiatric outpatients who have tested positive for either heterozygous or homozygous MTHFR single nucleotide substitutions. Further studies are needed with polysomnography to better understand specific effects on N3 slow-wave sleep and on rapid eye movement (REM) sleep.

ALL ABOUT THE BASE: HOW COMMON ARE ABNORMAL PHARMACOGENETIC VARIANTS FOUND IN AN OUTPATIENT MENTAL HEALTH SETTING?

Lead Author: Jeffrey M. Turell, M.D., M.P.H.
Co-Author(s): John Skalla, M.S., Jennifer Coleman, M.S.

SUMMARY:

Background: When treating mental illness, many pharmacologic options are available. Treatment guidelines exist, but the patient's response to any given medication is influenced by his/her pharmacokinetic profile, which is genetically determined. Such information, previously unavailable, led to a trial-and-error approach of prescribing medication in order to determine response and tolerability. With the advent of pharmacogenetics, a saliva test can identify the genetic variant for the P-450 enzymes, whether they are of normal, reduced, or increased rate of metabolism. Reduced metabolism of a medication may result in greater side effects, and increased metabolism may require higher doses to achieve treatment results. Additionally, folic acid metabolism can be tested by the genetic variant of the MTHFR gene, whether of normal, reduced, or greatly reduced activity. Reduced MTHFR activity results in reduced folic acid production, which can be supplemented. The question remains, how frequent are these genetic variants found in a community mental health setting, given the cost of testing ranging from $400 to $1,400? Methods: To answer this question, pharmacogenomics testing was initiated at a private outpatient mental health practice. Informed consent was obtained. Saliva specimens were collected by an employee of the testing laboratory following the office visit, and then mailed to the laboratory in California for analysis. Results were faxed back to the office, reviewed with the patient at the next visit, and entered into a database as de-identified data. Data captured included age, gender, cytochrome 2C19, 2D6, and UGT-2B15 activity, and MTHFR activity. No financial benefit was derived by the patients, practice, or study authors. The participating laboratory billed the patient's insurance directly for the testing. Results: At the time of analysis, 154 patients had been tested for 2C19, 149 for 2D6, 119 for UGT-2B15, and 64 for MTHFR. Mean age was 51 years old; 58% of the respondents were female. For 2C19, only 37% of patients had normal metabolism, with 33% low or reduced metabolism, and 30% with rapid metabolism. For 2D6, 82% of patients had normal metabolism, while 17% was low or reduced metabolism, and 1% rapid metabolism. For UGT-2B15, only 21% of patients had normal metabolism, while 79% had low or reduced metabolism. For MTHFR, 53% of patients had normal activity, while 47% had reduced or greatly reduced activity. Of note, for MTHFR, all 6 of the patients with greatly reduced activity were female. Conclusion: Genetic differences for pharmacologic and folic acid metabolism vary in our population. Even for 2D6, nearly 20% of the patients had abnormal metabolism. For 2D6 and UGT 2B15 the proportion of abnormalities was greater, at 63% and 79% respectively. Nearly half of the sample tested had reduced folic acid metabolism. These

results can provide clinical guidance for optimized treatment in outpatient settings.

ARE THERE COGNITIVE CONTROL IMPAIRMENTS IN EARLY ADULTHOOD FOLLOWING EXPOSURE TO FAMILY-FOCUSED CHILDHOOD ADVERSITIES?

Lead Author: Nicholas D. Walsh, Ph.D.
Co-Author(s): Tim Dalgleish, Ph.D, Valerie Dunn, M.Sc., Ian M. Goodyer, M.D.

SUMMARY:
Exposure to childhood adversities (CA) is associated with greater risk for psychopathology in adolescence and adulthood. However at present the neurocognitive and neurobiological mechanisms mediating this exposure-outcome pathway are currently uncertain. One hypothesis may be that exposure to CA disrupts the development of adaptive, regulatory cognitive control processes. The aim of the current study was to therefore investigate whether such hypothesized cognitive control processes are disrupted in CA exposed individuals, and if so, the specific nature of the processes that are impaired. In this study, effects on behavior and brain function, were investigated using fMRI in a cross-sectional study of youth recruited from a population-based longitudinal cohort (Walsh et al. 2010; 2012). 58 currently well participants, matched for SES and IQ (mean age = 18.4) with (n = 27) or without (n = 31) CA exposure measured retrospectively from maternal interview were included in the study. Measures of recent negative life events (RNLE) recorded at 14 and 17 years, current depressive symptoms, gender, participant psychiatric history, current family functioning perception and 5-HTTLPR genotype were used as covariates in analyses. Between group differences in outcome retrieval, anticipation and feedback cognitive control processes were examined using a previously published task (Walsh and Phillips 2010). Outcome measures were accuracy, reaction time (RT) and BOLD response. The results showed the CA-exposed group had significantly more lifetime diagnoses of psychiatric disorder, and significantly higher negative current perceptions of family functioning. Analyses of task performance revealed no between group differences in accuracy across any task condition. CA exposure was associated with a CA by anticipation condition interaction upon RT. Both groups showed an opposing quadratic pattern of RT as a function of the anticipation delay internal (varying from 2-6s). No differences were evident for the outcome retrieval or feedback conditions and there were no effects of the covariates upon behavioral performance. This finding demonstrates a specific difference in anticipation related cognitive control processes in CA exposed individuals. We will present the neuroimaging findings in the poster presentation. In summary, these new data, from a well-controlled, population-representative sample, advance understanding of the behavioral phenotype of CA-exposed individuals. The implications of this work is that anticipation-related temporal processes may be affected following CA-exposure. This work further specifies the neurocognitive mechanisms by which CA exposure may lead to psychopathological outcomes in later life.

ENHANCED EMOTION REGULATION AND ITS NEURAL SUBSTRATES IN ADOLESCENTS EXPOSED TO FAMILY-FOCUSED CHILDHOOD ADVERSITIES

Lead Author: Nicholas D. Walsh, Ph.D.
Co-Author(s): Susanne Schweizer Ph.D; Jason Stretton M.Sc, Valerie Dunn M.Sc, Ian M. Goodyer MD, Tim Dalgleish Ph.D

SUMMARY:
Difficulties in emotion regulation (ER) is a putative risk and maintenance factor associated with many forms of psychopathology. Previous findings have suggested that exposure to childhood adversities (CA) influence ER subsequently in adolescence and adulthood. In this study we aimed to clarify this association by

investigating the effects of exposure to common, family-focused CA on ER in later adolescence at both the behavioral and neural level. A population-representative sample of participants (N=53), from a longitudinal cohort were recruited for the study. Functional magnetic resonance imaging, in conjunction with a film-based ER task allowed the evaluation of ER and of emotional reactivity in participants. Our results show that CA-exposure was associated with better ER over both positive and negative affect. In contrast reactivity appeared unrelated to CA-exposure. At the neural level, the better ER aptitude over negative material observed in individuals exposed to CA was associated with more efficient recruitment of ER-related brain regions, including the prefrontal cortex (PFC) and temporal gyrus. Additionally CA-exposure was associated with a greater down-regulation of the amygdala during ER to negative material. This data further advance our understanding the effects of common, family-focused forms of CA-exposure upon emotion regulation in adolescence. Such data has implications for our understanding of the emergence of resilience in CA-exposed adolescents. Such understanding may then inform the design of future mental health treatment and prevention strategies.

SUITABILITY AND TOLERABILITY OF MINDFULNESS-ORIENTED INTERVENTIONS IN OLDER AND YOUNGER PSYCHIATRIC INPATIENTS: A PILOT STUDY

Lead Author: Katerina Nikolitch, M.D.
Co-Author(s): Natalie Strychowsky, BSc, Ching Yu, MD, MSc, Vincent LalibertÃ©, MD, MSc, Marilyn Segal, MD, Karl Looper, MD, MSc., Soham Rej, MD, MSc.

SUMMARY:

Introduction:
Mindfulness-based interventions have gained increasing popularity in recent years; however, formal therapy, including mindfulness-oriented modalities, is rarely offered to acutely hospitalized psychiatric inpatients. Very little data is available on the feasibility of therapeutic interventions on psychiatric wards, and nearly none on the suitability and tolerability of mindfulness-oriented interventions in psychiatric inpatients. Moreover, it is unknown which factors contribute to inpatients being able to engage and benefit from mindfulness-oriented therapy during psychiatric hospitalization.

Methods:
Using retrospective data from a sample of acutely-hospitalized psychiatric inpatients, we examined the potential predictors of tolerating mindfulness-oriented interventions offered on the ward (Body Scan, Tai Chi, and Mindful Eating). Sessions lasted 10 minutes. Patients were given a brief questionnaire pre- and post-session, containing a simplified Mood Likert scale on 1-10, as well as questions on thoughts and emotions. Verbal comments made to the therapist and/or during discussion, and whether a patient was able to stay until the end of the intervention, were also recorded. Demographic and diagnostic variables, including, age, sex, marital status, length of admission, days on the ward to first intervention, primary diagnosis, comorbid psychiatric diagnoses (including personality traits or disorders), and medical comorbidities were collected via chart review. Associations of tolerability via Chi-squared Test for nominal variables and Mann-Whitney U Test for nonparametric continuous variables.

Results:
40 patients took part in the offered mindfulness interventions. Average age was 51.9 and 62.5% (n=25) were over age 50. Average length of admission was 50.1 days and mean admission length prior to first intervention was 27.4 days. Half of the patients tolerated the interventions (50%, n=20). This outcome was not associated with any diagnostic or demographic variable, including primary and comorbid

psychiatric diagnosis ,length of admission prior to participating, and medical comorbidities.

Conclusions:
This is the first study to assess factors that may impact the suitability and tolerability of mindfulness-oriented therapy in acutely hospitalized psychiatric patients. Overall, brief mindfulness-oriented interventions can be well-tolerated by acutely ill psychiatric inpatients. Age did not affect suitability and tolerability, indicating that mindfulness-oriented therapy can also be offered to psychiatric inpatients aged >50. In clinical practice, offering a non-pharmacological intervention is frequently questioned if a patient is recently hospitalized and not yet stabilized. Our data indicate that patients can tolerate and benefit from brief mindfulness-oriented therapy. Perhaps most importantly, patients with psychosis (the majority of our sample) may also be suitable candidates for such interventions.

INTERNET-ASSISTED COGNITIVE BEHAVIOURAL THERAPY FOR ADULTS COMPARED TO TRADITIONAL CBT IN A CANADIAN HOSPITAL OUTPATIENT SETTING

Lead Author: David G. Gratzer, M.D.
Co-Author(s): Faiza Khalid-Khan, MSW, RSW, Sarosh Khalid-Khan, MD, DABPN, Nazanin Alavi, MD, Ettsa Papalazarou, MSW, RSW

SUMMARY:
Introduction: Cognitive Behavioural Therapy (CBT) is a popular and widely used therapy well supported in the literature. For example, CBT is as effective for mild and moderate depression as antidepressant medications; studies have suggested that combined psychopharmacology and CBT is superior to either modality alone, suggesting a synergistic effect. However, CBT requires a major investment of time and resources. Thus, in public and private systems, CBT has limited availability and is often subject to waiting times; primary care physicians and psychiatrists may not offer CBT.

Can technology address the lack of CBT? Internet therapies have been developed, including for CBT. Internet-assisted CBT allows patients to receive on-going CBT with easier and quicker access, and at reduced cost. Relatively little work, however, has looked at directly comparing CBT with Internet-assisted CBT in a hospital outpatient setting.

Methods: The Scarborough Hospital â€“ a Toronto, ON, hospital serving a diverse urban population â€“ provides CBT groups for individuals suffering from anxiety and/or depression. In this study, partnering with Queen's University, we give participants the choice between the Internet-assisted CBT and (traditional) group CBT sessions over an 8-week period. All patients are assessed using several scales, including "DASS 21" and "Sociodemographic Questionnaire" before and after the 8-week therapy.

On each online session, patients are provided with general information on a specific topic, an overview of helpful skills, and homework sheets that directly correspond with how a traditional group therapy session is carried out at The Scarborough Hospital. Participants are asked to send their homework sheet back to the therapist on a specific day (via email). The therapist then responds on another specific day, providing them with feedback, the new information sheets, and homework (all via email).

Results: Data is entered into a separate database (in Excel format). We then use ANOVA to compare the 2 groups looking at results of the above scales, assessing the effectiveness of the Internet-assisted CBT compared to the traditional CBT group. In a 12 month period, we will have around 40 patients in each group.

Conclusion: Though well established in terms of efficacy, CBT is often unavailable to people with mood and anxiety disorders. Barriers for traditional CBT include geography and resource availability, but also patient limitations: such as physical health issues (pain), psychiatric issues (anxiety in working in groups), as well as work and family obligations.

Internet-assisted CBT offers people convenient and cost-effective treatment â€“ though our study suggests that drop-out rates are problematic. Moving forward, strategies to address drop-out rates are key in successfully utilizing Internet-assisted CBT in a real-world, outpatient setting.

PROBLEMATIC INTERNET USE: RESULTS FROM AN INTERNET-BASED SURVEY

Lead Author: Michael Van Ameringen, M.D.
Co-Author(s): William Simpson, B.Sc., Beth Patterson, M.Sc., Jasmine Turna, B.Sc.

SUMMARY:

Background: Internet addiction, is a term describing pathological, compulsive internet use and has an estimated prevalence of 6% among the general population and higher in students. The Internet Addiction Test (IAT) was developed in 1998, prior to the wide-spread use of Smartphone and other mobile devices, to detect internet addiction. It is unclear whether this instrument is capableof capturing problematic modern internet use. An online, was conducted to examine the prevalence of problematic internet use.
Method: A link to a survey inviting people to take an internet addiction test was posted on the centre's website in August 2014, www.macanxiety.com. Following acknowledgment of a disclosure statement, participants were asked to follow a link and complete a short demographics questionnaire as well as a survey containing the IAT, as well as sections from the Mini International Neuropsychiatric Interview for OCD, GAD, SAD, the Barkley Adult ADHD Rating Scale, the Barratt Impulsiveness Scale, the Depression, Anxiety and Stress Scale (DASS-21), and the Sheehan Disability Scale (SDS). Once the survey was complete, respondents were informed of their score and interpretation on the IAT.
Results: The sample was 60% female with a mean age of 31.7 Â± 13.2 years. Most were single (61%) with a university education (56%); 44% had not had mental health treatment. Most (92%) owned a Smartphone, which was the main internet point of access for 76%. Half the sample reported spending â‰¤3 h/day in essential online time (i.e. for work or study); 17.6% spend â‰¥6 h/day. For non-essential online time, 39% spent â‰¤3 h/day and 33% spent â‰¥6 h/day. Online gaming was reported by 38% (â‰¤3 h/day); 77% spent â‰¤3 h/day streaming; 56% spent â‰¤3 h/day messaging. Most (71%) scored in the "mild internet use" range of the IAT; 13% moderate use; 1% severe use. DSM-IV criteria was met for GAD (32%), OCD (14%) and SAD (12%). Mean SDS score was 9.7Â±8.1, indicating no significant impairment; DASS-21 scores indicated mild depression (5.9 Â± 5.7). All other scales and subscales were within normal range. A linear regression analysis revealed that IAT score accounted for 26% of the variance in SDS scores $F=35.7$, $p<.001$, making it the single largest contributor to functional impairment in a model which included IAT score, DASS-21 score, time spent online and diagnostic status. Symptoms of depression and level of stress and time spent online were also significant contributors to functional impairment ($p = 0.01$).
Discussion: Although individuals in this sample spent a high proportion of waking time online, the prevalence of problematic internet use was low. However, higher use of internet was positively correlated with functional impairment, independent of diagnostic status and current symptoms of depression, anxiety and stress.

MAKING THE CUT: DEPRESSION SCREENING IN A CULTURALLY DIVERSE URBAN LATINO POPULATION

Lead Author: Mary Conlon, M.D.
Co-Author(s): Mary Conlon, M.D., Carole Siegel, Ph.D., Gary Haugland, M.A., Joe Wanderling, M.A.

SUMMARY:
Objectives: Evidence suggests differences in the prevalence and presentation of psychiatric illnesses among Latino subgroups. To date, all studies aiming to validate the use of the PHQ9 in Latino populations aggregate subgroups in their analysis. As use of screening cut-points that are not subgroup specific could lead to misdiagnosis and improper treatment, our study aimed to determine whether the widely used PHQ9 cut-point to identify MDD (10, 88% sensitivity (Sn), 88% specificity (Sp)) is equally valid for Mexicans (M), Ecuadorians (E) and Puerto Ricans (P) compared to non-Latino Whites (W). The influence of situational features (e.g. socioeconomics, acculturation, trauma) on screening results was also examined.
Methods: Bellevue Hospital Center provides primary care for a culturally diverse inner city population. M, E and P are the predominant Latino subgroups. Patients are systematically screened for MDD using a 2-step process (Whooly screener followed by PHQ9). Our sample (261 patients) was comprised of the Latino subgroups of interest (75M, 71E, 51P) and a Non-Latino White control group (64W). All patients with PHQ9 scores in the 8-12 range and a smaller percentage with scores higher or lower were interviewed with the SCID depression module to establish a DSM-4 diagnosis of MDD. For analysis purposes, statistical adjustments were made so that scores of the SCID sample reflected the PHQ9 score distribution found in the general clinic population. The adjusted sample was used to determine the diagnostic cut-point for MDD that maximized Sn and Sp compared to the gold standard SCID for each subgroup. A Situational Features Questionnaire was also administered.
Results: A diagnostic cut-point of 13 maximized the sum of Sn and Sp for the PHQ9 to accurately identify cases of MDD for the M (76% Sn, 81% Sp), E (73% Sn, 71% Sp) and P (81% Sn, 63% Sp) Latino subgroups. Cut-point 14 maximized Sn and Sp (76%,78%) for the non-Latino W group. The widely used cut-point 10 had low Sp in all groups resulting in unacceptably high false positive rates. High rates of stressful life events including trauma was a common feature in all groups studied. A mild correlation between stressors and PHQ9 scores existed.
Conclusions: Our results suggest that 1)when a two step screening procedure is used, the widely used cut-point may be inappropriate and 2)in low SES ethnically diverse Latino and White populations with high levels of trauma and stressful life events, a similar cut-point may be applicable.
Implications: Our findings are provocative as the PHQ9 has been widely integrated as a depression screener and treatment-monitoring tool with cut-point 10 used as a diagnostic and treatment threshold. High false positive rates may result in misdiagnosis and improper treatment with antidepressants, which can also have economic impact. Caution may be needed when screening lower SES populations with high levels of trauma and stressful life events for MDD using the PHQ9.

REDUCTION IN PROBABILITY OF RELAPSE IN PATIENTS WITH SCHIZOPHRENIA TREATED WITH PALIPERIDONE PALMITATE IN OUTPATIENT FACILITIES

Lead Author: Carmela J. Benson, M.S.
Co-Author(s): Paul Juneau, MS, Carmela Benson, MS, MSHP, Xue Song, PhD, John Fastenau, RPh, MPH

SUMMARY:
Objective: For individuals suffering with schizophrenia in the US, community

behavioral health organizations (CBHOs) are the primary point of contact with the healthcare system. CBHOs are the interface between primary care and mental health treatment and play an essential role in the treatment and management of patients with schizophrenia. Although, such outpatient facilities play a critical role, there is paucity of data evaluating patient outcomes in this setting. Our study estimated the probability of relapse in patients diagnosed with schizophrenia treated with paliperidone palmitate long-acting injection (PP) or oral atypical antipsychotic (OAT) in CBHO setting.

Methods: This analysis used the final REACH-OUT 12-month data of patients with schizophrenia treated with either PP or OAT. REACH-OUT patients treated with PP that were not successfully matched with the REACH-OUT OAT were matched with the supplemental OAT from MarketScanÂ® claims database following the Stuart and Rubin multiple control group technique. The number of relapse events (NRE) was defined as the total number of psychiatric or all-cause hospitalizations, visits to emergency departments (ED), crisis centers and assertive community treatment (ACT). An indicator for relapse was defined if NRE>0. A logistic regression modeled the probability of relapse and the mean NRE was estimated using Poisson regression. Wilxocon-Rank Sum test tested the differences in probabilities and mean NRE between PP and OAT.

Results: The final matched cohort included a total of 258 pairs of PP and OAT patients. The two cohorts were comparable based on the following baseline factors: age (P=0.30), gender (P=0.92), Medicaid (P=0.10), Medicare (P=0. 27), private insurance (P= 0.33), hypertension (P=0.68), high cholesterol (P=0.60), heart disease (P=0.12), diabetes (P=0.72), lung disease (P=0.37), overweight (P=0.72), smoking (P=0.85), alcohol use (P=0.65), drug use (P=0.68), inpatient admissions (P=0.35), ED visits (P=0.12), ACT (P=0.68), and number of relapse (P=0.12). In the 12-months follow-up period, a significantly lower probability of relapse was observed in PP vs OAT patients (0.32 vs 0.47; P<0.001). The estimated mean number of relapse was also significantly lower in PP vs OAT (-0.11; P<0.001).

Conclusions: The results suggest a potential long-term benefit from PP based on reduced probability of relapse and mean NRE. An economic model estimating the impact of reduced probability of relapse on total healthcare cost in patients treated with PP in the outpatient setting is warranted.

NORADRENERGIC AND ANXIETY SYMPTOMS AND FUNCTIONAL IMPAIRMENT IN ADULT PATIENTS WITH MDD: POST HOC ANALYSIS OF 5 CLINICAL TRIALS OF LEVOMILNACIPRAN ER

Lead Author: Pierre Blier, M.D., Ph.D.
Co-Author(s): Carl Gommoll, M.S., Changzheng Chen, Ph.D.

SUMMARY:

Background:Major depressive disorder (MDD) is characterized by symptoms that can impede a patient's ability to function. While some symptoms are associated with decreased serotonergic activity (eg, anxiety, irritability), others may be more related to deficits in noradrenergic (NA) activity (eg, fatigue, lassitude, anhedonia). Post hoc analyses of data from 5 randomized, double-blind, placebo (PBO)-controlled studies of levomilnacipran extended-release (LVM ER; 40-120 mg/d) were conducted to explore the relationship between these symptoms and functional impairment.

Methods:The post hoc analyses included 2 cluster scores, defined as the sum score of individual MADRS and HAMD items: NA Cluster (MADRS items 6 [Concentration Difficulties], 7 [Lassitude], 8 [Inability to Feel]; HAMD items 7 [Work/Activities], 8 [Retardation], 13 [General Somatic Symptoms]); and Anxiety Cluster (MADRS item 3 [Inner Tension]; HAMD items 9 [Agitation], 10 [Psychic Anxiety], 11

[Somatic Anxiety]). Changes from baseline in NA and Anxiety Cluster scores were analyzed at end of treatment based on the least squares mean difference (LSMD) between treatment groups; Cohen's d formula was used to estimate treatment effect sizes. The odds ratio (OR) and 95% confidence interval (95% CI) for response, defined as â‰¥50% improvement from baseline in NA or Anxiety Cluster score, was analyzed using a logistic regression model. To explore the relationship between symptom improvement and functional outcome, change from baseline in Sheehan Disability Scale (SDS) total score was analyzed in NA and Anxiety Cluster responders who received LVM ER; statistical testing between responder groups was not conducted.
Results:In the overall population (N=2598), patients receiving LVM ER vs PBO had significantly greater improvement in NA Cluster (LSMD=-1.61, P<.0001, d=0.25) and Anxiety Cluster (LSMD=-0.51, P<.0001, d=0.13) scores. Response rates were also significantly higher with LVM ER vs PBO (NA Cluster: 43.5% vs 33.5%, OR=1.56, 95% CI=1.32-1.84; P<.0001); Anxiety Cluster: 39.2% vs 35.6%, OR=1.19, 95% CI=1.01-1.40, P=.041). SDS total score change with LVM ER was numerically greater in NA Cluster vs Anxiety Cluster responders (-14.1 vs -13.3), but smaller in NA Cluster vs Anxiety Cluster nonresponders (-4.0 vs -5.4).
Conclusions:Adults with MDD who received LVM ER vs PBO had significant symptom improvements as measured by NA and Anxiety Cluster scores. SDS total score change with LVM ER was greater in NA Cluster responders than in Anxiety Cluster responders; opposite results were seen in nonresponders. These results suggest that in patients treated with LVM ER, substantial reduction of NA or anxiety symptoms may be associated with improvements in functional impairment; however, resolution of NA symptoms relative to anxiety symptoms may be more important in improving functional impairment. Future research is warranted. Supported by funding from Forest Laboratories, LLC, an affiliate of Actavis Inc.

ASSESSMENT OF DEPRESSIVE SYMPTOMS IN MDD CLINICAL TRIALS ACROSS THE LIFESPAN: CLINICAL TRIAL MEASUREMENT OF ADULT MDD

Lead Author: Joan Busner, Ph.D.
Co-Author(s): Stuart A. Montgomery, M.D.

SUMMARY:

Background: Accurate and consistent assessment of symptoms of major depressive disorder is imperative in major depressive disorder (MDD) clinical trials efforts. Measures such as the Montgomery Asberg Depression Rating Scale (MADRS) (1) and Hamilton Depression Rating Scale are gold standard efficacy tools in FDA MDD trials. Considerable training effort is devoted to standardizing raters so as to reduce error variance and improve accurate measurement of symptoms. Similar to efforts we have conducted in child and adolescent depression with the Children's Depression Rating Scale-Revised (2), we examined training and certification data from 6 large adult MDD clinical trials programs of 5 separate sponsors to determine whether particular MADRS items could be identified based on higher scoring variability.

Method: 6 patient video interviews were viewed by a total of 1259 US raters in 6 large MDD clinical trials programs. Some raters may have participated in more than one study. The videos were viewed following training as part of a certification exercise for each study prior to a rater being allowed to rate actual study patients. Standard deviations of each of the 10 MADRS items were computed separately for each video, and rank ordered from lowest to highest separately for each video. To identify particular items of difficulty across videos, cross-video agreement in standard deviation rankings was computed using Kendall W.

Results: Per-item standard deviation rankings were statistically dissimilar across videos (Kendall W = 0.0105, NS). Across videos, per-item standard deviations did not suggest particular challenges for any one item over another.

Conclusions: Unlike our recent work using the Children's Depression Rating Scale-Revised (CDRS-R), which has found certain items to be persistently challenging regardless of particular patient presentation (3), MADRS item variance across 6 distinct patient videos did not suggest rater challenges for any one item. The findings are encouraging, and suggest that clinical trials raters in adult depression studies can be trained to rate each of the 10 items concordantly despite patient differences in symptom presentation.

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VORTIOXETINE PROMOTES EARLY INCREASES IN DENDRITIC LENGTH AND SPINE FORMATION COMPARED TO FLUOXETINE - AN IN VIVO STUDY OF RAT HIPPOCAMPAL CA1 REGION

Lead Author: Fenghua Chen, M.D., Ph.D.
Co-Author(s): Fenghua Chen, M.D., Ph.D., Jens Randel Nyengaard, M.D., DMSc., Jessica A. Waller, Ph.D, Connie Sanchez, Ph.D, Gregers Wegener, M.D., DMSc.

SUMMARY:
Background: Accumulating evidence from neuroanatomical studies suggests that mood disorders are associated with decreases in dendritic branching complexity and spine density in cortico-limbic brain structures, and that antidepressant treatment can reverse these changes. Furthermore, preclinical studies have shown an increase in dendritic spine density after the induction of long-term potentiation (LTP), a cellular correlate of synaptic plasticity thought to be essential for memory and learning. Preclinical studies of the multimodal-acting antidepressant vortioxetine show that treatment enhanced LTP and dendritic branching compared to selective serotonin reuptake inhibitors (SSRI) [1,2]. Here we investigated the effect of vortioxetine and the SSRI fluoxetine on dendritic spine morphology in the rat brain.
Hypothesis: Vortioxetine treatment will have an enhanced effect on the formation of dendritic spines compared to fluoxetine.
Methods: Male Sprague Dawley rats housed under standard conditions were dosed for 7 days with vortioxetine (in chow) or fluoxetine (in drinking water) at doses producing full occupancy of the serotonin transporter. Dendritic morphology, i.e., total length of dendrites, mean dendritic branch length, total number of spines, spine density and a 3-dimensional Scholl analysis was studied in Golgi stained sections from the CA1 region of the hippocampus. Each treatment group consisted of 12 rats and 16 neurons were sampled per brain.
Results: Compared to control rats given regular chow and drinking water, vortioxetine-treated rats showed a statistically significant increase in the number of spines per neuron in apical and basal dendrites, in the density of spines per neuron in the basal dendrites and in the length of dendrites per neuron in apical dendrites. There was no significant difference between vortioxetine-treated rats

and control rats with respect to the number of intersections in apical and basal dendrites. The fluoxetine-treated group did not differ from the control group on any measures.
Conclusion: Subchronic dosing with vortioxetine increased dendritic length and the number of dendritic spines at a time point when a dose of fluoxetine with similar occupancy of the 5-HT transporter had no effects. This supports the hypothesis that vortioxetine's effects on dendritic morphology are mediated by mechanisms that go beyond serotonin reuptake inhibition. The underlying molecular mechanism remains to be investigated in further detail.
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PATTERNS OF ANTIDEPRESSANT EFFICACY WITH QUETIAPINE XR AS ADJUNCT TO DIFFERENT ONGOING ANTIDEPRESSANTS; EXPLORATION OF MOA HYPOTHESES

Lead Author: Catherine J. Datto, M.D., M.S. Co-Author(s): William Pottorf, Ph.D., Scott LaPorte, B.S., Charles Liss, M.S.

SUMMARY:

Introduction: The rationale for adjunctive antidepressant therapy utilizes potentially complementary hypothesized mechanisms of antidepressant activity. Quetiapine extended release (QXR) is thought to have antidepressant efficacy primarily due to the mechanism of norepinephrine transporter inhibition plus 5-HT1A partial agonism by its active metabolite, norquetiapine. In this regard, patients taking different classes of antidepressant may benefit differentially from adjunctive QXR.
Methods: Two randomized, placebo-controlled trials of similar design studied QXR as adjunct treatment in patients with acute depressive episodes of major depressive disorder (MDD), who demonstrated an inadequate response to an ongoing antidepressant.1,2 The ongoing adjunct antidepressants were categorized as selective serotonin reuptake inhibitors (SSRI: sertraline, citalopram, escitalopram, paroxetine, fluoxetine), serotonin-norepinephrine reuptake inhibitors (SNRI: venlafaxine, duloxetine) or other (bupropion, amitriptyline). Patients used the antidepressant dose for at least 6 weeks before adding QXR 150 or 300 mg once daily in the evening. The primary endpoint of the studies was change in total MADRS score from baseline to Week 6. Results from the QXR treatment arms were pooled in this post hoc descriptive analysis.
Results: 615 patients were randomized to adjunct QXR and 303 patients to placebo. The most frequently used adjunctive antidepressants were escitalopram, sertraline (SSRIs) and venlafaxine (SNRI), with approximately 150 patients per group. The majority of patients were women, ranging from 57-87% across groups. Median age across groups ranged from 42-53 years. Baseline illness mean measures were similar across groups and ranged from: MADRS total score 25.0-30.0; CGI-S 4.3-4.8 (except amitriptyline, 4.6-5.3); HAM-D total score 23.4-27.6; and HAM-A total score 16.8-23.6. Addition of QXR to antidepressant therapy was associated with a greater reduction in MADRS from baseline ranging from -12.5 to -17.5 at 6 weeks compared to placebo for all antidepressants studied, except amitriptyline (the smallest antidepressant subgroup, N = 24 total). Tolerability and safety of QXR were similar across antidepressant groups and consistent with the established safety profile of QXR.
Conclusion: QXR was efficacious as adjunctive therapy in treating MDD across antidepressant classes, with the exception of amitriptyline, and tolerability of QXR was consistent with the known safety profile.
Research sponsored by AstraZeneca.
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ADJUNCTIVE BREXPIPRAZOLE (OPC-34712) IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER AND ANXIETY SYMPTOMS: AN EXPLORATORY STUDY

Lead Author: Ross Baker, M.B.A., Ph.D.
Co-Author(s): Ai Ota, B.Sc., Pamela Perry, M.Sc., Kana Tsuneyoshi., Emmanuelle Weiller, Psy.D., Ross Baker, Ph.D., MBA.

SUMMARY:
Background: Anxiety symptoms are common in patients with major depressive disorder (MDD) and are associated with greater severity, impaired functioning, and less favorable outcomes. Brexpiprazole is a serotonin-dopamine activity modulator (SDAM) 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. The objective of this open-label study was to explore the effects of adjunctive brexpiprazole in patients with MDD and anxiety symptoms (NCT02013531).
Methods: Patients with MDD and anxiety symptoms (HAM-A â‰¥20) with an inadequate response to current ADT were enrolled and received open-label ADT+brexpiprazole 1 to 3mg/day (2mg/day target dose) for 6 weeks. Efficacy endpoints included change in clinician-rated MADRS and HAM-A total score from baseline to Week 6, and change in the 92-item patient-rated Kellner Symptom Questionnaire (KSQ, range 0 to 92) total score from baseline to Week 6.
Results: A total of 37 patients were treated with brexpiprazole+ADT, and of these 32 patients completed 6 weeks of treatment. At baseline, the mean MADRS total score was 30.3, the mean HAM-A total score was 27.0, and the mean KSQ total score was 55.9, indicating that the patients had moderate to severe symptoms of depression and anxiety. Improvements were observed for the LS mean change in MADRS total score from Baseline to Week 6 in patients treated with brexpiprazole+ADT (least square mean change: -19.6, 95% CI [-22.7;-16.6]) and in HAM-A total score (-17.8, 95% CI [-20.3;-15.3]). In addition, the mean change from Baseline to Week 6 in KSQ total score (-29.4) also improved. Adjunctive brexpiprazole was well tolerated; the incidence of activating adverse events (akathisia, restlessness, agitation, anxiety, and insomnia) was low (â‰¤5% in any treatment group); and no clinically relevant changes in the mean laboratory test values, vital signs, or ECG parameter values were observed.
Conclusion: Adjunctive treatment with brexpiprazole may represent a novel and effective strategy for treatment of patients with MDD and symptoms of anxiety showing an inadequate response to ADT.

EFFICACY AND SAFETY OF CARIPRAZINE AS ADJUNCTIVE THERAPY IN MAJOR DEPRESSIVE DISORDER: A DOUBLE-BLIND, RANDOMIZED, PLACEBO-CONTROLLED STUDY

Lead Author: Willie Earley, M.D.
Co-Author(s): Maurizio Fava, M.D., Suresh Durgam, M.D., Hua Guo, Ph.D., GyÃ¶rgy NÃ©meth, M.D., IstvÃ¡n Laszlovszky, Pharm.D.

SUMMARY:
Background: Atypical antipsychotics are often used adjunctively in patients with major depressive disorder (MDD) who have an inadequate response to antidepressant treatment (ADT) alone. Cariprazine (CAR), a potent dopamine D3 and D2 receptor partial agonist with preferential binding to D3 receptors, is in clinical development for the treatment of schizophrenia, bipolar mania, and bipolar depression. CAR is also being investigated as adjunctive treatment for patients with MDD who have inadequate response to standard ADT.

Methods: This was an 8-week, Phase 2b, randomized, double-blind, placebo (PBO)-

controlled, flexible-dose study of CAR in adults with MDD (NCT01469377). Patients with a current depressive episode and documented ongoing inadequate response to standard ADT were randomized (1:1:1) to treatment with PBO, or CAR 1-2 mg/d or 2-4.5 mg/d to be administered adjunctively with current ADT. The primary and secondary efficacy outcomes were mean change from baseline to Week 8 in Montgomery-Ã…sberg Depression Rating Scale (MADRS) and Sheehan Disability Scale (SDS) total scores, respectively, analyzed using a mixed-effects model for repeated measures (MMRM); P values were adjusted for multiple comparisons. MADRS single items were evaluated post hoc. Safety assessments included adverse events (AEs), clinical laboratory tests, vital signs, and electrocardiograms.

Results: The intent-to-treat population comprised 808 patients (PBO=264; CAR: 1-2 mg/d=273, 2-4.5 mg/d=271); 83% of patients completed the study (PBO=88%; CAR: 1-2 mg/d=83%, 2-4.5 mg/d=77%). The LSMD (95% CI) for MADRS total score change from baseline to Week 8 was statistically significant in favor of CAR 2-4.5 mg/d vs PBO (-2.2 [-3.7, -0.6]; adjusted P=.0114); LSMD for CAR 1-2 mg/d vs PBO (-0.9 [-2.4, 0.6]) was not statistically significant (adjusted P=.2404). For CAR 2-4.5 mg/d vs PBO, significantly greater improvements were seen on multiple MADRS single items (Sadness [Apparent and Reported], Reduced Appetite, and Inability to Feel [P<.01 each] and the MADRS Core 6 Subscale (P=.0079); for CAR 1-2 mg/d vs placebo, significantly greater improvement was seen on the Inability to Feel item (P=.0044). At Week 8, LSMD vs PBO for decrease in SDS total score was not statistically significant for CAR 1-2 mg/d (-1.1 [-2.5, 0.3], adjusted P=.2404) or 2-4.5 mg/d (-1.4 [-2.8, 0.0], adjusted P=.1140). AEs were reported in 59%, 69%, and 78% of patients in the PBO and CAR 1-2 and 2-4.5 mg/d groups, respectively. AEs reported in â‰¥10% of any treatment group were akathisia, insomnia, nausea (2 4.5 mg/d: 22% 14%, 13%), and headache (placebo: 13%).

Discussion: In adults with MDD and inadequate response to standard ADT, adjunctive cariprazine 2-4.5 mg/d produced significantly greater improvement in depressive symptoms relative to PBO and was generally well-tolerated. This study was supported by funding from Forest Laboratories, LLC, an affiliate of Actavis, Inc., and Gedeon Richter Plc.

POST HOC ANALYSES OF SUICIDALITY IN CLINICAL TRIALS OF VILAZODONE IN ADULTS WITH MAJOR DEPRESSIVE DISORDER

Lead Author: John Edwards, M.D.
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SUMMARY:

Introduction: Vilazodone (VLZ) is a serotonin reuptake inhibitor and 5-HT1A receptor partial agonist approved for the treatment of major depressive disorder (MDD) in adults. Post hoc analyses of suicidality-related measures were performed on data from Phase III and IV studies to characterize suicidal ideation and behavior in patients with MDD treated with VLZ.

Methods: Data were analyzed from 4 randomized, double-blind, placebo (PBO)-controlled fixed-dose VLZ studies: two 40-mg/d 8-week Phase III studies (NCT00285376 [N=410], NCT00683592 [N=481]), an 8-week 40-mg/d Phase IV study (NCT01473394 [N=518]), and a 10-week 20- and 40-mg/d Phase IV study (NCT01473381 [N=873]). Data from the 4 studies were pooled and treatment-emergent adverse events (TEAEs) of suicidal ideation, suicide attempt, intentional overdose, or intentional self-injury were assessed.

Suicidal ideation and behavior were also evaluated using ratings from the Columbia Suicide Severity Rating Scale (C-SSRS) in 1 Phase III study (assessed recent history of suicidal ideation and behavior) and both Phase IV studies (assessed lifetime history of suicidal ideation and behavior). C-SSRS evaluations included treatment-emergent (TE) suicidal ideation (increase in maximum ideation score), emergence of serious suicidal ideation (increase in maximal ideation score from 0 to 4 or 5), and emergence of suicidal behavior (any occurrence of suicidal behavior).

Results: Incidence of suicidal ideation TEAEs was 0.5% (PBO), 0.7% (VLZ 20 mg/d), and 0.1% (VLZ 40 mg/d); incidence of suicide attempt TEAEs was 0% (PBO and VLZ 20 mg/d) and 0.2% (VLZ 40 mg/d). Incidence of intentional overdose TEAEs was 0% (PBO and VLZ 20 mg/d) and 0.1% (VLZ 40 mg/d); incidence of intentional self-injury TEAEs was 1% (PBO) and 0% (both VLZ dose groups).

In the Phase III study that included the C-SSRS, 6.9% of PBO and 4.7% of VLZ 40-mg/d patients had TE suicidal ideation; no patients in either treatment group had emergence of serious suicidal ideation or suicidal behavior. In the Phase IV studies, the frequency of TE suicidal ideation was 4.3% (PBO), 3.1% (VLZ 20 mg/d), and 2.6% (VLZ 40 mg/d). Emergence of serious suicidal ideation was 1.1% (PBO), 0.4 % (VLZ 20 mg/d), and 0.2% (VLZ 40 mg/d); emergence of suicidal behavior was 0.2% for PBO and 0% for both VLZ dose groups.

Conclusions: Post hoc analyses of suicidality in adult MDD trials suggested that treatment with VLZ was not associated with an increase in suicidal ideation or behavior relative to PBO. Supported by funding from Forest Laboratories, LLC, an affiliate of Actavis, Inc.

EFFICACY AND SAFETY OF BREXPIPRAZOLE (OPC-34712) AS ADJUNCTIVE TREATMENT IN MAJOR DEPRESSIVE DISORDER: META-ANALYSIS OF TWO PIVOTAL STUDIES

Lead Author: Hans Eriksson, M.D.
Co-Author(s): Emmanuelle Weiller, Psy.D., Catherine Weiss, Ph.D., Peter Zhang, Ph.D., Aleksandar Skuban, M.D., Michael E. Thase, M.D.

SUMMARY:

Objective: Brexpiprazole is a serotonin-dopamine activity modulator (SDAM) 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. The efficacy, safety and tolerability of adjunctive brexpiprazole were evaluated in patients with major depressive disorder (MDD) and inadequate response to antidepressant treatments (ADTs), based on pooled data from two pivotal phase III studies.
Methods: Patients with MDD and inadequate response to 1â€“3 ADTs were enrolled and received single-blind ADT for 8 weeks. Patients with inadequate response after this prospective phase were randomized to ADT+brexpiprazole or ADT+placebo for 6 weeks. Both studies included fixed doses (2mg [Study 1: NCT01360645]; 1mg and 3mg [Study 2: NCT01360632]). Primary efficacy endpoint was the change in MADRS total score from baseline to Week 6. As the two studies had a similar design, a meta-analysis was performed with pooled placebo groups.
Results: Adjunctive brexpiprazole showed greater improvement than adjunctive placebo in MADRS total score (least square mean difference to placebo+ADT [n=360]: 1mg+ADT [n=204]: -2.02, p=0.0018; 2mg+ADT [n=164]: -2.35, p=0.0007; 3mg+ADT [n=196]: -2.54, p=0.0001). The most frequent adverse events included akathisia (4.4%, 7.4%, 13.5%, 1.7%), weight increase (6.6%, 8.0%, 5.7%, 1.9%), tremor (4.0%, 2.1%, 5.2%, 2.2%) and somnolence (4.0%, 4.3%, 5.7%, 0.5%), in

the brexpiprazole 1mg+ADT (n=226), 2mg+ADT (n=188), 3mg+ADT (n=229) and pooled placebo+ADT groups (n=411), respectively.
Conclusion: Data from adequate and well-controlled clinical studies provide evidence that brexpiprazole is efficacious as adjunctive treatment in MDD patients with an inadequate response to ADTs. All doses of adjunctive brexpiprazole were well tolerated, with notably low levels of sedating or activating side effects.

A RANDOMIZED STUDY TO EXAMINE THE IMPACT OF PSYCHEDUCATIONAL INTERVENTION ON ADHERENCE TO ANTIDEPRESSANTS

Lead Author: Adel Gabriel, M.D.

SUMMARY:
METHOD: 67 consenting patients with confirmed diagnosis of major depression were randomly assigned to a group (n = 40) who received systematized psycho-education for depression, and to a waiting group (n = 27) who received standard care. The intervention group received systematic education. The primary clinical outcome measures included the Depression Adherence Scale (AAS). Other clinical outcome measures included; the (QIDS-C) and the (QIDS-SR). RESULTS: At 12 weeks there was significant (p< .01) reduction in the (QIDS-CR) and the (QIDS-SR) scores in both groups. Forgetfulness was the commonest omission reported. The total number of omissions in the four domains of adherence as measured at baseline, at 4, 8, and at 12 weeks, by the (AAS), were significantly less among the intervention group (p < .001) than in the waiting group. CONCLUSION: Systematized education may lead to significant reduction in clinical symptomatology, and to improved adherence to antidepressants.

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VALPROATE IN UNIPOLAR TREATMENT-RESISTANT DEPRESSION (TRD): A PILOT STUDY

Lead Author: Gabriella Gobbi, M.D., Ph.D.
Co-Author(s): Maykel F. Ghabrash, M.D., Rafael Ochoa Sanchez, Ph.D., Stefano Comai, Ph.D., Linda Booij, Ph.D., Gabriella Gobbi, M.D., Ph.D.

SUMMARY:
About 50% of patients with unipolar depression suffer from treatment-resistant depression (TRD). Animal studies have suggested potential antidepressant properties of valproate. Valproate at doses ranging from 375-1000mg/day was added to the treatment regimen in nine patients (four females, five males) with unipolar TRD, who previously failed to respond to two or more antidepressant trials and/or different combinations. Patients were followed over a period of 6-10 months. Compared to baseline, valproate significantly decreased MADRAS score at day 90Â±60 (32.7Â±1.9 vs 19.5Â±1.6, P<0.001) and day 240Â±60 (32.7Â±1.9 vs 13.6Â±2.2, P<0.001), (effect size: Î·2partial=0.9). None of the patients relapsed during the observational period. Though preliminary, treatment with valproate provided substantial clinical improvement in patients with severe TRD and deserves to be further explored in large double-blind clinical trials.

THE CLINICAL SIGNIFICANCE OF THE RELATIONSHIP BETWEEN ALDOSTERONE AND DEPRESSION

Lead Author: Lubomira Izakova, M.D., Ph.D.
Co-Author(s): Viktor Segeda, M.D., Natasa Hlavacova, RNDr., PhD., Daniela Jezova, PharmDr., DrSc.

SUMMARY:
Aim: Despite promising advances in neuroscience, ethiopathogenesis of depression is not sufficiently clarified. So far, there are no biological markers specific for depression. In this context, corticosteroid hormones seem to be important. The most recent attention turns from cortisol to the potential role of the

mineralocorticoid hormone aldosterone and its diurnal variation.
Objective: We were verifying the hypothesis that the prevalence of depression is accompanied by an increase of aldosterone secretion and remission of depression leading to its decrease.
Method: We analyzed prospective data from 31 inpatients (54.9 Â± 2.5 years) suffered from major depression. Non-invasive measurement of aldosterone in saliva was used. Due to physiological range for aldosterone concentrations and its dependence also on the phase of the menstrual cycle (physiologic concentrations in saliva for men and menopausal women: morning â‰¥ 20 pg/ml, evening â‰¥ 10 pg/ml), we used in women as exclusion criterion a menopause. The severity of depression was evaluated by MADRS (score â‰¥ 20). Saliva for measurement of aldosterone were collected twice daily (7:00 a.m., 9:00 p.m.), at admission (acute depressive state) and at discharge of patients from hospital (clinical remission) and aldosterone concentrations was measured using own radioimmunoassay method.
Results: The mean MADRS score was at admission 29.8 Â± 1.5 and at discharge 7.4 Â± 1.1. The median of duration of depressive episode was 12 weeks with interval 2 â€“ 52 weeks. Mean morning aldosterone concentration was at admission 25.2 Â± 1.9 pg/ml, at discharge 24.4 Â± 2.3 pg/ml. Mean evening aldosterone concentration was at admission 26.6 Â± 3.9 pg/ml, at discharge 21.3 Â± 2.6 pg/ml. We divided study group in to two subgroups according to duration of depressive episode. Differences in aldosterone concentrations were found between them. In subgroup with duration of depression up to 12 weeks (n = 18) at admission we found higher morning and evening aldosterone concentrations in comparison with subgroup with depression lasting longer than 16 weeks (n=13) (morning: 21.3 Â± 2.4 pg/ml vs 21.4 Â± 2.0 pg/ml, evening: 31.1 Â± 6.3 pg/ml vs 20.1 Â± 2.9 pg/ml). This situation was presented also at discharge (morning: 26.5 Â± 3.7 pg/ml vs 21.4Â± 2.0 pg/ml, evening: 24.5 Â± 4.0 pg/ml vs 16.1 Â± 1.9 pg/ml). Despite the fact, that we did not find statistically significant results, we can notice the positive trend there.
Conclusion: Results suggested not only the relationship between the depression, its duration and concentration of aldosterone, but also loss of diurnal variations in aldosterone concentration in depression. In shorter period of depression, especially in the evening measurements, we found higher aldosterone concentrations which persisted also after acute treatment despite clinical improvement. The study represents the pilot data and obtained findings require further confirmation.
This study was supported by VEGA grant No 2/0057/15.

EFFECT OF VORTIOXETINE ON FUNCTIONAL CAPACITY IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER WITH SELF-REPORTED COGNITIVE DYSFUNCTION

Lead Author: Richard Keefe, Ph.D.
Co-Author(s): Christina Kurre Olsen, Ph.D., Atul R. Mahableshwarkar, M.D., Yinzhong Chen, Ph.D., Richard S.E. Keefe, Ph.D.

SUMMARY:

Objective: Evaluate the impact of flexible-dose vortioxetine 10-20mg (VOR) vs placebo (PBO) on objective and subjective measures of patient functionality after 8 wks of treatment in adults with MDD (NCT01564862). Duloxetine 60mg (DUL) was included as an active reference for assay sensitivity of depressive symptoms.
Methods: Adults with moderate to severe MDD (18-65yrs, MADRSâ‰¥26) and self-reported cognitive dysfunction (ie, difficulty concentrating, slow thinking, difficulty in learning new things) were enrolled in this placebo-controlled, active reference study. Objective and subjective aspects of functionality capacity were evaluated, including the UCSD Performance-Based

Skills Assessment (UPSA), Cognitive and Physical Functioning Questionnaire (CPFQ), and Work Limitation Questionnaire (WLQ). Path analysis was used to assess the proportion of functional improvement attributed to a direct treatment effect, not due to improvements in mood. Results: 602 patients were randomized (VOR, n=198; PBO, n=194; DUL, n=210). VOR demonstrated a significant improvement in UPSA composite score vs PBO at week 8 (n=175, Î” +2.94, P<0.001; ANCOVA, OC), UPSA-Brief (n=97, Î” +4.02, P=0.001) but not UPSAâ€“VIM (n=78, Î” +1.75, P =0.078). DUL did not demonstrate a significant change in UPSA composite score (n=187, Î” +0.38, P =0.637), UPSAâ€“Brief (n=93, Î” â€“0.35, P=0.775), or UPSA-VIM (n=94, Î” +1.17, P=0.219) vs PBO at week 8. Path analysis of the UPSA composite score showed that 96.9% of the effect of VOR on performance-based functional capacity was direct and not indirectly mediated by improvement in depressive symptoms.
VOR improved work productivity in working patients vs PBO (VOR, n=73; PBO, n=69; DUL, n=77), as assessed by change in WLQ time management subscale score at Week 8 (n=72, Î” â€“8.13, P=0.045; n=72, Î” â€“2.53, P=NS; ANCOVA, OC). Neither VOR nor DUL separated from placebo in the other WLQ subscale scores or the percentage of productivity loss score; however, VOR demonstrated a decrease vs PBO in output demands score (n=70, Î”â€“7.60, P=0.069). Path analysis showed a direct effect of VOR on work productivity of 45.9% (time score) and 53.2% (output demands score), respectively, whereas improvements on mental demands score was primarily an indirect effect (68.7%), mediated by improvements in depressive symptoms. Patients with a baseline CPFQ >25 (predefined cut-off for clinically-relevant patient perceived cognitive symptoms) demonstrated a significant improvement in mean CPFQ score for VOR and DUL vs PBO (n=135, Î” -1.7, P=0.041; n=140, Î” -1.8, P=0.024; MMRM, FAS) that was largely an indirect effect (70.4%; 89.6%). Conclusions: Treatment with VOR significantly improved scores on the performance-based assessments of patient functionality. Path analyses suggest that the performance-based improvements for VOR are primarily a direct treatment effect and not due to improvements in mood. These data suggest that VOR produces improved functional capacity in patients with MDD.

EARLY LIFE STRESS INCREASES STRESS VULNERABILITY THROUGH BDNF GENE EPIGENETIC CHANGES IN THE RAT HIPPOCAMPUS

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SUMMARY:

Aims: Early life stress (ELS) exerts long-lasting epigenetic influence on the brain and makes an individual susceptible to later depression. However, little is known about epigenetic mechanisms of ELS and susceptibility to subsequent stress exposure during adulthood. In this study, we investigated the effect of maternal deprivation (MD), an animal model of ELS, on the behavioral response to chronic

restraint stress (RS) in adulthood. We also examined the epigenetic mechanisms of the brain-derived neurotrophic factor (BDNF) gene, which may underlie behavioral vulnerability to chronic RS induced by maternal deprivation.
Methods: Rat pups were separated from their dams (3 h per day from postnatal day 1 through 3 weeks). When the pups became adults (8 weeks old), we introduced RS (2 h per day for 3 weeks) followed by chronic escitalopram treatment (10 mg/kg). We then investigated depression-like behavior using the forced swimming test (FST). Quantitative real-time polymerase chain reaction was used to determine the levels of total BDNF mRNA, exon IV BDNF mRNA, and histone deacetylase 5 (HDAC5) mRNA in the rat hippocampus. The levels of acetylated histones H3 and H4 and methyl CpG binding protein 2 (MeCP2) at BDNF gene promoter IV were determined using a chromatin immunoprecipitation assay.
Results: In the FST, we found that immobility time was significantly increased in maternally deprived, restrained rats (MD + RS group) compared with restrained rats (RS group), and this increase was reversed by escitalopram treatment. The levels of total and exon IV BDNF mRNA were significantly decreased in the MD (maternally deprived adult rats), RS, and MD + RS groups compared with the control group; moreover, the levels of total and exon IV BDNF mRNA was significantly lower in the MD + RS group than those in the RS group. These changes were associated with changes in the levels of acetylated histones H3 and H4 at BDNF promoter IV. MeCP2 expression was significantly increased at promoter IV in the MD, RS, and MD + RS groups compared with that in the control group. Specifically, MeCP2 expression was significantly higher in the MD + RS group than in the RS group. Finally, upregulation of HDAC5 mRNA in these groups was associated with hypoacetylation of H3 and H4. These epigenetic factor alterations were recovered by chronic escitalopram treatment.
Conclusions: These results suggest that BDNF gene epigenetic changes in the hippocampus during ELS elevate stress vulnerability in response to subsequent stress in adulthood. Furthermore, this study suggests that BDNF gene epigenetic mechanisms in the rat hippocampus are involved in escitalopram action.
Keywords: Epigenetic mechanism; Early life stress; Restraint stress; BDNF; Escitalopram; Hippocampus.

EFFECTS OF P11 ON BDNF-INDUCED CHANGES IN DENDRITIC OUTGROWTH AND SPINE FORMATION IN PRIMARY HIPPOCAMPAL CELLS

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SUMMARY:

Objectives: 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 the present study, we investigated whether 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. The level of p11 was evaluated using Western blot analysis; dendritic outgrowth and spine formation were assessed using immunostaining.

Results: B27 deprivation significantly decreased p11 expression ($p < 0.01$). Treatment with BDNF (50, 100, and 200 ng/mL) significantly prevented the B27 deprivation-induced decrease in p11 level in a concentration-dependent manner ($p < 0.05$ or $p < 0.01$), whereas these concentrations had no effect on control cultures. B27 deprivation significantly reduced the total outgrowth of hippocampal dendrites and spine number ($p < 0.01$). BDNF (100 and 200 ng/mL) significantly increased dendritic outgrowth and spine number in conditions with or without B27 (all $p < 0.01$). Furthermore, p11 knockdown through small interfering RNA (siRNA) transfection blocked these effects in B27-deprived cells (all $p < 0.01$).
Conclusions: Taken together, our data suggest that BDNF-induced improvement in neural plasticity may depend on upregulation 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

LEVOMILNACIPRAN ER TREATMENT IN ADULT MDD PATIENTS IN A RECURRENT DEPRESSIVE EPISODE OR IN THE FIRST DEPRESSIVE EPISODE

Lead Author: Susan G. Kornstein, M.D.
Co-Author(s): Carl P. Gommoll, M.S., Changzheng Chen, Ph.D.

SUMMARY:

Background:Levomilnacipran extended-release (LVM ER) is a serotonin and norepinephrine reuptake inhibitor that is approved for the treatment of major depressive disorder (MDD) in adults. The majority of adults with MDD have recurrent episodes. Although some studies have reported poorer treatment outcomes in patients with a history of prior episodes, others have found similar outcomes between first-episode patients and those in a recurrent depressive episode (Perahia, Int Clin Psychopharm 2006). To explore the effects of LVM ER in patients with first-episode or recurrent MDD, post hoc analyses were conducted using pooled data from 5 randomized, placebo (PBO)-controlled clinical trials.
Methods:Patients in the studies (4 US, 1 non-US) were randomized to receive 8 or 10 weeks of double-blind treatment with LVM ER (40-120 mg/d) or PBO. In patients with available episode-related data (N=2451), 2 main subgroups were identified for post hoc analyses: patients in a recurrent depressive episode and patients in the first depressive episode (any episode duration). Based on available data (US studies only), a subgroup of antidepressant (ADT)-naÃ¯ve patients in the first episode (duration <12 months) was also evaluated. In each of these subgroups, mean changes from baseline to end of treatment in Montgomery-Ã…sberg Depression Rating Scale (MADRS), Hamilton Rating Scale for Depression (HAMD), and Sheehan Disability Scale (SDS) total scores were analyzed using a last observation carried forward approach. In addition, the percentage of patients with MADRS response, defined as â‰¥50% total score improvement from baseline, was analyzed in the recurrent and first-episode subgroups from the 5 studies.
Results:Approximately 80% of patients in the 5 studies were in a recurrent MDD episode. In patients with recurrent or first-episode MDD, least squares mean differences (LSMDs) between treatment groups indicated significantly greater improvements with LVM ER compared with PBO in MADRS (recurrent, -2.9, P<.0001; first, -2.6, P=.0137), HAMD (recurrent, -1.6, P=<.0001; first, -2.1, P=.0039); and SDS (recurrent, -2.3, P<.0001; first, -2.0, P=.0105) total scores. A similar magnitude of LVM ER treatment effects vs PBO was found in ADT-naÃ¯ve first-episode patients (n=152 for MADRS and HAMD analyses), although sample sizes were too small to reach statistical significance (LSMD: MADRS total, -3.1, HAMD total, -1.9; SDS total, -2.3; all P>.05 vs PBO). MADRS

response rate was significantly greater with LVM ER vs PBO in patients with recurrent (44.4% vs 33.5%; P<.0001) and first-episode MDD (44.5% vs 35.0%; P=.0228).
Conclusions:The treatment effects of LVM ER on depressive symptoms (MADRS and HAMD total scores) and functional impairment (SDS total score) were similar in patients with recurrent MDD and those in their first MDD episode, including patients who had not received prior ADT treatment.
Supported by funding from Forest Laboratories, LLC, an affiliate of Actavis, Inc.

FACING DEPRESSION USING BOTULINUMTOXIN: UPDATE AND POOLED ANALYSIS FROM CLINICAL TRIALS

Lead Author: Tillmann Kruger, M.D.
Co-Author(s): M. Axel Wollmer, M.D., Michelle Magid, M.D., Eric Finzi, M.D.

SUMMARY:

Introduction: Positive effects on mood have been observed in subjects who underwent treatment of glabellar frown lines with botulinum toxin A (BTX). In an open case series depression remitted or improved after such treatment. In Europe and the U.S. three randomized double-blind placebo-controlled trials (RCTs) have now been conducted in which BTX injection to the glabellar region as an adjunctive or single treatment of major depression in men and women were assessed (ClinicalTrials.gov, number: NCT00934687, NCT01556971, NCT01392963).

Methods: In total, 134 patients were randomly assigned to a verum (BTX) or placebo (saline) group. The primary end point was change in the 17-item version of the Hamilton Depression Rating Scale (HAMD17) in two studies and in the Montgomery Ã…sperg Depression Rating Scale (MADRS) in one study six weeks after treatment compared to baseline. Individual patient data for all baseline variables and clinical end points was pooled and analyzed as one study using multiple regression model statistics.

Results: Regarding baseline characteristics there were no significant differences between the verum (n=59) and the placebo group (n=75). Throughout the six week follow-up period there was a significant reduction in depressive symptoms of 45.7% in the verum group compared to 14.6% in the placebo group as measured by the HAMD and MADRS. The response rate was 54.2% (vs. 10.7%; OR 11.1, NNT=2.3) and the remission rate was 30.5% (vs. 6.7%; OR 7.3, NNT 4.2). Treatment-dependent clinical improvement was also reflected in the Beck Depression Inventory. There was no statistically significant difference in the response rates for patients receiving BTX as a monotherapy versus an adjunct agent (patients on 1-3 psychotropic medications). Men (n=14) seemed to equally benefit from treatment as women (n=140), although larger studies with a higher number of male participants are needed. The safety profile was excellent. Mild adverse reactions such as local irritation or temporary headache occurred in 11.8% in the BTX group versus 8.0% in the placebo group (p=0.46).

Conclusions: All three RCTs demonstrate that a single treatment of the glabellar region with BTX can shortly accomplish a strong and sustained alleviation of depression in patients. The pooled analyses confirm these initial findings and give additional information on the question of gender differences, botulinum toxin A as monotherapy or augmentation strategy and safety. These findings support the concept, that the facial musculature not only expresses, but also regulates mood states, as explained by the facial feedback hypotheses. They may offer a novel approach for the treatment of depression in the future.

PLASMA BRAIN-DERIVED NEUROTROPHIC FACTOR LEVELS

PREDICT THE CLINICAL OUTCOME OF DEPRESSION TREATMENT IN A NATURALISTIC STUDY

Lead Author: Masatake Kurita, M.D., Ph.D.
Co-Author(s): Masatake Kurita, M.D., Ph.D., Satoshi Nishino, Ph.D., Maiko Kato, M.D., Yukio Numata, M.D., Tadahiro Sato, M.D., Ph.D.

SUMMARY:
Remission is the primary goal of treatment for major depressive disorder (MDD). However, some patients do not respond to treatment. The main purpose of this study was to determine whether brain-derived neurotrophic factor (BDNF) levels are correlated with treatment outcomes. In a naturalistic study, we assessed whether plasma BDNF levels were correlated with clinical outcomes by measuring plasma BDNF in patients with depressive syndrome (MADRS score â‰¥ 18), and subsequently comparing levels between the subgroup of patients who underwent remission (MADRS score â‰¤ 8) and the subgroup who were refractory to treatment (non-responders). Patients with depressive syndrome who underwent remission had significantly higher plasma BDNF levels ($p < 0.001$), regardless of age or sex. We also found a significant negative correlation between MADRS scores and plasma BDNF levels within this group (Ï = â€“0.287, $p = 0.003$). In contrast, non-responders had significantly lower plasma BDNF levels ($p = 0.029$). Interestingly, plasma BDNF levels in the non-responder group were significantly higher than those in the remission group in the initial stage of depressive syndrome ($p = 0.002$). Our results show that plasma BDNF levels are associated with clinical outcomes during the treatment of depression. We suggest that plasma BDNF could potentially serve as a prognostic biomarker for depression, predicting clinical outcome. This study was registered in the UMIN Clinical Trials Registry (UMIN-CTR: UMIN000006264).

A RANDOMIZED, PLACEBO-CONTROLLED STUDY OF BRIGHT LIGHT THERAPY, FLUOXETINE AND THE COMBINATION, FOR NONSEASONAL MAJOR DEPRESSION.

Lead Author: Raymond W. Lam, M.D.
Co-Author(s): Robert D. Levitan, M.D., Anthony J. Levitt, M.D., Edwin M. Tam, M.D., Lakshmi N. Yatham, M.D., Cindy Woo, B.A.

SUMMARY:
Objective: Bright light therapy is an evidence-based treatment for seasonal depression, but there is limited evidence for its efficacy in nonseasonal major depressive disorder (MDD). Our aim was to determine the efficacy of light therapy, alone and in combination with fluoxetine, for nonseasonal MDD.
Methods: This double-blind, randomized, placebo-controlled 8-week trial involved 3 Canadian centres. Entry criteria included DSM-IV criteria for MDD of at least moderate severity; active medical illness or substance use, bipolar disorder, seasonal pattern and treatment-resistance were excluded. Patients were randomly assigned to 1 of 4 conditions: (1) active light monotherapy (active 10,000 lux fluorescent white light box for 30 minutes daily) plus placebo pill; (2) active antidepressant monotherapy (placebo inactive negative ion generator for 30 minutes daily plus fluoxetine 20 mg); (3) combined light and antidepressant (active light box plus fluoxetine); and (4) placebo (placebo inactive negative ion generator plus placebo pill). The primary outcome was change score on the Montgomery-Asberg Depression Rating Scale (MADRS), with secondary outcomes of response (MADRS>=50% reduction) and remission (MADRS<=12). Statistical analysis was conducted with ANCOVA and Bonferroni post hoc tests for change scores, and with chi square tests for categorical outcomes.
Results: 131 patients were screened and 122 randomized. The overall ANCOVA for change score on the MADRS was

significant, with post hoc tests showing that light monotherapy (p=0.025) and light+fluoxetine combination (p=0.001) were superior to placebo, while fluoxetine monotherapy was not; light+fluoxetine combination was also superior to fluoxetine monotherapy (p=0.028). Similarly, combination light+fluoxetine was superior to both placebo and fluoxetine monotherapy for response and remission rates, while light monotherapy was superior to placebo.
Conclusion: Light therapy, both as monotherapy and in combination with fluoxetine, was found to be efficacious in the treatment of patients with nonseasonal MDD. The combination of light and fluoxetine appeared to have the greatest efficacy.
Acknowledgments: ISRCTN10003823. Funded by the Canadian Institutes of Health Research (CIHR, MCT-94832).

EFFECTS OF ANTIDEPRESSANTS IN A RAT MODEL OF CO-MORBID COGNITIVE DEFICITS AND DEPRESSION-LIKE BEHAVIOR INDUCED BY OVARIECTOMY

Lead Author: Yan Li, M.D., Ph.D.
Co-Author(s): Alan Pehrson, Ph.D., Connie Sanchez, Ph.D., Maria Gulinello Ph.D.

SUMMARY:

Background: Ovariectomy is associated with cognitive deficits and depression-like behavior in rodents as is menopause in women. However, the effects of antidepressants with different mechanisms of action have not been systematically studied in this animal model. Therefore, we measured the effects of chronic fluoxetine (selective serotonin reuptake inhibitor, SSRI), duloxetine (serotonin-norepinephrine reuptake inhibitor, SNRI), vilazodone (serotonin reuptake inhibitor and 5-HT1A receptor partial agonist) and vortioxetine (5-HT3, 5-HT7 and 5-HT1D receptor antagonist, 5-HT1B receptor partial agonist, 5-HT1A receptor agonist and inhibitor of serotonin reuptake).
Hypothesis: Antidepressants with different mechanisms of action will have different efficacies in ovariectomized rats and will be differentially effective in specific behavioral domains.
Methods: Adult female Sprague-Dawley rats underwent ovariectomy at 10 weeks of age and received one of the following treatments via food for at least 4 weeks: vortioxetine, fluoxetine, duloxetine, vilazodone or control chow. Drug dosages were chosen to fully occupy the serotonin transporter and drug exposures were confirmed with ex vivo serotonin transporter occupancy analysis. Animals were tested in the novel object placement test (for visuospatial memory) and the forced swim test (for depression-like behavior). Gonadally intact age-matched female rats were included as controls. ANOVA followed by post-hoc protected test was used to analyze effects of drug treatments. P-values less than 0.05 were considered as significant.
Results: Ovariectomy in female rats induced deficits in visuospatial memory and increased immobility in the forced swim test. Chronic vortioxetine significantly improved visuospatial memory and reduced depression-like behavior. Neither chronic duloxetine, chronic vilazodone, nor chronic fluoxetine significantly changed the performances of OVX rats in any of the behavioral tests. At tested doses, all drugs fully occupied the serotonin transporter.
Conclusions and discussion: Ovariectomy induced visuospatial memory deficits and increased depression-like behavior, consistent with co-morbid mood and cognitive deficits during human menopause. Vortioxetine reversed both memory deficits and depression-like behavior in OVX rats.

EFFECT OF VORTIOXETINE ON COGNITIVE DYSFUNCTION IN SUBGROUPS OF ADULT MDD PATIENTS: A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED STUDY

Lead Author: SÃ¸ren Lophaven, Ph.D.

Co-Author(s): SÃ¸ren Lophaven, Ph.D., Christina K. Olsen, Ph.D., Roger S. McIntyre, M.D.

SUMMARY:
Objective: To evaluate the efficacy of acute treatment with vortioxetine (VOR) 10mg/day and 20mg/day versus placebo on cognitive dysfunction in subgroups of adult patients with MDD.

Methods: Patients aged 18-65 years with recurrent MDD according to DSM-IV-TR, a current major depressive episode of â‰¥3 months, and a MADRS total score â‰¥26 at both screening and baseline were eligible for this multi-national, randomized, double-blind, placebo-controlled study (FOCUS: NCT014222). In this study, VOR was statistically significantly superior to placebo on the primary outcome â€“ a composite score of the Digit Symbol Substitution Test (DSST) and the Rey Auditory Verbal Learning Test (RAVLT). The patients in the study were divided into subgroups based on age (â‰¤50 (n=351); >50 (n=240)), sex (women (n=389), men (n=202)), BMI (<25 (n=233); â‰¥25 and <30 (n=202); â‰¥30 (n=156)), educational level (lower education = elementary school, middle school, high school, other (n=331); higher education = graduate school, college or university (n=260)), working status (working (n=320); non-working (n=271)), number of previous MDEs (â‰¥2 (n=354); â‰¥3 (n=186); â‰¥4 (n=103)) and duration of current MDE (â‰¥4 months (n=429); â‰¥5 months (n=276); â‰¥6 months (n=202)). For each subgroup we analysed the effect of treatment with VOR 10 and 20 mg/day on the number of correct symbols in the DSST. This objective neuropsychological test comprises cognitive domains such as speed of processing, executive functioning and attention. Within subgroups the change from baseline to Week 8 in DSST number of correct symbols was analysed using a mixed model for repeated measurements (MMRM).

Results: Overall the effect of treatment with VOR against placebo on the change from baseline to week 8 in DSST number of correct symbols was 4.20 ($p<0.0001$) for 10 mg/day and 4.26 ($p<0.0001$) for 20 mg/day. In general, the overall treatment effects were confirmed within subgroups. For younger patients (ageâ‰¤50 years), patients aged >50 years, men, women, patients with BMI<25, patients with higher and lower level of education, working and non-working patients, patient with number of previous MDEs â‰¥2 and â‰¥3 as well as patients with a duration of the current MDE â‰¥4 months, â‰¥5 months and â‰¥6 months statistical significance ($p<0.05$) was found for both VOR 10mg/day and 20 mg/day. For patients with a BMI between 25 and 30, number of previous MDEs â‰¥4 statistical significance was only found for VOR 20mg/day. For patients with BMIâ‰¥30, statistical significance was not found for either VOR 10 mg/day or 20 mg/day.

Conclusions: VOR 10 and 20 mg/day were statistically significantly superior to placebo on DSST number of correct symbols, comprising executive functioning, processing speed and attention. These overall results were in general confirmed by the treatment effects of VOR within most subgroups of patients defined by age, sex, BMI, educational level, working status, number of previous MDEs and duration of current MDE.

EFFECT OF ADJUNCTIVE BREXPIPRAZOLE (OPC-34712) ON DEPRESSIVE SYMPTOMS IN PATIENTS WITH SYMPTOMS OF ANXIOUS DISTRESS: RESULTS FROM POST-HOC ANALYSES

Lead Author: Roger S. McIntyre, M.D.
Co-Author(s): Peter Zhang, Ph.D., Catherine Weiss, Ph.D., Emmanuelle Weiller, Psy.D.

SUMMARY:
Background: Patients with a high level of anxiety have been associated with

increased suicide risk, longer duration of illness and greater likelihood of non-remission and unfavorable course and outcome. The foregoing hazards associated with anxiety in adults experiencing a major depressive episode provided the impetus for DSM-5 to introduce the anxious distress specifier. Brexpiprazole is a serotonin-dopamine activity modulator (SDAM) 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. The objective of this post-hoc analysis was to assess the efficacy of adjunctive brexpiprazole compared to placebo when added to an antidepressant treatment (ADT) in patients with MDD and symptoms of anxious distress using proxies for DSM-5 criteria. The data analyzed herein were obtained from two phase III clinical studies.
Methods: Patients with MDD and an inadequate response to 1â€“3 ADTs were enrolled and received single-blind ADT for 8 weeks. Patients with inadequate response after this prospective phase were randomized to ADT+brexpiprazole or ADT+placebo for 6 weeks. Both studies included fixed doses (2mg [Study 1: NCT01360645]; 1mg and 3mg [Study 2: NCT01360632]). In these post-hoc analyses, proxies were used to categorize patients as having anxious distress if they had â‰¥2 symptoms of tension (MADRS item 3 score â‰¥3), restlessness (IDS tem 24 score â‰¥2), concentration (MADRS item 6 score â‰¥3), or apprehension (HAM-D item 10 score â‰¥3). The efficacy endpoint was the change in MADRS total score from baseline to Week 6 in patients with or without anxious distress. The analyses were conducted using a Mixed Model Repeated Measure (MMRM) approach with pooled placebo groups.
Results: A total of 55% of the patients met the criteria for having anxious distress at Baseline. At baseline, the mean MADRS total score was 29.1 for patients with anxious distress and 23.9 for patients without anxious distress. Adjunctive brexpiprazole showed greater improvement than adjunctive placebo in the change from baseline to week 6 in the MADRS total score in patients with anxious distress (least square mean difference to placebo+ADT [n=209]: 1mg+ADT [n=119]: -1.74, p=0.0583; 2mg+ADT [n=103]: -2.95, p=0.023; 3mg+ADT [n=112]: -2.81, p=0.0027) as well as in patients without anxious distress (least square mean differences to placebo+ADT [n=172]: 1mg+ADT [n=92]: -2.37, p=0.0093; 2mg+ADT [n=72]: -1-60, p=0.1101; 3mg+ADT [n=101]: -2.23, p=0.0131). Anxious distress was not associated with an increased incidence of activating adverse events (akathisia, restlessness, agitation, anxiety, and insomnia).
Conclusion: These post hoc analyses suggest that adjunctive brexpiprazole may be efficacious in reducing depressive symptoms and is well tolerated, in patients with MDD and anxious distress.

A NOVEL PRE-CLINICAL MODEL OF CANCER-INDUCED DEPRESSION

Lead Author: Mina Nashed, B.Sc., M.Sc.
Co-Author(s): Eric Seidlitz, Ph.D., Gurmit Singh, Ph.D

SUMMARY:

Background: Depression has a dramatic impact on the quality of life and survivorship of cancer patients. While the prevalence of depression is approximately 8-12% in the general population, the Canadian Mental Health Association estimates that nearly 42% of cancer inpatients will experience depression. In addition to the psychosocial impact of a cancer diagnosis, evidence suggests that depression symptoms actually precede the diagnosis of cancer. Furthermore, the common symptom cluster of pain-depression-fatigue suggests that common biological mechanisms may be involved. In the absence of a validated animal model to study cancer-induced depression (CID), little progress has been made in

characterizing these mechanisms. The primary objective of this study is to establish a pre-clinical model of CID, which will allow for the investigation of mechanisms and novel drug targets.
Methods: 51 BALB/c mice were randomized to 4 groups: negative control (NC; n=12), positive control (PC; n=12), Reversal (n=12), and Cancer (n=15). The sucrose preference test (SPT) was used to test for anhedonia, and the forced swim test (FST) was used to test for behavioural despair. For the PC and the reversal group, corticosterone (CORT) was orally administered (35ug/mL) ad libitum to induce depressive behaviours. The reversal group then received a chronic low dose fluoxetine (FLX) (150ug/mL) ad libitum for an additional 21 days. Subcutaneous injections of 15,000 4T1 mammary carcinoma cells were used for the proposed CID model. The NC group received sham injections.
Results: In the PC and reversal groups, mice consumed an average of 6.5Â±0.9 and 6.5Â±0.7 mg/kg/day of CORT over a 21-day period, respectively. The reversal group then consumed an average of 16.5Â±2.1 mg/kg/day of FLX over an additional 21 days. On the SPT, the PC group had a significantly lower mean preference compared to NC (58.5Â±3.3% vs. 70.2Â±2.1%; $p < 0.05$). The reversal group had an intermediate mean preference (64.5Â±3.2%), which was not significantly different from the PC or NC group. On the FST, the PC group had a significantly higher mean immobility time compared to NC (233.8Â±23.1 sec vs. 191.2Â±31.5 sec; $p<0.01$), while the reversal group had a similar mean immobility time as NC (190.4Â±42.7 sec), which was significantly lower than the PC group ($p<0.01$). Using the same outcome measures, the cancer group showed significantly lower preference than NC on the SPT (60.4Â±3.35% vs. 70.2Â±2.1%; $p<0.05$), and significantly higher immobility on the FST (227.7Â±30.7 sec vs. 191.2Â±31.5 sec $p<0.01$).
Conclusion: The detection of depressive behaviours in the PC group, and the reversal of these behaviours by FLX establish the validity and sensitivity of the SPT and FST. Using these tests, the proposed model of CID demonstrated robust depressive behaviours. This novel CID model is the first of it's kind and opens new avenues of investigation by providing the tool to study CID at its most fundamental level.

LONG-TERM SAFETY OF ADJUNCTIVE BREXPIPRAZOLE (OPC-34712) IN MDD: RESULTS FROM TWO 52-WEEK OPEN-LABEL STUDIES

Lead Author: J. Craig Nelson, M.D.
Co-Author(s): Aleksandar Skuban, M.D., Peter Zhang, Ph.D., Emmanuelle Weiller, Psy.D., Catherine Weiss, Ph.D.

SUMMARY:

Background: Brexpiprazole is a serotonin-dopamine activity modulator (SDAM) 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. The long-term safety and tolerability of adjunctive treatment with brexpiprazole were evaluated in patients with major depressive disorder (MDD) and inadequate response to antidepressant treatments (ADTs), based on pooled data from two large open-label extension studies.
Methods: These two studies were open-label, 52-week, flexible-dose (study 1 [NCT01447576]: 0.25 to 3mg/day and study 2 [NCT01360866]: 0.5 to 3mg/day) studies with brexpiprazole. Study 1 enrolled de novo patients (not previously enrolled in a brexpiprazole study) as well as patients who had completed one of the two phase II studies (NCT00797966 or NCT01052077) while study 2 enrolled patients who had completed one of the two completed pivotal phase III studies in adjunctive treatment with MDD (NCT01360645 or NCT01360632). As study 2 is still ongoing,

the data presented are based on a data-cut from 31 Jan 2014.
Results: A total of 2084 patients entered the studies (697 from study 1 of which 243 were de novo patients and 1387 from study 2) and of these, 40.7% (848/2084) completed 52 weeks of treatment. The mean brexpiprazole dose was 1.6 mg/day. In total, 13.8% (288/2084) of the patients had a TEAE leading to withdrawal, and the most frequent AEs leading to withdrawal (>1%) were weight increased (3.6%) and depression (1.3%). The two most frequently reported adverse events in the long-term studies were weight increased (24.7%) and akathisia (10.0%); the adverse event profile was similar to what was observed in the short-term lead-in studies and there was no indication of an increased incidence over time for any adverse events. The mean weight gain from the beginning of the extension studies was 2.9kg at week 26 (n=1250) and 3.1kg at week 52 (n=829) for the observed cases. The percentage of patients who had a weight increase that was â‰¥7% in body weight was 29.5%. There were no meaningful changes in other metabolic parameters, including lipid profiles and glycemic parameters.
Conclusion: Long-term adjunctive treatment with brexpiprazole (0.25 to 3mg daily) was safe and well tolerated in patients with MDD who had inadequate response to standard ADTs, as evaluated in two open-label extension studies. Although increases in body weight were observed over time for some patients in the long-term studies, the low incidence of discontinuation among those patients suggests that the weight gain was not treatment-limiting for most patients.

CASTELLI RISK INDEXES 1 AND 2 ARE HIGHER IN MAJOR DEPRESSION BUT OTHER CHARACTERISTICS OF THE METABOLIC SYNDROME ARE NOT SPECIFIC TO MOOD DISORDERS

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Co-Author(s): Fernanda Liboni Cavicchioli, M.D., Luiz Gustavo Piccoli de Melo, M.D., Mauro Porcu, M.D., Juliana Brum Moraes, M.D., Kamila Landucci BonifÃ¡cio, M. Sc., Regina CÃ©lia Bueno Rezende Machado, M.Sc., Caroline Sampaio Nunes, M.D., Heber Odebrecht Vargas, Ph.D., MÃ¡rcia Pizzo, Ph.D.

SUMMARY:
Aims: This study examined whether Castelli risk indexes 1 (total/high-density lipoprotein (HDL) cholesterol) and 2 (low density lipoprotein (LDL)/HDL cholesterol) and other shared metabolic disorders might underpin the pathophysiology of the metabolic syndrome, major depression or bipolar disorder.
Main methods: This cross-sectional study examined 92 major depressed, 49 bipolar depressed and 201 normal controls in whom the Castelli risk indexes 1 and 2 and key characteristics of the metabolic syndrome, i.e. waist/hip circumference, body mass index (BMI), systolic/diastolic blood pressure, total cholesterol, low-density lipoprotein (LDL) and HDL cholesterol, triglycerides, insulin, glucose, hemoglobin A1c (HbA1c) and homocysteine were assessed.
Key findings: Castelli risk indexes 1 and 2 were significantly higher in major depressed patients than in bipolar disorder patients and controls. There were no significant differences in waist or hip circumference, total and LDL cholesterol, triglycerides, plasma glucose, insulin, homocysteine and HbA1c between depression and bipolar patients and controls. Bipolar patients had a significantly higher BMI than major depressed patients and normal controls.
Significance: Major depression is accompanied by increased Castelli risk indexes 1 and 2, which may be risk factors for cardiovascular disease. Other key characteristics of the metabolic syndrome, either metabolic biomarkers or central obesity, are not necessarily specific to major depression or bipolar disorder.

CLINICAL RELEVANCE OF SUBJECTIVE COGNITIVE ASSESSMENT IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER

Lead Author: Christina K. Olsen, Ph.D.
Co-Author(s): Christina K. Olsen, Ph.D., Roger S. McIntyre, M.D., SÃ¸ren Lophaven, Ph.D., Raymond W. Lam, M.D., F.R.C.P.C.

SUMMARY:
Objective: Major depressive disorder (MDD) is characterized by subjective cognitive complaints and objective cognitive deficits. Cognitive dysfunction can be assessed by both self-rated cognitive questionnaires and objective neuropsychological tests. The aim of this study was to examine the relationship between subjective cognitive assessment and objective neuropsychological tests in patients treated for MDD, using post-hoc secondary analysis of data from the FOCUS trial (NCT01422213), a randomized placebo-controlled clinical trial of vortioxetine, an antidepressant with multimodal mechanism of action.

Methods: Patients with MDD (N=602) were randomized 1:1:1 to treatment with vortioxetine 10 or 20 mg or placebo, for 8 weeks. Digit Symbol Substitution Test (DSST), Rey Auditory Verbal Learning Test (RAVLT), Trail Making Test (TMT), STROOP, as well as the computerized tests Simple Reaction Time task (SRT) and Choice Reaction Time task (CRT) were applied to assess the cognitive performance of the patients. Based on these tests we constructed a composite z-score by assigning equal weights to the cognitive tests. The composite z-score served as an integrated measure of cognitive performance. In addition, the trial included the Montgomery-Ã…sberg Depression Rating Scale (MADRS) and the self-rated Perceived Deficits Questionnaire (PDQ), a validated scale for cognitive symptoms. Statistical analyses were conducted using Pearson correlations.

Results: The PDQ total score was not significantly correlated with the composite z-score at baseline. At 8 weeks the correlation between the PDQ total score and the composite z-score was statistically significant ($r= -0.1108$, $p=0.011$). However, the most pronounced correlation was found between the change in PDQ score between baseline and 8 weeks and the change in composite z-score ($r= -0.374$, $p<0.0001$). Significant correlations were also found between changes in the 4 PDQ domain scores and a range of neuropsychological tests. The correlation between changes in the composite z-score and in PDQ was higher than for any of the individual neuropsychological tests. Change scores on the PDQ were also significantly correlated with change scores on the MADRS ($r= -0.513$, $p<0.0001$).

Conclusions: A subjective cognitive assessment scale like the PDQ can provide useful information about changes in cognitive functioning during treatment for MDD. In this study of patients with MDD, the changes in depressive symptoms were also associated with the patient's subjective assessment of cognitive functions.

FREQUENCY OF SOMATIC SYMPTOMS IN PATIENTS WITH MAJOR DEPRESSIVE DISORDER AND THEIR EFFECT ON WORK INTERFERENCE

Lead Author: Yong Chon Park, M.D., Ph.D.
Co-Author(s): Eun Young Jang, Ph.D., Soun Mee Lee, Ph.D.

SUMMARY:
Background
Traditionally somatic symptoms are common in patients with depression, especially in females or more especially in Asian culture. Since mental illness has been stigmatized and expression of emotion has been discouraged in collectivist culture such as Korea, it has been hypothesized that Asians report more somatic symptoms of distress than those of Western culture.

However, psychiatric clinicians of Korea suggest that they can detect changes in expressing depression by a channel of somatic symptom in recent years. The present study was to understand the frequency of somatic symptoms of depression and explore their negative and independent effect in patients with major depressive disorder.

Methods
Ninety-one patients were taken from a university hospital in South Korea from 2010 to 2014. They were diagnosed for major depressive disorder based on DSM-IV criteria. Exclusion criteria included comorbidities such as mental retardation, organic brain syndrome, personality disorder and substance abuse. The T score of content scales of MMPI-2 were collected and score of 60 was used as a cut-point at each subscales. The subscales were as follows: DEP1 (lack of drive), DEP2 (dysphoria), DEP3 (self-depreciation), DEP4 (suicidal idea), ANX (anxiety), HEA1 (gastrointestinal sx), HEA2 (neurological sx), HEA3 (general health concerns), and WRK (work interference). WRK was an outcome variable which assumed to represent individual functioning.

Results
Twenty-six percent of the patients showed significant gastrointestinal symptoms, 35.2% for neurological symptoms, and 34.1% for general health concerns. Additionally, females complained more marginal gastrointestinal symptoms than males (females, 34.8%, males, 17.8%, Ï‡2 = 3.39, p = 0.06). The hierarchical model with three steps was significant (F = 15.89, p < 0.001) and incremental explanatory variance was significant at step 2 (Î”R2 = 0.67, p < 0.05). At step 1, neither of gender, age, or education showed significant effect on work interference. DEP1 (lack of drive, Î² = .42, p < 0.001), DEP3 (self-depreciation, Î² = .18, p < 0.05), ANX (anxiety, Î² = .34, p < 0.01), and HEA3 (general health concerns, Î² = .16, p < 0.05) were associated with work interference. There was no significant interaction effect including gender as a moderator.

Conclusion
The results showed that gender difference did not exist in total somatic distress in MDD. However, it was revealed that gastrointestinal symptoms, among the somatic symptoms, were reported more in females as compared to males. As far as work interference concerned, general health concerns maintained incremental effect, independently of depression and anxiety symptoms. The present findings emphasize the caution for clinicians to have in-depth understanding and evaluating of somatic distress in patients with MDD

Keywords: somatic symptoms, major depressive disorder, work interference

THE BURDEN OF TREATMENT SWITCH IN PATIENTS WITH MAJOR DEPRESSION: A US RETROSPECTIVE CLAIMS DATABASE ANALYSIS

Lead Author: Elizabeth Merikle, Ph.D.
Co-Author(s): Genevieve Gauthier, M.S.c., Annie Guerin M.S.c., ClÃ©ment FranÃ§ois, Ph.D., Elizabeth Merikle, Ph.D.

SUMMARY:

Background: Major depressive disorder (MDD) is a common, persistent psychiatric disorder with a significant economic burden. The rate of remission with treatment is low; thus, switching antidepressant (AD) medications is common. This study sought to describe MDD patients in the US who switched to selected ADs, to determine the rates of further treatment changes (switches and discontinuation) and adherence, and to quantify the healthcare costs following treatment switch.
Method: Data were extracted from the Truven Health Analytics MarketScan (1Q2001-4Q2012) database, which contains data on â‰¥25 million individuals

in the US covered by employer-based private healthcare plans. Adults with â‰¥2 MDD diagnoses (ICD-9 codes: 296.2x, 296.3x), who switched from an AD medication to bupropion, citalopram, desvenlafaxine, duloxetine, escitalopram, fluoxetine, fluvoxamine, paroxetine, sertraline, venlafaxine, or vilazodone (index AD), were identified. The index date was the date of first treatment switch occurring on or after January 1, 2012. Continuous enrollment for â‰¥12 months prior to and â‰¥6 months following the index date was required. Patient and treatment characteristics during the 12-month baseline (i.e., pre-index) period are described. Index AD discontinuation (defined as a treatment gap of â‰¥45 consecutive days), treatment adherence (defined as â‰¥80% of days covered with the index AD), and switch rates (from the index AD to another AD) over the 6-month follow-up are reported. Monthly healthcare costs incurred during the 6-month follow-up are also described.
Results: 9,912 patients were included. On average, patients were 45.9 (Â±14.6) years old, and 72.7% were female. A mean of 1.9 (Â±1.0) ADs were prescribed during the 12-month baseline period. On average, patients had been on AD therapy for 230.6 (Â±108.4) days at baseline. The most common comorbidities were anxiety (40.0%), hypertension (28.7%), sleep-wake disorders (19.1%), and chronic pulmonary disease (13.7%). During the 6-month follow-up, 11.5% of patients switched to a different AD, 41.6% discontinued the index AD, and 26.5% discontinued all ADs. The proportion of adherent patients during the first 3 and 6 months post-index was 68.8% and 52.2%, respectively. Over the 6-month follow-up, patients incurred an average total monthly healthcare cost of $1,617 (inflated to 2013 US$; consisting of 41% outpatient, 27% inpatient, 22% pharmacy, and 10% other costs).
Conclusions: Switching ADs is common and a notable financial burden is observed among switchers in the US. The rate of treatment discontinuation is high, and the proportion of adherent patients is suboptimal. Future research is needed to determine which AD switching strategies are associated with the best treatment patterns and the lowest healthcare costs.

BEHAVIORAL AND COGNITIVE DIFFERENCES BETWEEN YOUNG ADULT AT-RISK GAMBLERS WITH AND WITHOUT DEPRESSION

Lead Author: Sarah A. Redden, B.A.
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SUMMARY:

Introduction: Depression is a psychiatric disorder that commonly affects young adults. Gambling, which is an impulsive behavior, can lead to serious problems for young people. Although higher rates of depression have been reported in individuals who gamble compared to the population at large, it is unclear whether this relationship has clinical or cognitive importance. In this study, we examined young adults with risky gambling behavior with and without depression.

Hypothesis: At-risk gamblers with co-occurring depression will have worse gambling severity and make more impulsive decisions on cognitive tasks.

Methods: The study analyzed 77 young adults (ages 18-29) with 'at-risk' gambling behavior. Scores on the Hamilton Depression Scale (HAM-D) were used to assess current level of depressive symptomatology (a score of eight or greater defined current depression). 21(27.3%) of the subjects were classified as depressed and were compared to the remaining 56(72.7%) subjects with no depressive symptoms on a range of measures assessing quality of life, comorbidity, psychosocial dysfunction and gambling severity. The two groups were also compared on various cognitive tasks assessing impulsivity and decision-making.

Results: Depressed 'at-risk' gamblers differed from those without depression on a number of clinical measures. In terms of gambling severity, there was a significant association between greater number of symptoms of gambling disorder and HAM-D scores. Frequency of gambling per week, amount of money lost from gambling, and problems resulting from gambling were not significantly different. Subjects with depression had significantly higher rates of anxiety (p<.001), suicidality (p<.001) and compulsive buying (p=.044). In addition, the depressed subjects demonstrated significantly greater impairments on several cognitive tasks, including tasks assessing the spatial working memory, attention, and executive functioning. No significant difference was found in quality of life between the two groups.

Conclusions: This research suggests that depressed at-risk gamblers differ behaviorally and cognitively from at-risk gamblers who are not depressed. These findings may have implications for treatment interventions.

LURASIDONE FOR THE TREATMENT OF MAJOR DEPRESSIVE DISORDER WITH MIXED FEATURES: A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED 6 WEEK TRIAL

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SUMMARY:

Introduction: DSM-5 introduced a "with mixed features" specifier for major depressive disorder (MDD) when subthreshold manic or hypomanic features are present. Mixed features have been estimated to occur in 20-40% of patients with MDD. There are no established treatments for this patient population; standard antidepressants have not been demonstrated to be effective, and may worsen course and outcome.1 The aim of the current study was to evaluate the efficacy and safety of lurasidone in patients with MDD presenting with mixed (subthreshold hypomanic) features.
Methods: In this multi-regional study, conducted in the US and Europe, patients were required to meet DSM-IV-TR criteria for MDD, with a MADRS score â‰¥26, and to be experiencing 2 or 3 DSM-5 mixed features criteria manic symptoms on most days over at least the 2 weeks prior to screening. Patients with any lifetime history of bipolar I manic episodes, or any mixed manic episodes, were excluded. Eligible patients were randomized to 6 weeks of double-blind treatment with either flexible doses of lurasidone 20-60 mg/d or placebo. Changes from baseline in MADRS total score (primary assessment) and Clinical Global Impression, Severity (CGI-S, key secondary assessment) scales were analyzed using a mixed model for repeated measures (MMRM) analysis. Responder rates (â‰¥50% reduction from baseline in MADRS total score) were analyzed using logistic regression.
Results: Patients were randomized to lurasidone (N=109; baseline MADRS, 33.2), or placebo (N=100; MADRS, 33.3). Treatment with lurasidone was associated with significantly greater improvement compared with placebo from Weeks 2 through 6 on both the MADRS and CGI-S. At Week 6, LS mean change for lurasidone vs placebo on the MADRS total score was (-20.5 vs â€“13.0; P<.001; effect size, 0.80), and on the CGI-S score was (-1.83 vs â€“1.18; P<.001; effect size, 0.60). Week 6 responder rates, for lurasidone vs placebo, were 67.6% vs 33.0%; P<.001; NNT=3. The incidence of adverse events resulting in discontinuation was 2.8% and 5.0%, respectively on lurasidone and placebo. Nausea was the only adverse event that occurred with an incidence â‰¥5% (and greater than placebo) on lurasidone (6.4% vs 2.0%). Treatment with lurasidone vs placebo was associated with the following

endpoint changes in mean weight (+0.67 kg vs. +0.37 kg, respectively), median total cholesterol (+0.5 mg/dL vs. -1.0 mg/dL), triglycerides (-4.0 mg/dL vs. +2.0 mg/dL), glucose (-1.0 mg/dL vs. +1.0 mg/dL), and prolactin (+1.7 vs. -0.1 ng/mL).
Conclusions: In this study, the first ever placebo-controlled trial we are aware of in an MDD with mixed features population, lurasidone demonstrated significant efficacy at multiple primary and secondary endpoints. Lurasidone was well-tolerated, with an overall discontinuation rate that was comparable to placebo. Minimal changes in weight, lipids and measures of glycemic control were observed.
NCT01423240
Sponsored by Sunovion Pharmaceuticals Inc.

PRESCRIBING PRACTICES OF ANTIDEPRESSANT MEDICATIONS FOR TREATMENT OF MAJOR DEPRESSIVE DISORDER (MDD) AMONG INSURED MEMBERS (N=68,394)

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Co-Author(s): Kenneth TreviÃ±o, Ph.D., Patrick Racsa, M.S., John R. Biggan, Ph.D., Dana Gresky, Ph.D., Vipin Gopal, Ph.D.

SUMMARY:

BACKGROUND: Antidepressant medication is often the first line treatment for patients with Major Depressive Disorder (MDD). Although specific prescription guidelines in terms of medication type and dosage have been established, in practice prescriptions are ultimately based on the clinician's judgment.
To date, few studies have evaluated the prescribing practices in clinical practice to determine if and how they differ from established or recommended treatment guidelines.

OBJECTIVE: The purpose of this study was to evaluate the prescribing practices of clinicians, including which antidepressants are most commonly prescribed, as well as the most common dosage of these medications, for the treatment of MDD among members of a managed healthcare organization.

METHODS: Members (N=68,394) were identified who had continuous insurance coverage and had a claim for MDD (ICD-9s: 296.2, 296.3, 311) in 2013, were in a fully insured plan, and between 19 and 90 years of age. Prescription claims from members who filled a prescription for an antidepressant medication in 2013 (N=54,107) were evaluated to determine the most commonly prescribed antidepressant medication, as well as dosing information. Frequencies of prescriptions and percentages of members who were prescribed that drug were calculated for each drug. The most common dosage and percentage of members on that drug that were prescribed the most common dosage were calculated.

RESULTS: Members were predominantly female (N=39,816, 74%), Medicare members (N=48,266, 89%), older adults (M: 67.53, SE: 0.05, Range: 19-90), and received antidepressant treatment (80%). The top 10 most commonly prescribed antidepressant medications were, in order from most frequent to least frequent: Citalopram (N=11,995, 22%), Sertraline (N=10,791, 20%), Trazodone (N=9,501, 18%), Bupropion (N=8,479, 16%), Fluoxetine (N=7,692, 14%), Duloxetine (N=6,808, 13%), Venlafaxine (N=6,345, 12%), Escitalopram (N=6,229, 12%), Paroxetine (N=4,706, 9%), and Mirtazapine (N=4,323, 8%). Per drug, the most common daily dosages were: 20 mg Citalopram (44%), 50 mg Sertraline (31%), 100 mg Trazodone (28%), 300 mg Bupropion (42%), 20 mg Fluoxetine (37%), 60 mg Duloxetine (51%), 150 mg Venlafaxine (32%), 20 mg Escitalopram (45%), 20 mg Paroxetine(38%), and 15 mg Mirtazapine (42%).

CONCLUSION: The application of prescribing antidepressant medications in clinical practice is within recommended guidelines. Future studies should examine prescribing practices between primary care physicians and psychiatrists.

CHRONOTYPE IS ASSOCIATED WITH SEASONAL WEIGHT AND SLEEP DURATION CHANGES IN THE OLD ORDER AMISH

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SUMMARY:

Background: Patients with Seasonal Affective Disorder (winter type), syndromal and subsyndromal, report increased sleep duration and weight gain during the winter season. Several studies have documented that chronotype is associated with seasonality of mood. Weight fluctuation (previously related to changes in sleep duration) has been documented as both a cardiovascular risk factor as well as a marker of severity in recurrent mood disorders. The aim of the present study was to investigate the relationship between chronotype and seasonal sleep duration and weight changes in the Old Order Amish of Lancaster County, PA, a population that does not use network electrical light.

Methods: 489 Old Order Amish adults (47.6% women), with average (SD) age of 49.7(14.2) years, completed both the Seasonal Pattern Assessment Questionnaire (SPAQ) for assessment of seasonality of mood (GSS), and containing independent reports on seasonal sleep duration and weight changes, and the Morningness- Eveningness Questionnaire (MEQ). Linear regression and ANCOVAs were used to analyze associations between seasonal changes (sleep duration and weight) and MEQ (scores and chronotype), with adjustment for age and gender.

Results: After adjustment for age and gender we identified: 1) a negative association between seasonal changes in sleep duration and MEQ scores (p=0.015); 2) higher seasonal variation in sleep duration in the non-Morning chronotype group than in the Morning chronotype group (p= 0.042); c) higher MEQ scores in the group with none-to-minimal seasonal weight changes group (<3lbs) than in the group with marked seasonal weight change group (â‰¥8lbs) (p=0.041).

Limitations include a potential recall bias associated with self-report questionnaires.

Conclusions: Higher seasonal sleep duration and weight changes are associated with lower MEQ scores. Future research will be focused on investigating genetic vs. environmental underpinnings of this association, as well as health implications of low MEQ.

THE BRIEF GENERAL FUNCTIONING SCALE (BGFS): AN INSTRUMENT TO ASSESS FAMILY FUNCTIONING QUICKLY

Lead Author: Gabor I. Keitner, M.D.
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SUMMARY:

Family functioning has been shown to be a significant influence on the onset, outcome and course of many psychiatric and medical disorders. There are no ultra-brief, reliable and valid ways of assessing family functioning. The Family Assessment Device (FAD) is one of the most widely used measures of multiple dimensions of family functioning, but consists of 60 items and is too long to be useful in routine clinical practice. The 12 item General Functioning Scale (GFS) of the FAD has been used as a brief measure of overall family functioning,

but takes at least 5 minutes to complete and another 5 minutes to score. There is a need for a very short measure that can be both administered and scored in a few minutes, allowing immediate access to information on the family for both clinicians and patients. The purpose of the present study was to develop an ultra-brief measure of family functioning that could readily identify perceptions of overall satisfaction/dissatisfaction with family life in order to alert clinicians to the potential need for family interventions. We aggragated data from multiple studies using the FAD (n=3540) and compared scores from individual family members on the 12 item GFS of the FAD, to individual family member scores on the newly created 3 item scale, the Brief General Functioning Scale (BGFS). The BGFS is comprised of the GFS items from the FAD that correlated most highly with the other 11 items on that scale and with the mean of the 60 item FAD. The mean of the 12 item GFS and the mean of the 3 item BGFS correlated .88, while the mean of the 60 item FAD correlated .84 with the mean of the new BGFS. Coefficient alpha for the BGFS was .72, reasonable for an ultra-brief measure. We used the established satisfied/dissatisfied cut-off score of 2.0 for the 12 item GFS to conduct chi square analyses to assess how many individuals were satisfied with their family's functioning using the 3 item BGFS as opposed to the 12 item GFS. The chi square statistic was significant suggesting that the 3 item scale is more sensitive in detecting satisfaction/dissatisfaction with family functioning (Chi square=4.65, p=.03, df=1). These findings indicate that the BGFS provides a reliable assessment of a person's perception of their family's functioning and is a reasonable proxy for both the 12 item GFS and the 60 item FAD when brevity is desired.

A STUDY OF RESILIENCE AMONGST PEOPLE WHO LOST THEIR RELATIVES IN NATURAL CALAMITY: UTTARAKHAND IN NORTHERN INDIA

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SUMMARY:
Natural disasters can be a devastating experience for anyone. Mental disorders are common amongst survivors of natural disasters. Resilience is a significant factor that helps these survivors overcome this traumatic episode. In this study, we attempt to examine whether the level of resilience differs with nature of loss, in this case a natural calamity.
Resilience is one attribute that helps an individual recovers from a disastrous event and allows them to bounce back.. It may determine the level of psychological stress in an individual because resilience is in fact a protective factor and individual with high resilience may have lesser degree of psychological stress.
Resilience's has a strong neurobiological basis and also independent psychobiological construct
Hypothesis

We believe that people who have lost their relatives may have much lower resilience than those who have not
We further believe that level of resilience among people who have faced the natural calamity will have more severe psychological stress after considerable period of time.

The disaster
On June 13, 2013 in Northern India, on the foothills of Mt. Himalaya there was a landslide, which displaced 100,000 pilgrims and took 5000 lives. The disaster was due to heavy rainfall, which was about 375% more than the benchmark of a normal monsoon season. This caused the melting of Chorabari Glacier at the height of 3800 mts and eruption of the Mandakini River.

The study was conducted one year after the landslide.

In a preliminary study we attempted to examine level of resilience amongst people who had lost their relatives in comparison with those who did not.

Trained research officers in mental health from Mumbai went and stayed in the affected region and arranged for local psychiatric help prior to starting the study. Consenting subjects participated.

Clinical details, level of resilience; psychological stress, life events and effect of trauma were assessed between two groups of subjects.

Results:

The level of resilience was low and closely related to psychopathology in both the group of survivors.

Individuals who had lost their relatives showed relatively very poor resilience, (CD-RISK 20.61 (SD 8.33) vs. 40.57 (SD 13), p=>0.01); had high levels of stress (GHQ, 27.44 (SD 3.82) vs. 23.36 (SD 5.44), p=0.001). Need for high social support (11 (SD 30.5) vs. 2 (SD 7.1) p=0.021) did not express any significantly higher requirement for financial support.

Level of resilience was negatively correlated with experience of adverse life event in previous year and number of relatives lost.

Conclusion

Resilience is a personal characteristic, which is severely affected with experience of disaster. Individuals who were already vulnerable suffered the most. People who had lost relatives showed very poor level of personal strength and need for better social support and specific psychological intervention

PSYCHIATRIC EMERGENCY SERVICES (PES) PATIENT EXPERIENCE SURVEY (PES) PRE-QUALITY INTERVENTION

Lead Author: Hava E. Starkman, B.Sc.
Co-Author(s): Janet Patterson, M.D., Pam Johnston, R.N.

SUMMARY:

Acute Mental Health (AMH), specifically Psychiatric Emergency Services (PES) is a medical field that requires greater research in order to effectively improve patients' quality of care. Current literature suggests that, questionnaires are useful to assess the quality of care provided to AMH patients. Developing, administering and analysing a PES Patient Experience Survey (PES-PES) will help identify areas of high and low patient experience. At the end of a patients' PES treatment, they were given the opportunity to complete the PES-PES. Following a three month collection period, the survey data was compiled and analyzed by members of the research team. This is a 'pre-quality intervention' study because the results provide indications of low and high areas of patient experience in order to influence the direction of care changes in PES. The results will be assessed for validity and reliability in order to establish the efficiency of the PES-PES as a psychometric tool for patient experience in psychiatric hospital emergency settings. Following data analyses, interventions will be implemented in PES areas of low experience. A second stage study will then be executed through 'post-quality intervention' surveys to compare pre and post patient experience to establish a standard of care in PES. The data collected from this Patient Experience Survey clearly demonstrates areas in the St. Joseph Hospital psychiatric emergency department that can be improved or altered to improve the patient experience and in turn improve care. The preliminary results show that patients had overall good experience (Figure 3) while still having negative mental health experiences. This suggests that even if a patients' mental or physical health is poor they can still view their experience in psychiatric emergency departments as helpful, supportive and positive. This can influence their willingness to seek support from PES in the future or tell others to seek support.

UNDETECTED-UNTREATED: EATING DISORDERS AMONG HOSPITALIZED PSYCHIATRIC PATIENTS: A RETROSPECTIVE ELECTRONIC DATA ANALYSIS OF 8000 ADMISSIONS

Lead Author: Robbie Campbell, M.D.
Co-Author(s): Jill Mustin-Powell RN, Miky Kaushal MD, Larry Stitt MSc, Amresh Srivastava MRCPsych FRCPC

SUMMARY:
Background: Eating disorders are a common comorbidity (up to 80 to 97%) in psychiatric patients. The illness starts at an early age, remains undetected and runs a chronic course with prolonged hospitalization. It has high rates of morbidity and mortality, including suicide, and leads to an economic drain of the system. The objective of this study was to examine the incidence of eating disorders, its behavioral traits and nutritional details of the patients admitted in RMHC London.
Methods: This study was carried out at RMHC London, in which the electronic database of 8146 hospitalized patients from the last 4 years was analyzed for charted details about eating disorders. 376 charts were excluded due to missing information and 7770 were analyzed. The following details about eating disorders were obtained from Resident Assessment Instrument (RAI) records:1) DSM IV diagnosis, 2) nutritional details, and 3) indicators of eating disorder, which includes specific details about bulimia, weight loss and weight gain.
Results: We observed that only 0.4% recorded a DSM IV diagnosis of an eating disorder. The incidence of bulimia was 1.9% and general indicators of eating disorders varied from 1.9 to 2.6%. There was a significant correlation between diagnosis of eating disorder and 'indicators of eating disorder' and other nutritional details. Indicators of eating disorder recorded in section N3 significantly predicted the presence of a DSM IV diagnosis of eating disorder.
Conclusions: Eating disorders, its behavioral traits and nutritional details are either not recorded or remain undetected. This needs a serious electronic database review.

HOT AMBIENT TEMPERATURES ARE ASSOCIATED WITH HIGHER PREVALENCE OF PSYCHIATRIC DISORDERS IN PLACES WITH EQUAL SUNSHINE

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SUMMARY:
Background: Serotonin (5-HT) is strongly implicated in seasonal fluctuations of psychiatric disorders. Whether this relates to heat and/or light is uncertain. Norden hypothesized in 1990 that sunshine increases while heat decreases 5-HT neurotransmission. Evidence now supports that light augments 5-HT, but the potential effect of heat is largely ignored. We hypothesized that given equal sunshine prevalence of psychiatric disorders would be higher in areas with higher temperature, and that this same association would be weaker in the case of general medical disorders. We further hypothesized that within psychiatric disorders, conditions generally responsive to SSRIs: depressive disorders, anxiety disorders, and intermittent explosive disorder, would show a stronger association with ambient temperature than other psychiatric disorders. Method: Insolation (solar energy reaching a given area) - provided through NASA - and temperature (T) data were collected in areas surveyed for the National Comorbidity Study - Replication (NCS-R). We studied one ethnicity to avoid a major demographic confound, and used the largest sample - white, non-Latinos. We were fortunate in being able to easily create two groups of equal mean sunshine. The mild T group (n=549) lived in areas with a

mean T within 1 degree of 65 F (the standard reference T defining heating and cooling degree days), the hot group (n=755) > 66.0 F. Results: Of 16 psychiatric disorders, all but one had higher prevalence in the hot group (mean RR 2.0). In contrast, of 21 general medical disorders, prevalence was equally likely to be higher or lower. These distributions differed significantly (p<.01). Elevations were seen with PTSD (p<.02), agoraphobia - both with and without panic disorder (each, p<.02), and intermittent explosive disorder (p<.04). Similar near-significant associations (p<.1) were seen for four others.The mean RR for these 11 disorders was 2.36. In contrast, none of the other psychiatric disorders showed significant increase with heat (mean RR 1.20). The prevalence rates for most disorders in the hot (and sunny) group were similar to overall NCS-R rates; however, the mild group generally showed markedly lower rates. Discussion: While association can never establish causation, these results may be important in several respects. The more than two-fold differences in RR found for some disorders suggests a major influence of temperature, and indicates the importance of further study - especially in light of climate change. It also shows that heat and light must be investigated jointly as their actions appear to be opposing and this can mask effects. Finally, our findings are consistent with the hypothesis that 5-HT function may be compromised by thermoregulatory stress in the form of high mean temperature. This fits well with known roles of 5-HT in both thermoregulation and stress adaptation generally. Laboratory studies concerning the effects of heat on 5-HT would be of great interest.

INTERPROFESSIONAL ETHICS IN END OF LIFE CARE

Lead Author: Cheryl Person, M.D.
Co-Author(s): Rebecca Wiatrek, M.D., Jeanette Ferrer, D.O., Andrea Taylor, Ph.D., Kate Sexton, LCSW, Enstin Ye, Debbie Lew

SUMMARY:

The primary objective of this study was to determine if there were differences in the prioritization of four core ethical principles by the different disciplines delivering end of life care to a vulnerable patient population. We developed and validated a survey instrument which assessed various ethical principles and prioritizing them in relation to five different end of life case-based scenarios. We surveyed 124 participants (sent 200, received 124 for response rate of 62%) from the following groups: ethics committee members, palliative care physicians, internal medicine hospitalists, medical oncologists, surgical oncologists, intensivists, mental health, spiritual care, nursing staff, social work from an under-resourced hospital delivering end of life care.

Results: Collapsing the categories into nursing (RN) physicians (MD), and other staff (O) there were significant differences in most important ethical principle chosen by these groups in two different scenarios. Scenario 1 had a=a diverting colostomy due to pancreatic cancer with resultant bowel obstruction. Patient wanted a reversal of procedure, for cosmetic reasons, which was not possible. RNs chose beneficence, MDs chose non-maleficence as most important principle (Chi-Square= 12.51, p=0.05). In Scenario 2 an 18y/o male was informed that despite aggressive treatment, his acute myeloblastic leukemia had progressed. Patient would like to both defer treatment to his mother (who wanted continued aggressive treatment despite poor prognosis) and to go home to Mexico to visit family before his death. MDs chose non-maleficence, and O chose autonomy as most important principle (Chi-Square=13.01 p=0.04). There were also statistically significant differences between RN, MD, and O on belief in heaven (chi-square=38.03, p<.001), belief in miracles (chi-square=26.20, p,.001), and belief in medical miracles (chi-square=23.74, p<.001).

Conclusion: Interprofessional ethics in end of life care is likely a complex blend of professional training and individually held beliefs which manifest in specific medical contexts. Teams should allow time for members to express freely their thoughts, beliefs, and utilize discussion of ethical principles to alleviate interprofessional conflict during this complex time.

HEALTH CARE UTILIZATION AND MEDICATION COST SAVINGS IN PATIENTS RECEIVING COMBINATORIAL PSYCHIATRIC PHARMACOGENOMIC TESTING

Lead Author: Raymond A. Lorenz, Pharm.D.
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SUMMARY:
Purpose: The use of combinatorial psychiatric pharmacogenomics (CPGx) was shown to improve antidepressant response, but the economic impact of this approach is also extremely important. GeneSight uses a CPGx multi-gene approach to produce a personalized interpretive report that categorizes psychotropic medications into three groups based on objective, evidence-based gene-drug interactions. The goal of the two studies discussed here was to evaluate the pharmacoeconomics and clinical utility of GeneSight.
Methodology: In the first study, healthcare utilization over one year were recorded retrospectively from chart records of 96 subjects who were under psychiatric care. Eight measures of healthcare utilization were assessed based on the category of the highest caution level of the medications the patient was taking. In the second study, 2,176 GeneSight tested patients were prospectively compared with 10,880 propensity matched treatment as usual (TAU) patients who were not tested. Comparisons between the groups included overall medication costs over one year and adherence rates calculated using proportion of days covered (PDC).
Results: In the retrospective trial, patients who were prescribed medications identified by GeneSight as the most problematic for that patient ("red bin") versus those receiving less problematic medications ("green" or "yellow" bin) showed significant outcomes on three measures of healthcare utilization. Red bin patients had significantly more medical absence days (p=0.039), more healthcare visits (p=0.014), and more disability claims (p=0.013) than patients given yellow or green bin medications. Additionally, patients in the red bin had a greater mean annual healthcare cost of $8627 versus $3453 in the green bin (p=0.024). In the prospective trial, the annualized difference in medication spend favored GeneSight by $1,035.60 compared to non pharmacogenomic-informed standard of care. The PDC prior to GeneSight testing was 0.63 versus 0.74 after testing, showing a statistically significant improvement in adherence rates (p<0.0001). Additionally, the time to discontinuation in the GeneSight group post-testing was 2.6 times longer than the standard of care group.
Conclusions: Patients who received red bin medications had greater healthcare utilization and overall healthcare cost than patients who received yellow or green bin medications. Further, patients who received GeneSight testing had improved adherence while concomitantly saving over $1000 per year in medication spend. Overall, utilizing combinatorial psychiatric pharmacogenomics has significant implications for improving costs for psychiatric patients.

ASSOCIATION BETWEEN DOPAMINE RECEPTOR D2 (DRD2) VARIATIONS RS6277 AND RS1800497 AND COGNITIVE PERFORMANCE ACCORDING TO RISK TYPE FOR PSYCHOSIS

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SUMMARY:
Background: While there has been significant research on genes and cognitive intermediate phenotypes in those with psychotic disorders, there is limited research on these associations in those at risk for psychotic disorders.

Methods: We measured the association between established psychosis risk variants in dopamine D2 receptor (DRD2) and cognitive performance in individuals at age 23 years and explored if associations between cognition and these variants differed according to the presence of familial or clinical risk for psychosis. The subjects of the Oulu Brain and Mind Study were drawn from the general population-based Northern Finland 1986 Birth Cohort (NFBC 1986). Using linear regression, we compared the associations between cognitive performance and two candidate DRD2 polymorphisms (rs6277 and rs1800497) between subjects having familial (n=61) and clinical (n=45) risk for psychosis and a random sample of participating NFBC 1986 controls (n=74). Cognitive performance was evaluated using a comprehensive battery of tests at follow-up, reduced to three key cognitive factors using factor analysis.

Results: Principle components factor analysis supported a three-factor model for cognitive measures. The minor allele of rs6277 was associated with poorer performance on a verbal factor (p=0.003) but this did not significantly interact with familial or clinical risk for psychosis. The minor allele of rs1800497 was associated with poorer performance on a psychomotor factor (p=0.016), though only in those at familial risk for psychotic disorders (interaction p=0.027).

Conclusion: The effect of two DRD2 SNPs on cognitive performance may differ according to risk type for psychosis, suggesting that cognitive intermediate phenotypes differ according to the type (familial or clinical) risk for psychosis.

CYP-GUIDES: A RANDOMIZED CONTROLLED TRIAL TO EVALUATE PHARMACOGENETIC DECISION SUPPORT IN INPATIENTS WITH DEPRESSION

Lead Author: Gualberto Ruano, M.D.
Co-Author(s): Richard L. Seip, Ph.D., John W. Goethe, M.D., Stephen Thompson, M.S., Joseph Tortora, B.S., Saskia Campbell, Bonnie L. Szarek, R.N., Harold I. Schwartz, M.D.

SUMMARY:
Introduction: The CYP2D6 gene which encodes the cytochrome p450 2D6 enzyme is highly variable with 22 alleles accessible for clinical genotyping. Of these, 11 produce null, 5 produce subnormal, and 4 produce supranormal enzyme function. Recognizing that most patients carry at least one mutation with a functional implication for metabolic capacity and that more than half of the U.S.-marketed antidepressants are metabolized through the cytochrome 2D6 pathway, we describe a new clinical trial, just underway, to test the hypothesis that provision of medication based on the functional status of the patient's CYP2D6 enzyme inferred from genotype results within 48 hours of admission to treating clinicians, can affect treatment.

Methods: This 5 year randomized clinical trial (NCT02120729) funded by AHRQ will enroll 1500 just-admitted inpatients with diagnosis of major depressive disorder (MDD). CYP2D6 genotype analysis includes 20 polymorphisms that result in an enzyme with sub-normal or supra-normal function. 500 patients are assigned to "treatment as usual" psychotropic therapy (Group S) for whom CYP2D6 genetic

information is determined but not transmitted to the treating clinician, allowing psychotropic therapy to be empirically determined, and 1000 to genetically guided therapy (Group G). Clinicians receive clinically actionable guidance through alerts posted in Electronic Health Records within 48 hours of admission. For patients in Group G who are poor or rapid metabolizers, medications primarily metabolized by the CYP2D6 enzyme are proscribed. For clinicians treating Group S patients, any medications may be prescribed. The primary outcome is hospital length of stay and the secondary outcome, the frequency of 30 day hospital readmission.

Results:
To date, 274 patients have been enrolled including 157 randomized to Group G, and 117 to Group S. Mean (SD) age was 42.1 (16.7) years. Genotype analysis revealed 38 patients with two alleles that confer normal function (13.9%), and 236 patients (86.1%) with one or more altered alleles, including 138 with one and 98 with two mutated alleles. Mean number of medications metabolized through CYP2D6 at discharge was 1.0 (1.2) drugs per patient. Mean hospitalization length of stay was 6.7 (4.4) days, excluding 3 outliers with a protracted stay (>23 days). Primary outcome analysis will be available for APA.

Conclusions:
This pioneering prospective, randomized clinical trial of genotype-guided antidepressant therapy is underway. Genotype analysis of psychiatric inpatients with MDD reveals that 86% carry 1 or more mutated alleles with potential to affect antidepressant metabolism and clinical decision making. The common variability in the CYP2D6 gene in psychiatric inpatients with depression provides a context suitable to evaluate genotype-guided therapy.

PERCEIVED SELF-DIRECTED TREATMENT AND RIGHT AMOUNT OF FAMILY INVOLVEMENT ARE ASSOCIATED WITH INCREASED PATIENT SATISFACTION IN PSYCHIATRIC INPATIENTS

Lead Author: Cheryl A. Kennedy, M.D.
Co-Author(s): Ketan Hirapara, M.B.B.S., Shazia Naqvi, M.B.B.S., Samina Mirza, M.D., Jagadeesh Batana, M.D., Humza Haque, B.S., Donald Ciccone, PhD

SUMMARY:
Background: Inpatient psychiatric services present many challenges to patients and providers alike. Service providers look for ways to enhance the treatment experience. The Joint Commission ranks 'patient satisfaction' as a key quality indicator. We assessed inpatients for factors that might be associated with higher levels of satisfaction. Our inner city academic medical center hospital has 34 inpatient psychiatric beds and accepts both voluntary and involuntary patients (most are involuntary: 52%). The majority is male (55.5%) and African American (68%). Others are mostly white (18%) and Latino (15%) with an average length of stay of 10 days. The most common diagnoses are schizophrenia, schizoaffective disorder, and bipolar illness. Many of our patients have comorbid substance use disorders along with co-occurring medical conditions such as diabetes, HIV/AIDS, and hepatitis. Of the third that had positive urine toxicology screens, 31% were positive for multiple drugs of abuse. At issue in the present study was whether patients with higher levels of perceived self-involvement in directing their own care had higher levels of satisfaction. We also addressed the related issue of whether perceived family involvement was associated with patient satisfaction.
Methods: With Institutional Review Board approval and participant consent we administered a patient satisfaction survey to 400 patients who were just about to be discharged. The survey included items about perceived personal involvement in treatment decisions as well as perceived

involvement of family members in the treatment planning process. A patient satisfaction scale elicited perceived satisfaction ratings along a 10-point scale ranging from 1, denoting little or no satisfaction with treatment, to 10, denoting a high level of satisfaction. A Chi-Square test was used to determine whether there was a statistically reliable association between satisfaction ratings and perceived involvement in treatment planning.
Results: Patients who reported 'always' being involved as much as they wanted in treatment decisions (49.75%) reported significantly higher levels of satisfaction compared to those with lower levels of involvement ($p<0.001$). Similarly, patients whose families were involved in treatment 'just the right amount' (49%) were also significantly more satisfied with care ($p<0.001$).
Discussion: Patient autonomy may play an important role in determining whether mentally ill patients are satisfied with their inpatient psychiatric treatment. This may be especially applicable to the chronic and persistently mentally ill. These results highlight the importance of fostering self-involvement in treatment decision-making as well as the potential role of family involvement in enhancing satisfaction with psychiatric care. Further analysis will examine other factors that may be associated with patient satisfaction.

MEDICAID MANAGED CARE AND DRUG UTILIZATION FOR PATIENTS WITH SERIOUS MENTAL ILLNESS

Lead Author: Jacqueline Pesa, M.P.H., Ph.D.
Co-Author(s): Aaron L. Schwartz, Jacqueline Pesa, Ph.D., Dilesh Doshi, PharmD., John Fastenau, MPH, Seth A. Seabury and David C. Grabowski, Ph.D..

SUMMARY:

Background: State Medicaid programs are under increasing pressure to contain pharmaceutical spending without restricting necessary care. Many states have attempted to limit spending through greater Medicaid managed care penetration, which rose from 9.3% nationally in 1991 to 74.9% in 2011. It is not clear how this expansion has affected beneficiaries with serious mental illness (SMI), a vulnerable population increasingly subject to care and utilization management. This study assesses whether states' levels of Medicaid managed care were associated with their level of psychotropic prescription use for the SMI population.

Methods: Historical data were collected for the 50 US states and the District of Columbia from 1991-2011. These data consisted of Medicaid managed care penetration rates from the Centers for Medicare and Medicaid Services annual enrollment reports, drug utilization and spending rates from the annual Medicaid State Drug Utilization Data files, and sociodemographic and health system characteristics from the Area Health Resource File and Current Population Survey. SMI frequency was estimated using the National Surveys on Drug Use and Health. The primary study outcomes-the annual rates of SMI prescription use and spending for the SMI population-were calculated using two alternate definitions of SMI prescriptions: a narrow definition including only antipsychotic medications and a broader definition that included additional drugs with primary psychiatric indications. Pooled cross-sectional and panel data linear regression models assessed the association between state prescription outcomes and penetration rates, controlling for secular trends and various state characteristics.

Results: Our sample consisted of 1,032 state-year observations. Medicaid managed care penetration rates averaged 50.7% across the study period, ranging from 0% (Alaska) to 89.8% (Arizona). Annual prescription spending, broadly defined, averaged $2,770 per beneficiary with SMI, ranging from $462 (New Mexico)

to $5,707 (Connecticut). Relative to a baseline of zero Medicaid managed care penetration, having 100% of Medicaid beneficiaries in managed care was associated with 30.7% fewer Medicaid SMI prescriptions using the broad definition of SMI and 37.0% fewer using the narrow definition. Similarly, full managed care penetration was associated with 31.8% lower Medicaid drug spending using the broad definition and 29.2% lower drug spending using the narrow definition. Results of panel data models were statistically uninformative, with confidence intervals containing both null and large effects.

Conclusion: States with higher Medicaid managed care penetration have had lower spending on SMI drugs. Future studies should address whether this association is causal, and whether any effects of managed care on mental health prescription utilization and spending reflect improved care coordination or worsening access to valuable care for the population with SMI.

USE OF PEER NAVIGATORS IN ENGAGING CONSUMERS SUFFERING FROM CO-OCCURING SUBSTANCE USE DISORDERS

Lead Author: Manish Sapra, M.D.

SUMMARY:

Background: Patients with untreated substance use disorders (SUDs) are at risk for frequent emergency
department visits and repeated hospitalizations. This project is being conducted to facilitate entry of these patients to SUD treatment after discharge . Patients identified as having hazardous or harmful drug consumption receive bedside assessment with motivational interviewing and facilitated referral to treatment by a peer who has lived experience of suffering from substance use disorder. This project is a collaboration between a variety of stakeholders, including Allegheny County Department of Human Services, offices within the Pennsylvania Department of Public Welfare, local Medicaid managed care physical health and behavioral health plans, and area hospitals. Western Psychiatric Institute and Clinic (WPIC) of University of Pittsburgh Medical Center (UPMC) has started this pilot that will include intervention planning, implementation, and evaluation to address this issue. A grant of $300,000 is supporting peer navigators at the UPMC Mercy, UPMC McKeesport and UPMC East hospitals for 2 years.

Methods: Program-level data on treatment entry after discharge will be examined . Insurance claims will be reviewed for consumers who entered treatment after discharge . We will study any effect on Readmissions or utilization of services. Patient satisfaction and Staff attitude to a new service will be studied.

This Paper presents early data and experience from this project which is being conducted in three hospitals in Pittsburgh

PSYCHOSOCIAL PREDICTORS OF MULTIVITAMIN ADHERENCE AFTER BARIATRIC SURGERY

Lead Author: Supreet Sunil, B.Sc., M.B.A.
Co-Author(s): Vincent Santiago, Lorraine Gougeon, Katie Warwick, Allan Okrainec, M.D., Raed Hawa, M.D., Sanjeev Sockalingam, M.D.

SUMMARY:

Introduction:

Multivitamin therapy compliance in bariatric aftercare is essential to prevent nutrient deficiencies; however, rates of multivitamin adherence has been as low as 30% 6-months post-surgery. Literature suggests non-adherence to such prescribed medication regimes can be linked to socioeconomic, psychological and social support factors. Here we aim to identify how these factors affect multivitamin

compliance in post-surgical, bariatric patients specifically.

Methods:

A total of 71 patients who underwent bariatric surgery were assessed 6 months post-surgery. Patients were administered a questionnaire collecting demographic information (age, gender, relationship status, living situation, work, income, educational level), generalized anxiety, depressive symptoms, relationship (attachment and avoidance) style, self-reported adherence. Variables were compared between patients who were adherent and non-adherent as per self-report using a Student's t-test. Statistical significance was determined at $p<0.05$.

Results:

On average, patients adherent to post-surgery multivitamins were older (46 versus 41 years old; $p = 0.05$), but were not different than non-adherent patients with respect to living situation, work, income or education level. Non-adherent patients did not have significantly higher scores on the questionnaires for generalized anxiety, depressive symptoms, or avoidant behaviors. However, non-adherent patients displayed greater attachment anxiety than their adherent counterparts ($p=0.0303$).

Conclusions:

This is the first study to demonstrate that attachment anxiety is associated with poor multivitamin adherence in the post-surgical bariatric population. This result is concordant with recent literature that has demonstrated attachment anxiety is associated with poor adherence to dietary recommendations in bariatric patients 6-months post-operatively. Pre-surgical screening for attachment anxiety could facilitate early interventions to promote better bariatric aftercare in this group.

IMPROVING ACCESS TO CHILDRENâ€™S MENTAL HEALTH CARE: A COLLABORATIVE CARE MODEL OF CHILD PSYCHIATRY AND PRIMARY CARE PEDIATRICS

Lead Author: Mary T. Gabriel, M.D.
Co-Author(s): Libbie Stansifer, M.D., Tiffany Thomas-Lakia, M.D.

SUMMARY:
Child and adolescent psychiatric disorders are common but inadequately addressed by the existing health care system. Approximately 80% of children and adolescents who are in need of treatment do not receive mental health services. For families that do seek services, 50% terminate treatment prematurely due to lack of access, lack of transportation, child mental health professional shortages, and stigma related to mental health disorders. The average delay between onset of symptoms and biopsychosocial intervention for children is between 8 and 10 years-critical developmental years in the life of a child. With changes in healthcare delivery and the movement towards coordinated care through a health home, it is important to consider the unique needs of children and adolescents with mental illness. The pediatric health home represents an opportunity to increase access to mental health services through the integration of child psychiatry into the primary care setting. In an effort to help residents to better recognize and treat childhood mental health concerns, this project places child and adolescent psychiatry faculty and fellows within the pediatric primary care clinic to provide consultative services for referred patients and small group teaching to pediatric residents. We seek to increase the scope of collaboration, to both enhance pediatricians' comfort and skills in managing mental health concerns, as well as improve access to more specialized treatment when needed.

The results of this program demonstrate the significance of innovations in collaborative care. Improvement in quality of care is demonstrated by timely appointments with specialty care that positively affect outcomes in the patient's quality of life, including improvement in interpersonal relationships, academic performance, and self-perception. Cultural changes occur on 2 different levels. First, by having mental health services available within the primary care environment, mental health care becomes normalized within the general population, creating a paradigm shift in the public's perception of mental illness and resulting in more timely care without the obstacles of stigma and judgment. Second, by having more ready access to child psychiatry, both for consultation and for guidance and coaching, pediatricians can begin to feel more comfortable and competent in caring for children and adolescents with psychiatric illness, again increasing availability of mental health care in an environment in which the dearth of child psychiatrists severely limits access to mental health care and results in poorer outcomes for these patients. Moreover, such approach to systems of care creates another paradigm shift in the medical profession in which care of a pediatric patient, rather than a siloed activity, becomes a collective responsibility of a pediatric care team.

PRELIMINARY RESULTS FROM AN I.M.P.A.C.T. MODEL IMPLEMENTATION IN A FOUR SPECIALTY TRAINING CLINIC

Lead Author: Shawn B. Hersevoort, M.D., M.P.H.
Co-Author(s): Andrew Goddard, M.D.

SUMMARY:

Background/Objectives: Between May 2013 and November 2014 the UCSF-Fresno department of psychiatry developed and implemented an integrated mental health service based on the highly successful University of Washington I.M.P.A.C.T. model of collaborative care. This developing interface between specialties is becoming increasingly important in the era of affordable and accountable care. Our application is unique in that we are working in four separate resident run clinics, internal medicine, family practice, OBGYN, and pediatrics, as well as with a severely socioeconomically disadvantaged patient population. The teaching program includes a didactic series geared to primary care residents, weekly supervision, and ongoing as needed on-call consultation. Our initial goals were to demonstrate participation from primary care by showing increased screening frequency, as well as program effectiveness by a positive trend in population-based improvement in depression scores.

Methods: Between May 1st 2013 and November 1st, 2014, all patients arriving for primary care provider visits were asked to fill out a PHQ-9 depression screening. A report was then generated by our business office providing us with total screenings done and average screening scores per clinic per month.

Results: Screening frequency increased from an average of 459 monthly at initiation (range 118-885) to 602 monthly at the time of study (range 185-992). Family medicine PHQ-9 scores improved from an average of 9.68 Â± 7.88 to 5.41 Â± 6.03, internal medicine from 11.55 Â± 8.11 to 9.15 Â± 7.43, OBGYN from 6.02 Â± 6.53 to 5.37 Â± 6.62, and pediatrics from 4.77 Â± 5.32 to 4.02 Â± 4.78. Scores in family and internal medicine are statistically significant (P values both < 0.0001) and pediatrics and OBGYN are not (P values 0.18 and 0.14).

Conclusions: Depression screenings have increased in all four clinics over the implementation period demonstrating increased participation from the primary care departments. Mean PHQ-9 depression scores have improved in all four clinics

consistent with overall population-based improvement and initial program effectiveness. Lack of more robust improvement in pediatrics and OBGYN may be due to low initial screening values and less active mental health interventions in those departments.

COGNITIVE AND CARDIOVASCULAR FITNESS IN PATIENTS WITH SCHIZOPHRENIA

Lead Author: Helene Speyer, M.D.

SUMMARY:

Cognitive and cardiovascular fitness in patients with schizophrenia

Helene Speyer, MD, Merete Nordentoft, professor.

Background: From the introduction of the term dementia praecox in 1891, schizophrenia has been recognized as a deteriorating disorder with cognitive decline, as well as premature development of cardiovascular disease, leading to a hypothesis of accelerated aging. An association between metabolic disturbances and cognition is well described, while cardiovascular fitness is believed to be protective, potentially mediated via BDNF.

Hypothesis: We hypothesize an association between metabolic risk factors, cardiovascular fitness and cognition.

Methods: 361 patients, aged 18 to 68, with a diagnosis in the schizophrenia spectrum and increased waist circumference (>88 cm/F, >102 cm/M) were recruited from the CHANGE trial. Information on cognition (BACS), cardiovascular risk factors (blood pressure, lipids, HbA1c) cardiovascular fitness (Vo2max), medication, education and life style were collected. Pearson`s correlations, univariate and multivariate regression were used to asses associations, evaluating the contribution of each dependent factor to cognitive deficits.

Results: We consistently found associations between fitness and cognition both in global score and three of the subdomains. HbA1c was associated to global composite score and one of the subdomains.

Discussion: Fitness and HbA1c was related to cognitive deficits, even though we adjusted for medication, education, and diet, smoking and physical activity. Thus, it seems unlikely, that the observed associations can be explained by unhealthy lifestyle habits chosen by individuals with severe cognitive deficits, or mediated by higher daily doses in severely ill. The fact that fitness and not fatness were predictors of cognition indicates that we should focus more on lack of exercise, and less on obesity. The relationship between HbA1c and cognitive functioning, underlines the importance of specialized attention on psychiatric patients with comorbid diabetes.

Conclusion: Targeting cardiovascular fitness to reduce cognitive decline seems a promising approach, potentially preventing disability in patients with schizophrenia. However, due to the cross-sectional design of this study, a bidirectional relationship can still not be ruled out, and longitudinal studies are required.

RELATIONSHIP OF VITAMIN D IN DEPRESSED ADOLESCENTS, ADOLESCENTS WITH FRACTURES AND NORMAL CONTROLS

Lead Author: Sarosh Khalid-Khan
Co-Author(s): Marina Kanellos-Sutton, NP, Chloe Sutton, BSc Rupy Johal, MD, Lindsay Davidson, MD, FRCPC, Jonathan Lau, MD Dan Borschneck, FRCPC, David Saleh, FRCPC

SUMMARY:

Introduction
Vitamin D has effects on the skeletal system where it enhances the absorption of

calcium and phosphate. Recently, research has shown individuals with deficient vitamin D were more likely to have depression than those with sufficient levels. No study has been done to compare the levels of vitamin D in both populations against normal controls.

Objective

Observational study to compare the relationship of serum Vitamin D levels in 150 adolescents (12-18 years) with depression, fractures, and normal controls.
Participants will undergo: K-SADS , Beck Youth Inventory, a pictorial nutrition questionnaire, PEDS QL Multidimensional Fatigue Scale, and questionnaires for exercise, bone health, a sun exposure, demographics and a WHO-5 Well being Questionnaire. Participants will have Vitamin D 25-OH levels drawn.
Results: Direct relationship observed with vitamin D levels and depression and fracture patients but not in normal controls

This could suggest a new and safe potential therapy for adolescent depression or for secondary fracture prevention

SOCIAL SUPPORT MODERATES THE RELATIONSHIP BETWEEN PAIN AND ANXIETY IN A VETERAN SAMPLE

Lead Author: Randy A. Boley, B.A.
Co-Author(s): Elizabeth C. Kaiser, M.A., Niranjan S. Karnik, M.D., Ph.D, Alyson K. Zalta, Ph.D.

SUMMARY:

Background: The positive association between pain and psychopathology has been well documented. This relationship is particularly relevant in veteran samples where rates of pain and psychopathology are elevated. Social support is also an important predictor of psychopathology and evidence suggests that social support may buffer against the negative impact of pain. The goal of the present study was to examine whether social support moderates the relationships between pain and symptoms of depression, anxiety, and stress in a sample of military veterans. We hypothesized that the relationship between pain and psychopathology will be stronger for individuals with low social support and weaker for individuals with high social support.

Methods: Data were drawn from a group of military veterans (N=46) who enrolled in non-VA outpatient mental health clinic. Each veteran completed self-report measures of social support, depression, anxiety (i.e., physiological arousal), stress (i.e., tension), and pain intensity. Linear regression analyses were performed to examine the main effects of pain and social support and the interaction of pain and social support on self-reported depression, anxiety, and stress.

Results: In the regression model predicting depression, there were significant main effects of pain intensity (B=5.36, SE=1.50, p=.001) and social support (B=-6.03, SE=1.54, p<.001), but no interaction of pain and social support (B=-.846, SE=1.41, p=.550). For the model predicting anxiety, there were also significant main effects of pain intensity (B=2.94, SE=1.40, p=.042) and social support (B=-4.30, SE=1.43, p=.005) as well as a significant interaction of pain and social support (B=-2.66, SE=1.31, p=.049). For the model predicting stress, there were significant main effects of pain intensity (B=4.07, SE=1.53, p=.012) and social support (B=-4.28, SE=1.50, p=.007); the interaction of pain and social support was shown to have trending significance (B=-2.40, SE=1.41, p=.098). The interaction effects for anxiety and stress were in the expected direction such that the relationship between pain and distress became weaker as social support increased.

Conclusion: Higher levels of social support appear to buffer against the effects of pain

on anxiety and stress in this small sample of military veterans. Future studies should examine these relationships with a larger sample to lend confidence to these findings. Moreover, future research should explore which types of social support have the greatest impact on anxiety and stress in military samples in order to develop translational interventions in this at-risk population.

DEXTROMETHORPHAN QUINIDINE FOR PSEUDOBULBAR AFFECT SECONDARY TO ALZHEIMER'S DISEASE/DEMENTIA: EFFECT ON MOOD SYMPTOMS IN PRISM-II DEMENTIA COHORT

Lead Author: Andrew J. Cutler, M.D.
Co-Author(s): Rachelle S. Doody, M.D., Ph.D., Stephen D'Amico, M.D., Paul Shin, Fred Ledon, Charles Yonan, PharmD, Joao Siffert, M.D.

SUMMARY:
Objective: Pseudobulbar affect (PBA) occurs secondary to neurologic conditions affecting brain and is characterized by frequent, uncontrollable laughing/crying episodes that are unrelated to mood or social context. Dextromethorphan/quinidine (DM/Q) is approved to treat PBA regardless of neurologic etiology based on phase III trials in patients with ALS or MS. PRISM II evaluates effectiveness, safety, and tolerability of DM/Q for PBA secondary to dementia, stroke, or traumatic brain injury. The dementia cohort completed enrollment; primary results have been reported. Because patients with PBA sometimes experience depressive symptoms, the 9-item Patient Health Questionnaire (PHQ-9) was assessed as additional outcome. The PHQ-9 ranges 0 to 27; higher scores indicate greater depression severity.
Methods: PRISM II is open-label, 12-week, US multicenter trial. The dementia cohort included patients with AD, vascular, Lewy Body, or frontotemporal dementia, Mini-Mental State Examination [MMSE] â‰¥10, and clinical diagnosis of PBA including Center for Neurologic Studyâ€'Lability Scale (CNS-LS) â‰¥13; patients with severe depression were excluded. Patients received DM/Q 20/10 mg twice daily (once daily Week 1). Primary outcome was change in CNS-LS. Additional outcomes included PBA episodes/week, a quality of life scale (QOL), clinical and patient/caregiver's global impression of change (CGI-C; PGI-C), MMSE, PHQ-9 and adverse events (AEs).
Results: In dementia cohort were 134 patients (n=108 effectiveness analysis set); 106 (79.1%) completed. Patient mean (SD) age was 71 (12) yrs; 64% had probable AD. Baseline medications included antidepressants (49%), anxiolytics (36%), and antipsychotics (29%). PBA symptoms improved significantly from baseline to Day 90, mean [SD] CNS-LS change, -7.2 [6.0], P<.001 and a 67.7% reduction in weekly PBA episodes, P<.001. Mean (SD) PHQ-9 improved from 13.2 (5.3) at baseline (consistent with moderate depression) to 7.4 (5.2) at endpoint (change: -5.9 [6.1], P<.001). PHQ-9 change was modestly associated with CNS-LS change (Pearson correlation: .36; P<.001), but not with PBA weekly episode change (Pearson correlation: 0.13; P=.21), suggesting that PBA symptom improvement was not directly related to depressive symptom change. Significant improvement was also seen on QOL scores P<.001; patients were rated as "much -" or "very much improved" on 76% of PGIC and 77% of CGIC ratings. AEs were reported by 36.6% of patients, led to discontinuation in 12.7%, and were serious in 10.4%. No serious AE was deemed treatment-related. Reported AEs included headache (7.5%), urinary tract infection (4.5%) and diarrhea (3.7%).
Conclusion/Discussion: DM/Q appeared well-tolerated and effectively reduced PBA symptoms in patients with dementia. PBA symptom reduction was clinically meaningful as assessed by global and QOL ratings. DM/Q was associated with significantly reduced depressive symptoms on PHQ-9.

Study supported by: Avanir Pharmaceuticals, Inc.

ASSOCIATION OF STARD6 GENE POLYMORPHISMS AND ALZHEIMER'S DISEASE IN KOREAN POPULATION

Lead Author: Young Hoon Kim, M.D., Ph.D.
Co-Author(s): Mi Ae Oh, M.D., Jin Keon Park, M.D., Jong Woo Kim, M.D.

SUMMARY:

Introduction: Alzheimer disease (AD), the leading cause of senile dementia, is characterized by selective neuronal degeneration affecting the hippocampus and to a lesser extent other cortical brain regions resulting in progressive memory loss, impairments in behavior, language and visuospatial skills and ultimately, death. A number of evidence suggests that age-related changes of hormones of the hypothalamic-pituitary-gonodal axis may contribute to the etiology of AD. Steroidogenic acute regulatory protein (StAR) transports cholesterol to mitochondria. One postmortem study reported increased StAR protein in the cytoplasm of hippocampal pyramidal neurons from AD brains. StarD6 is first reported in male-germ cell-specific protein of StarD4 subfamily of STARD proteins. StarD6 is also detected in various regions of the rat nervous system and may have neuroprotective roles in neurosteroidogenesis after excitotoxic brain injury. Therefore, in the present study, we investigate whether genetic polymorphisms of StarD6 gene are associated with AD in Korean population.

Methods: The study population consisted of 166 Korean patients with AD and 114 Korean control subjects. To investigate genetic association of the StarD6 gene with AD, we genotyped five single nucleotide polymorphisms (SNPs) in promoter region considering heterozigosity and minor allele frequency (rs10164112, rs1657894, rs1657895, rs1370364, and rs73476816). SNP genotyping was conducted using direct sequencing. We used a multiple logistic regression model to calculate odds ratios (ORs), their 95% confidence intervals (CIs) and corresponding p values, controlling for age and gender as covariables.

Results: There were significance differences of rs10164112 of the StarD6 gene were found between AD and controls in the co-dominant model ($p<0.0001$, OR=0.17, 95%CI=0.07-0.43), the dominant model ($p<0.0001$, OR=0.39, 95%CI=0.24-0.64) and the recessive model ($p=0.001$, OR=0.25, 95%CI=0.11-0.60).

Conclusions: We found significant association between StarD6 gene polymorphism and AD in Korean population. Our results suggest that StarD6 gene may be a considerable candidate gene in the pathogenesis of AD.

EVALUATION OF SENTENCE COMPREHENSION IN DEMENTIA AND MCI AND THE RELATIONSHIP BETWEEN LANGUAGE DEFICIT, SEVERITY OF COGNITIVE DECLINE AND BPSD

Lead Author: Maria Kralova, M.D., Ph.D.
Co-Author(s): Beata HideghÃ©tyovÃ¡, MD, Jana MarkovÃ¡, PhD, Zsolt CsÃ©falvay, PhD

SUMMARY:

INTRODUCTION: More comprehensive language testing (sentence comprehension tests) shows a strong relationship between overall severity of cognitive decline and language deficit, substantial impairment we see even in patients with mild dementia. As more severe is cognitive decline, as more frequent are also BPSD in general, but some of them can be present also in milder dementia conditions.

AIM: To detect the language deficits in sentence comprehension in patients with MCI and dementia and to determine the relationship between them and the severity

of cognitive decline and independently between them and BPSD.

METHOD: In the sample of 50 cognitively declined patients (MCI and dementia, majority of them with AlzheimerÂ´s disease) of Department of psychiatry of University Hospital in Bratislava, Slovakia we evaluated severity of cognitive impairment by means of MoCA instrument, language deficit with our own sentence comprehension test, designed for Slovak speaking individuals and BPSD by means of NPI-Q.

RESULTS: The average performance in the sentence comprehension test was 90% of normal in the group of MCI patients, 74% in mild, 69% in moderate and only 22% in the group of severe dementias. We found also strong correlation between the overall severity of BPSD (total NPI-Q score â€“ presence of symptoms) and the performance in the sentence comprehension test. Language impairment was associated with the presence of delusions, aberrant motor behavior, depression and apathy even when severity of dementia was controlled for.

CONCLUSION: At earlier stages of cognitive disorders/dementias the language specific test should be used to discover comprehension deficits, because at the simple level of word the language skills are preserved. BPSD are also associated with language deficits even when the severity of dementia is controlled for. Identification of these communication disturbances can help to detect cognitive decline earlier and to start preserving treatment in time.

CROSS-SECTIONAL STUDY OF PRESCRIBING PATTERNS IN PEOPLE WITH DEMENTIA AND INTELLECTUAL DISABILITY

Lead Author: Rupal Patel, M.B.B.S., M.D.
Co-Author(s): Nasir Mirza, M.D., Richard Hillier, M.D.

SUMMARY:

Introduction

In the past, anti psychotics were used extensively for the behavioural and psychological symptoms of dementia (BPSD). However, since the discovery that some atypical antipsychotics may be associated with an increased risk of cerebral thrombosis, this practice has been deemed more controversial. Prescribing guidelines have been amended and it is recommended that their use in people with dementia is now minimised.

People with intellectual disability (ID) have higher rates of mental illness compared to the general population including dementia. In particular, people with Down's syndrome have a higher incidence of Alzheimer's disease than the general population and an earlier age of onset for dementia due to excess amyloid deposition in the brain. In people with Down's syndrome, dementia symptoms can develop two decades earlier than they would in the general population.

Hypothesis

It is possible to minimize the use of antipsychotics for BPSD in people with comorbid ID and dementia by the earlier use of anti-dementia drugs, such as cholinesterase inhibitors and NMDA antagonists.

Methods

Here we describe prescribing patterns used in people with dementia and comorbid ID. We report the outcomes of implementing international guidelines on the management of dementia in this group. In some patients we discontinued antipsychotics in favour of anti-dementia drugs to manage BPSD, whilst in others we avoided the use of antipsychotics entirely to manage BPSD by the early use of anti-dementia drugs. We used the personal and social performance scale (PSP) as an outcome measure.

Results

Our outcome shows that it is possible to manage dementia symptoms and BPSD with anti dementia drugs whilst keeping anti psychotic prescribing to a minimum.

Conclusions
Similar findings have been reported in older people with BPSD in the general population, but such findings but have not been widely reported in the ID population.

Discussion
Although our sample size is small in this population, we were able to demonstrate the feasibility of keeping antipsychotic prescribing to a minimum and still remain in control of BPSD in patients with comorbid ID and dementia.

DEXTROMETHORPHAN/QUINIDINE (AVP-923) FOR TREATMENT OF AGITATION IN PERSONS WITH ALZHEIMERâ€™S DISEASE: EVALUATION OF CONCOMITANT PSYCHIATRIC MEDICATIONS

Lead Author: Elaine Peskind, M.D.
Co-Author(s): Jeffrey Cummings, Constantine Lyketsos, Pierre Tariot, Marc Agronin, Anton P. Porsteinsson, Jacobo E. Mintzer, Uyen Nguyen, Nadine Knowles, Paul Shin, and Joao Siffert

SUMMARY:
Background: Agitation/aggression is common in Alzheimer's disease (AD), increasing caregiver burden and risk for institutionalization. The effectiveness of AVP-923, a combination of dextromethorphan and low-dose quinidine (DM/Q), for AD-related agitation was assessed in a Phase 2 trial. Primary results have been previously reported; an evaluation of concomitant psychotropic medication use is presented.
Methods: Multicenter, double-blind, 10-week, 2-stage Sequential Parallel Comparison Design (SPCD) study (NCT01584440). Stage 1 (weeks 1-5): patients with probable AD and clinically meaningful agitation were randomized (4:3) to placebo or AVP-923 titrated to 30/10 mg BID. Stage 2 (weeks 6-10): patients initially randomized to AVP-923 continued the same dose; placebo patients were stratified according to response and re-randomized 1:1 to placebo or AVP-923. Concomitant stable doses (â‰¥2 months) of FDA-approved medications for Alzheimer's (memantine/acetylcholinesterase inhibitors [AChEIs]), antidepressants, antipsychotics, buspirone (â‰¥1 month), or hypnotics (short-acting benzodiazepines/nonbenzodiazepines/trazodone) were allowed. Lorazepam (â‰¤1.5 mg/day, 3 days/week maximum) was allowed as "rescue" treatment. Primary endpoint: change from baseline on NPI agitation/aggression (NPI-A/A) domain, using standard SPCD methodology including all patients (Stage 1) and re-randomized placebo non-responders (Stage 2). Changes in concomitant psychotropic medication use (including rescue use of lorazepam) was a secondary outcome.
Results: 220 patients were enrolled in Stage 1 [93 AVP-923; 127 placebo]; 202 entered Stage 2 [83 on AVP-923 (continuing); 119 placebo (89 nonresponders and 30 responders) who were rerandomized 1:1 to AVP-923 or placebo]. Primary analysis (SPCD): the NPI-A/A domain improved significantly with AVP-923 vs placebo (Pâ‰¤.001); as it did for Stages 1 and 2 analyzed separately (effect sizes -.0505;-.340; ANCOVA; P<.001, P=.021, respectively). Concomitant medications at baseline included: 74% AChEIs, 50% memantine, 56% antidepressants (such as trazodone, SSRIs [e.g., citalopram, escitalopram], and SNRIs), 21% antipsychotics, and 8% benzodiazepines; use was similar between groups. Frequencies of psychotropic medication dose changes and discontinuations appeared similar between groups. Initiation of a new psychotropic medication occurred in 13.6% (17/125) while on placebo and 8.6% (13/152) while on AVP-923. These included most frequently quetiapine (4.8%

on placebo; 1.3% on AVP-923) and lorazepam rescue medication (10.4% on placebo; 6.6% on AVP-923).
Conclusion: AVP-923 was associated with clinically and statistically significant reduction in agitation in patients with AD. Patients entering the trial had clinically significant agitation despite ongoing treatment with commonly used psychotropic medications. Further analysis of psychotropic use to inform safety and efficacy measures is ongoing.

Study supported by: Avanir Pharmaceuticals, Inc

EARLY NEUROIMAGING FOR ATYPICAL PSYCHIATRIC SYMPTOMS: A CASE PRESENTATION

Lead Author: Sahil Munjal, M.D.
Co-Author(s): Silky Singh, M.D., Ami Baxi ,M.D.

SUMMARY:

As we know, patients do not always present with textbook symptoms of an illness. This article presents the case of a 59 year-old male with a history of depression treated for the past year, who developed a recent change in behavior, obsessive compulsive symptoms and disorganization, without apparent initial neurological signs or symptoms. Brain imaging showed a mass in the frontal lobe, later confirmed as glioblastoma multiforme. He underwent surgical treatment and radiation therapy. This case depicts that brain tumors can present with psychiatric and limited neurological symptoms, emphasizing the need for neuroimaging studies at initial presentation of atypical psychiatric symptoms.

IMPROVED TREATMENT ACCEPTANCE AND ADHERENCE FOLLOWING THE DIAGNOSIS OF MULTIPLE MALFORMATIONS OF CORTICAL DEVELOPMENT IN A PATIENT WITH PSYCHOSIS

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Co-Author(s): Kathleen M. Stuart, MSN, APRN, PMHNP-BC, Draupathi Nambudiri, M.D.

SUMMARY:

Objective: Report a case demonstrating improved treatment acceptance and adherence following the diagnosis of multiple malformations of cortical development in a patient with psychosis. Background: Malformations of cortical development (MCDs) are macroscopic or microscopic abnormalities of the cerebral cortex that arise as a consequence of an interruption to the normal steps of formation of the cortical plate. The increased use of neuroimaging has revealed a variety of MCDs presenting with a range of neuropsychiatric disorders, including psychotic illnesses. Non-adherence with the antipsychotic medication regimen is a common barrier to the effective treatment for psychosis. This case illustrates improved acceptance of and adherence to treatment following the diagnosis of two separate MCDs (bilateral periventricular heterotopia and focal cortical dysplasia) in a patient with psychosis. Case: A 48-year-old Caucasian male with a five year history of psychotic illness resulting in three prior inpatient psychiatric hospitalizations was admitted after presenting with worsening paranoid delusions and referential thinking in the setting of medication non-adherence. The patient demonstrated poor insight into his illness as well as the need for treatment despite the impact on his social and occupational functioning. The patient was started on risperidone 2mg/day, which he was initially reluctant to accept despite psychoeducation about his illness. Routine laboratory studies and toxicology were negative except for vitamin B12 deficiency with a level of 226 (normal 239-931), which was treated with cyanocobalamin 1,000mcg IM daily. CT Head revealed bilateral nodular periventricular heterotopia. MRI Brain further revealed a focal cortical dysplasia in the right frontal lobe. Upon

discussion of the neuroimaging findings with the patient, he was more amenable to accepting psychotropic medications including long-acting risperidone injection. With improved treatment acceptance, risperidone was titrated up to 4mg/day and he received 25mg of long-acting risperidone injection with an improvement in his psychosis. At 8-week follow-up the patient is still adherent to treatment with a complete resolution of psychotic symptoms. With an improvement in his functioning, the patient reports better familial relationships and is in the process of resuming his previous employment. Conclusion: Our case demonstrates improved treatment acceptance and adherence in a patient with psychiatric symptoms following the appropriate diagnosis of a neurological disorder with the use of neuroimaging. Further advancements in our ability to diagnose potential organic etiologies of neuropsychiatric symptoms may lead to improved treatment outcomes. In addition, this is the first case in the literature to describe psychotic symptoms in the setting of both bilateral periventricular heterotopia and focal cortical dysplasia.

POPULATION PHARMACOKINETIC SIMULATIONS OF DOSING WINDOWS AND MISSED DOSES OF PALIPERIDONE PALMITATE 3-MONTH FORMULATION IN SCHIZOPHRENIA

Lead Author: Srihari Gopal, M.D., M.H.S.
Co-Author(s): An Vermeulen, Ph.D., Partha Nandy, Ph.D., Paulien Ravenstijn, Ph.D., Isaac Nuamah, Ph.D., JosÃ© Antonio Buron Vidal, M.D., Joris Berwaerts, M.D., Adam Savitz, M.D., Ph.D., David Hough, M.D., Mahesh N. Samtani, Ph.D.

SUMMARY:

Introduction: Paliperidone palmitate 3-month formulation (PP3M), a long-acting injectable atypical antipsychotic, is being studied for the treatment of schizophrenia in adult patients who have already been treated with PP 1-month formulation (PP1M) for â‰¥4 months.

Objective: The simulations aimed to assess dosing windows and managing missed doses of PP3M.

Methods: Population pharmacokinetic (PK) model based simulations were performed to assess the dosing windows: during switch from PP1M to PP3M (at 17Â±1 week), maintenance therapy with PP3M (12Â±1 to 3 weeks interval), and management of missed PP3M dose during maintenance therapy. Simulations were performed to compare every 12 week (Q12W) vs 13 week (Q13W) dosing after achieving steady state with PP3M. Paliperidone plasma concentrations over time after stopping multiple PP3M doses were also simulated. Paliperidone plasma concentrations were simulated based on estimates of final population PK models using 5000 patient profiles. Patient population for simulation was built by sampling, with replacement of demographic data from patients in the data set used for development of PP1M and PP3M models.

Results: Switch from 50 mg eq. PP1M to 175 mg eq. PP3M at week 18 (17+1 week) led to a decrease in Cmin from 11.6 ng/mL to 10.2 ng/mL and switch from 150 mg eq. PP1M to 525 mg eq. PP3M at week 16 (17-1 week) led to an increase in Cmax from 58.2 ng/mL to 60.2 ng/mL. These changes in plasma concentrations were relatively small when a Â±1 week window was simulated during switch from PP1M to PP3M. During maintenance therapy with PP3M, a 12-week Â±1 to 3 weeks dosing window showed minor fluctuations in plasma concentration (Cmin, 175 mg eq.=11.0 ng/mL vs 10.3â€“9.0 ng/mL [13â€“15 week interval]; Cmax, 525 mg eq.=56.4 ng/mL vs 57.1â€“58.8 ng/mL [9â€“11 week interval]). The predicted paliperidone plasma concentrations were similar to those before the missed PP3M dose, if dosing reinitiation was: PP3M

missed by <4 months, treatment reinitiated with regular PP3M injections; PP3M missed between 4â€“9 months, treatment reinitiated with 2 PP1M injections separated by one week, followed by PP3M dosing Q12W; PP3M missed for >9 months, treatment reinitiated with PP1M for 4 months before continuation of PP3M Q12W. PP3M missed dose for >9 months offered maintenance of plasma concentration â‰¥7.5 ng/mL (associated with â‰¥60% D2-receptor occupancy) for 10â€“14 months after discontinuation of 350 and 525 mg eq. PP3M. Q13W vs Q12W dosing of PP3M achieved similar Cmin for 175 mg eq. (10.2 ng/mL vs 11.1 ng/mL) and 350 mg eq. (19.7 ng/mL vs 21.5 ng/mL) doses.

Conclusion: Based on the simulation, during switch from PP1M to PP3M, a window of Â±1 week after 17 weeks of PP1M treatment and Â±2 weeks during maintenance therapy with PP3M Q12W did not substantially impact the plasma exposure. These simulations provide information on dosing windows and managing missed doses of PP3M for the treatment of schizophrenia.

SWITCHING SCENARIOS FOR PALIPERIDONE PALMITATE 3-MONTH FORMULATION IN SCHIZOPHRENIA: A POPULATION PHARMACOKINETIC SIMULATION-BASED EVALUATION

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SUMMARY:

Introduction: A daily oral paliperidone extended release (pali-ER) formulation and a long-acting injectable (LAI) paliperidone palmitate 1-month (PP1M) formulation are approved for treatment of schizophrenia and schizoaffective disorders. A PP 3-month (PP3M) LAI formulation is currently in development.

Objective: To evaluate treatment switching for PP3M using population pharmacokinetic (POP-PK) based simulations.

Methods: The final POP-PK model for all 3 products (pali-ER, PP1M and PP3M) was used to simulate predefined dosing regimens. Paliperidone plasma concentrations were simulated for 5000 patients based on estimates of final POP-PK models. Patient population for simulations was built by sampling, with replacement of demographic data from patients in the data set used for development of PP1M and PP3M models. Simulations considered the following dosing schedules: treatment was initiated with PP1M 150 mg eq. on day 1 (deltoid), 100 mg eq. on day 8 (deltoid) and thereafter, one of 4 doses, 50, 75, 100 or 150 mg eq., on wks 5, 9 and 13 (deltoid or gluteal). For maintenance treatment, patients were either started on wk 17 with deltoid or gluteal PP1M injections (4-weekly) up to wk 77 or switched to respective 3.5-fold doses of PP3M, 175, 263, 350 or 525 mg eq., 12-weekly, up to wk 65. After stabilization on PP3M, patients switched back to PP1M at wks 65, 69 or 73. Simulations were also performed on switching back to pali-ER instead of PP1M. Population median and 90% prediction interval of simulated plasma concentration-time profiles were plotted to evaluate simulation outcomes.

Results: Paliperidone plasma exposures after switching to PP3M were similar to the exposures obtained with corresponding doses of PP1M (50â€“150 mg eq., 4-weekly) or pali-ER (4â€“12 mg, daily). The plasma exposure range for PP3M was encompassed within the exposure range for the approved dose strengths (3â€“12 mg, daily) of pali-ER. The interpatient variability after multiple injections of PP3M was higher than the variability observed for PP1M over

a 3-month time period and similar to the variability for oral pali-ER. Similar paliperidone plasma exposures were obtained when patients at apparent steady-state for PP3M (after four PP3M doses) were switched back to PP1M.
For switching from PP3M to pali-ER, the transition regimen was simulated to start at least 3 months after the last PP3M dose: 6 mg for â‰¥12 to â‰¤18 wks, 9 mg for >18 to â‰¤24 wks and 12 mg for >24 wks.

Conclusion: After switching to PP3M, the observed paliperidone plasma exposures were similar to PP1M and pali-ER and variability was also similar for PP3M and pali-ER. These simulations provided simulated plasma exposures for switching in patients with schizophrenia being considered for treatment with PP3M.

STIFF PERSON SYNDROME OR CATATONIC SCHIZOPHRENIA: A CASE REPORT

Lead Author: Ahmad Hameed, M.D.
Co-Author(s): Ayesha Ahmad, M.D, Amanda White, B.S, Myra Qureshi, Usman Hameed, M.D.

SUMMARY:

Introduction: Stiff Person Syndrome (SPS) is a rare autoimmune disease of unknown etiology which affects the nervous system. Stiffened, hunched, and abnormal postures are characteristic of SPS due to fluctuating muscle rigidity. Exposure to stress can lead to production of these symptoms. Glutamic Acid Decarboxylase (GAD) and Electromyography (EMG) are important diagnostic tools.
Case Report: A 53-year-old female who was involuntary admitted to psychiatry inpatient for irrational behavior. She stated that she was following her friends when she got confused and followed another car. The next thing she knew was being questioned by the police. She found this incident to be extremely confusing and frustrating as she had done nothing wrong.
During the intake she stated that she sees a neurologist for SPS and takes clonazepam and gabapentin. She denied any history or symptoms of any psychiatric syndromes. She stated that she was going through a divorce and her ex-husband might be spying on her. On further questioning, we found that recently she was evaluated by a psychiatrist. MSE on admission included a female lying on hospital bed with a sheet over her head. She was cooperative with normal speech. Her thought process was tangential. Her thought content was positive for delusions. Her mood was euthymic but her affect was constricted. She was oriented with poor insight and judgement.
We strongly felt that she was psychotic. The next day she was found lying in her bed with a sheet over her head. She was unresponsive, did not answer any questions and stared at the ceiling. No spasms, falls, or muscle twisting were observed. We continued with and increased her risperidone. The next day, she started talking and left her bed. She stated that the "episode" was due to her SPS and confirmed having such episodes in the past. GAD test was negative. We could not get an EMG. Once her psychotic symptoms were stabilized, she did not have any "SPS episodes". She was continued on risperidone and discharged.
Discussion: Our patient clearly had symptoms of catatonic schizophrenia, including delusions, disorganized speech, disorganized and catatonic behavior. As she was not endorsing hallucinations and her delusions were fixed, she could have easily come across as "stable". Although she was diagnosed and treated for SPS, several factors point towards a diagnosis of catatonic schizophrenia. GAD, a diagnostic test for SPS was negative. In addition, she showed mutism; which can be present in catatonia but is not found during an episode of muscle rigidity due to SPS. The fact that she responded to an antipsychotic also points towards the diagnosis of schizophrenia. As this case illustrates, SPS

and catatonic schizophrenia have a similar physical presentation. We should be well aware of the symptoms common to both syndromes. A good history, physical exam, and appropriate tests are the cornerstone of distinguishing these two syndromes and treating them accordingly.

RTMS USING A TWO COIL ELECTROMAGNETIC ARRAY: EFFICACY FOR TREATMENT RESISTANT MAJOR DEPRESSIVE DISORDER

Lead Author: Scott T. Aaronson, M.D.
Co-Author(s): Linda L. Carpenter, M.D., William M. McDonald, M.D., Paul E. Holtzheimer, M.D., Clarke W. Johnson, M.D., Gregory N. Clark, M.D., Beth Stannard, M. Bret Schneider, M.D.

SUMMARY:
Background: Repetitive Transcranial Magnetic Stimulation (rTMS) was first cleared by the FDA as a treatment for depression in 2008. Since that time there has been an increasing adoption of this technology as a standard of care for patients with major depressive disorder (MDD) who do not sufficiently benefit from, or have been unable to tolerate antidepressant medication. A second generation rTMS system by Cervel Neurotech (Redwood City, CA) uses a two-coil array to generate electrical field potentials at multiple brain network locations, both deep and superficial. The positioning of coils in this device is designed to produce both a summation of the fields at relatively deep cortical sites and avoidance of non-targeted areas.
Methods: A randomized, double-blind, sham-controlled, parallel-groups clinical trial was conducted to examine the safety and efficacy of Cervel rTMS as the sole or adjunctive treatment of MDD in adult patients (n=92). Both treatment intolerant and treatment resistant participants (who failed to achieve satisfactory improvement from at least one prior adequate antidepressant medication but not more than three) were enrolled at 6 US sites. Adults meeting eligibility criteria received 20 daily rTMS treatments over 4 weeks. The majority of participants got rTMS as an adjunct to stable (but inadequately effective) pharmacotherapy. Targeted coil centers were positioned over left dorsolateral prefrontal cortex (dlPFC) and posterior dorsomedial prefrontal cortex (pdmPFC) with 10 Hz stimulation (4-second trains, 26 inter-train interval); maximum summated power for both coils was â‰¤ 120% of resting motor threshold. Durability of effect was measured 1 month after completion of the final treatment . Serial HAMD-24 assessments were administered electronically via algorithm-based computer program, and the primary efficacy endpoint was change in HAMD-24 score from baseline to endpoint (4 weeks).
Results: Data from n=75 patients were included in the per-protocol (PP) sample. Mean HAMD-24 improvement at week 4 for the active treatment group (-15.1Â±9.6) was significantly greater (p=0.033; Cohen's d=0.5) than for the sham group (-10.4Â±8.7). Week 4 HAMD-24 response rates were 55.3% for active versus 32.4% for sham (p=.063) , and remission rates were 26.3% versus 18.9% (not significant).
Discussion: Positive results were found in the first controlled clinical trial of rTMS therapy using a new device designed to optimally direct and summate the magnetic energy fields generated by a two-coil array. Despite the modest sample size, results on the primary endpoint support antidepressant efficacy of Cervel rTMS for pharmaco-intolerant or -resistant MDD, with an effect size comparable to those reported for large trials using devices with FDA clearance. Secondary endpoints were generally supportive.

TREATMENT OF UNIPOLAR, NON-PSYCHOTIC MDD WITH TRANSCRANIAL MAGNETIC STIMULATION: EFFECTS OF PHARMACOTHERAPY CHANGES, ACUTE AND LONG-TERM OUTCOMES

Lead Author: Kimberly Cress, M.D.

SUMMARY:

ABSTRACT

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% receive 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 the effects of TMS on medication changes post-TMS.

Methods: 111 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 scale, Patient Health Questionnaire depression scale and the Beck Anxiety Inventory scale. Scores were performed prior to and at the end of the acute treatment phase. Long-term results and acute medications changes were reported on those patients that returned for assessment.

Results: The study population included average age 46.2 years with 66% female. The mean TMS sessions were 37.8 with a range of 3,000 to 4,600 pulses. 85 (76.6%) patients demonstrated a minimum 50% improvement in the BDI-II symptom score while 79 patients (71. 2%) achieved remission with reported symptom scores of <13.

Long-term data was established tracking 28 patients who achieved remission in the acute phase of treatment. Patients were included when post follow-up testing was 12 months or greater. 85.7% (24) of patients maintained remission with an average of 19.9 months following the acute treatment phase with 14.3% relapsing.

Medications changes were tracked on 38 patients during a 3-6 month period following an acute course of treatment. 73.6% (28) patients achieved remission measured by the BDI-II. Patients were placed into groups identified as Increased (29%), No Change (32%) and Reduced (39%).

Conclusion: In routine clinical practice, TMS shows significant improvements in symptom scores across multiple scales in a treatment resistant population.

Long-term data on 28 patients who achieved remission from acute TMS were followed for a year and more, and showed a 14.7% relapse rate with 85.3% maintaining remission. Thus supporting TMS as a durable depression treatment.

We measured and tracked medication changes post-acute treatment with 38 patients. Results show that a patient achieving remission from an acute course of TMS has a 50% (14 of 28) chance of reducing medications. TMS may require fewer additional medications to achieve results and maintain wellness.

TRENDS IN ECT UTILIZATION IN THE MEDICARE FEE-FOR-SERVICE POPULATION, 2000-2012

Lead Author: Patrick Ying, M.D.

SUMMARY:

Background

A recent report has suggested that the use of ECT has been declining in general hospitals. (Case, 2013). Key findings included a decline in the number inpatient admissions involving ECT, with declines in the elderly accounting for the overall trend. In addition, Case found that the number of general hospitals performing ECT declined from 907 to 538 from 1993 to 2009, although the utilization rate in those hospitals remained stable. As noted by Weiner and Prudic (2013) limitations of this data included the inability to capture outpatient ECT and the use of ECT in freestanding psychiatric hospitals. Analysis

of Medicare claims data can capture ECT use not available in the prior analysis.
Design/Methods
Three different datasets representing Medicare Part B claims were downloaded from the CMS.gov website. The first summarized the use of CPT codes for each year from 2000-2012. The number of procedures representing ECT (90870) and psychiatric evaluation (90801) were extracted. Another dataset representing a random 5% sample of claims-level data for 2008 and 2010 was also examined. This dataset allowed analysis of the number of ECT performed, including the age, gender and diagnostic category of the patient as well as where the treatment was performed. The last dataset represents all claims made at the provider level for 2012. The number of ECT Medicare providers and the number of procedures performed was analyzed by state. Total Medicare Part B enrollment data was also obtained by CMS.gov. The dataset used was limited by what was publically available for download at no cost.
Results
The number of ECT claims in the Medicare Part B system fell from 154,239 to a low of 133,303 in 2008, and has slightly recovered in 2012 to 143,366, while total FFS Part B beneficiaries and claims for psychiatric evaluations increased. While Case found that inpatient admissions/100,000 declined over 50% from 2000 to 2009, the number of ECT delivered to Medicare Part B beneficiaries only declined 24%. Data from 2008 and 2010 confirm the trend towards outpatient ECT especially in the elderly.
A disproportionate share of ECT amongst Medicare beneficiaries is among the disabled population. Mood disorders dominate the diagnoses treated with ECT, although the disabled population has a higher proportion of psychotic spectrum illness.
In 2012, Medicare reported claims for ECT in forty-seven states and the District of Columbia, but none in Alaska, Montana and Wyoming. While California and Texas have a large number of ECT providers and treatments provided, when compared to the number of beneficiaries, these states have comparatively lower rates of ECT use. The Northeast and Midwest have the highest rates of ECT utilization.
Conclusions
The data appear to confirm a decrease in the utilization of ECT over 2000-2012, although not to the extent previously reported. The trend towards ambulatory ECT is confirmed, especially in the elderly.

IDENTIFICATION OF RISK FACTORS FOR SUICIDE AMONGST PSYCHIATRIC PATIENTS: CAN STRUCTURED MEASUREMENT TOOLS BE MORE SPECIFIC?

Lead Author: Amresh K. Shrivastava, M.D.
Co-Author(s): Robbie Campbell RFCPC, Megan Johnston Ph.D., Coralee Belmont, MA, Miky Kaushal MD, Avinash DeSouza, DPM, Larry Stitt, M.Sc. Charles Nelson Ph.D.

SUMMARY:

Background
One of the main challenges in suicide prevention is that it cannot be predicted. Significant number of patients attempt suicide while being under psychiatric treatment. Lethality and intent of each risk factor varies and remains inconsistent. Though structured instruments have also been useful with limited success search for newer methods remains an urgent clinical need. We believe risk is multifactorial and a scale based upon fundamental domains of biological, psychological, social, environmental, spiritual and clinical origin can elucidate more specific factors.

Scale for impact of suicidality-Management, Assessment & Planning of care-brief screener (SISMAP-bcs) is 23 item scale which is valid, reliable and easy to administer . In this study we are trying to examine significant risk factors for suicide based upon findings of this scale.

Method

This is open level, naturalistic study. Consenting psychiatric patients from out patient and in-patient facility of a tertiary psychiatric hospital were recruited . All patients were assessed on of clinical, phenomenological and psychopathological parameters using standard psychometric tools and SIS-MAP brief screener was used for assessment of suicide-related variables. We completed assessment of 79 patients, in this sample 37 were males .mean age was 38.26 (SD 14.78, range 19-75). 44 patients were hospitalized and 35 were on outpatient treatment . The score of SIS-MAP cut-off score is 6 for outpatient treatment, 7 and 8 for decision based upon clinical judgment and 9 and above for hospitalization. A score of 8 and above was suggestive of high risk. Out findings suggest significant factors for suicide. 1) Shorter duration of illness ($r=0.0334$, $p<0.05$) 2) Severity of depressive symptoms ($r=0.62$, $p<0.001$) 3) severity of psychotic symptoms ($r=0.413$, $p=0.014$). 4) Being single ($f=3.071$, $p=0.042$). 5) Suicide being reason for admission ($f=4.238$, $p=0.008$). 6) History of physical assault ($f=5.078$, $p=0.031$) and 7) Interpersonal problem in family ($f=7.931$, $p=0.008$). The scale also identified the questions, which were most significant. Few such questions are 1) is your family supportive of your problem? 2) When you have thoughts about hurting yourself or about death, 3) can you control these thoughts? 4) Do you savor your life-satisfying moments? 5) Do you find it difficult to know where to find/access health care services? 6) Do you ever feel like there is no meaning or purpose in your life?

Conclusion

The study shows that some of the clinically relevant factors which were indicative of high suicidality. The study also identifies significant risk factors associated with high risk of suicide. We conclude that a number of clinical factors, which suggest high risk, can be captured by multidimensional assessment scale in routine clinical work. The future research may suggest lethality of combinations

RECRUITMENT, IDEOLOGY, AND STRATEGIC PREVENTION IN RADICAL EXTREMISM: A LITERARY REVIEW

Lead Author: David A. Brown
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SUMMARY:

Recruitment, Ideology, and Strategic Prevention in Radical Extremism: A Literary Review
David Brown, Yui Sugiura, Megan Seidl, Kristina Mihajlovic, Aida Mihajlovic, M.D.

Background: Radical extremism has become an increasingly relevant issue facing our society. Groups ranging from ISIL abroad to the Aryan Nation domestically are growing in power and influence. This project aims to understand the recruitment strategies and ideology of these groups, so that effective opposition and preventative strategies can be successfully implemented.

Methods: A literature review examining ten articles was conducted to determine the recruitment strategies and underlying ideology of radical extremists, focusing on Islamic groups abroad and white power groups domestically.

Results: It is evident that radical extremists both abroad and domestically recruit members through an ideology portraying themselves as victims of an oppressive force who must assume the role of heroes or champions to a global threat through violent but seemingly justified means.

Conclusion: Effective counter-measures to radical extremist recruitment and ideology should focus on countering the perceptions of victimization, undermining the "champion" narrative, and emphasizing non-violent alternatives. Understanding these strategies will allow for improved

patient care, especially those affecting adolescent psychiatric behavior within at-risk community members.

PSYCHIATRIST AS COMMUNICATOR: PUTTING THE â€˜Lâ€™ BACK IN CL PSYCHIATRY

Lead Author: Jamey B. Adirim, M.B.B.S.
Co-Author(s): Kevin Varley, M.D., Stephen Archer, M.D., Pallavi Nadkarni, M.D.

SUMMARY:

Psychiatrist as Communicator: Putting the 'L' Back in CL Psychiatry

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Background
Since Edward Billings first conceptualized it in 1940, consultation-liaison (CL) psychiatry has navigated the complex interface between medicine and psychiatry. An effective CL service incorporates both consultation and liaison components.1 While psychiatric illness is common in medical inpatients, care is often suboptimal.2 As previous research has found, physician satisfaction is a valuable performance indicator to rate a CL service.3

Aim
To compare physician satisfaction with a CL service before and after service-model change.

Method
A 9-item survey tool was distributed to all residents and non-psychiatry consultants at a 456-bedded University hospital in August 2012. Poor satisfaction with the CL service was found, owing to a suboptimal service model. These results became an impetus to emphasize a liaison approach, and the survey was repeated in April 2014.

Results
204 patient referrals were analyzed, of which 49% were geriatric. The commonest reasons for referral were concerning behaviour, medication review, and suicidal gesture; and the commonest diagnoses were dementia, delirium, and depression. Significant differences supporting the 'liaison' model were found across all parameters. Most notable were improvements in communication and physician satisfaction.

Conclusion
The older, chiefly 'consultation' model had limited contact with the referrer at the point of referral and thereafter. Treatment recommendations were entered in the clinical notes, with limited liaison with the primary team.

In the newer 'liaison' model, the psychiatrist becomes a functioning part of the medical team, taking ownership of psychiatric care. The focus is communication with the treating team by disseminating psychoeducation, navigating psychosocial issues, and participating in multidisciplinary team and family meetings4.

We conclude that it is these tenets of the 'liaison' model, which have contributed to our significant findings.

Future Directions
Patient experience and clinical outcomes are direct parameters to quantify the efficiency of a CL service, which we will investigate in our future research.

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PREDICTING HELP SEEKING BEHAVIORS IN PATIENTS WITH MOOD AND ANXIETY SYMPTOMS

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SUMMARY:
A large proportion of people with mood and anxiety disorders do not seek formal or informal help for their mental health problems. Recent studies have highlighted the efficacy of interventions aimed to increase help seeking behavior; yet, within the current literature, little is known about baseline factors that predict help seeking for individuals with mood and anxiety symptoms. This study was undertaken in order to systematically examine factors that predict the likelihood of proactively seeking out help for mood and anxiety symptoms. Patients (n=278) referred to the START Clinic for Mood and Anxiety Disorders were asked a series of 23 questions pertaining to their help seeking activities. Patients were also administered questionnaires, including the Beck Anxiety Inventory (BAI), Anxiety Sensitivity Index (ASI), Intolerance to Uncertainty (IUS), and the Beck Depression Inventory-II (BDI-II). Additionally, demographic factors such as age, gender, marital status, and perceived social standing were examined. Multiple linear regressions and analysis of variance tests were performed in order to identify predictors of help seeking behavior. It was found that correlates of anxiety and depression predict the likelihood of help seeking; specifically, severity of anxiety (BAI; $\hat{I}^2$=.340; p<.001), sensitivity to anxiety (ASI; $\hat{I}^2$=.242; p<.001), intolerance to uncertainty (IUS; $\hat{I}^2$=.122; p<.001), and severity of depression (BDI-II; $\hat{I}^2$=.322; p<.001). For demographic variables, the age cohort of 45-54 years (F=1.399; p<.05) and one's perceived social standing (F=1.461; p<.05) significantly predict one's likelihood to seek out help for mental health issues. No correlation among help seeking behaviors, gender and marital status were found. Together, these findings suggest that severity of mental illness, specific age cohorts, and higher perceived socioeconomic standing likely serve as predictors of help seeking. The implications of these findings and suggested targeted interventions will be discussed.

IMPACT OF IMPLEMENTING NOVEL LEVEL OF CARE CRITERIA FOR GROUP HOMES

Lead Author: Cynthia L. Arfken, Ph.D.
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SUMMARY:
Hypothesis: Limited budgets for publicly funded mental health systems present challenges and trade-offs. We examined the process and impact of changing criteria for housing expenditures.
Methods: Following funding reduction and administrative change, Gateway Community Health (GCH), a Southeastern Michigan-based mental health managed care provider, re-examined all their expenditures including housing payments. In 2009, group home payments reflected 12 level of care categories determined by clinically indicated personal care services and community living supports. Rates were also negotiated with individual group homes. To simplify administration and minimize negotiations, GCH implemented in 2010 a system of 4 levels of care. The new system is driven by trained GCH staff

administering a modified Positive and Negative Syndrome Scale (mPANSS). The evaluation examined payments incurred by a cohort (n=1,178) in group housing at least once in each year from 2009 to 2011. Not included in the cohort were consumers (between 74 and 107 per year) at large group homes where daily payments (averaging >$170) included treatment. Overall in 2009, 1,892 consumers spent at least one day in group homes.
Results: In 2009, over $3.7 million per month was spent on housing payments for the cohort; 49% incurred group home payments greater than $91 per day. In 2011, less than 2% of the cohort incurred such high payments. Monthly group home payments for the cohort dropped to $2.7 million per month. By 2011, housing payments for the cohort declined 25.0%, psychiatric hospitalization payments declined 26.7%, and outpatient services payments declined 31.4%. After initial opposition, owners supported the change. Among the cohort, only 4.4% refused the mPANSS administration. Those participating had a mean score of 3.44 per item (3=mild, 4=moderate).
Discussion: Specifying criteria for levels of care simplified administration for both the funder and the owners of group homes. It also resulted in lower housing payments without concurrent increased expenditures for psychiatric hospitalizations or outpatient services. Limitations include other cost-cutting measures implemented.
Conclusions: Limited budgets create difficult choices but offer opportunities. Levels of care for housing can be simplified, clinically-appropriate and cost-effective.

A JOURNEY TO RECOVERY

Lead Author: Felicia Iftene, M.D.
Co-Author(s): Dianne Groll, PH.D.

SUMMARY:

Our ongoing study, involving clients with severe mental disorders, living in Homes for Special Care, is built as a peer support recovery oriented model for clients living in group homes and their caregivers. This is a Psycho-educational approach, developed to increase patients' knowledge of, and insight into, their illness and its treatment.
The Homes for Special Care (HSC) Program was established Ontario in 1964 and provides housing, meals and assistance with daily living for adults with a serious mental illness. They are funded and licensed annually by the Ministry of Health and Long-Term Care, according to the Homes for Special Care Act.
Goals: to improve the outcomes of clients living in group homes and to increase the quality of life of home operators and their helpers.
Methods
Subjects: Clients followed by Community Treatment Teams (n=30), living in group homes; Caretakers (n=15); Control lot (n=10), clients living in Community on their own, involved with the same program.
Instruments: The Socio Demographic information; The Brief Psychiatric Rating Scale; The Quality of Life Enjoyment and Satisfaction Questionnaire.
Interventions: The program- the educative intervention for clients and caregivers- covers 10 sessions, two hours each, once per week.
There were 3 working groups: one conducted by an occupational therapist and two groups conducted by two high functioning clients with Schizophrenia.
Each study group includes 8-12 clients and 4-6 caregivers.
Statistics
Due to the relatively small sample size, groups were compared using the Mann-Whitney U test. Demographic data were analyzed using means, frequencies, and counts.
Results and Discussions
Comparing baseline to three-month post treatment we obtained a reduction in all symptoms on Brief Psychiatric Rating Scale. Statistically significant ($p<0.05$) reductions occurred in Somatic concerns, Anxiety, Blunted Affect, Tension and Self-

neglecting behavior. There is a greater improvement in the quality of life of control lot, explained by the semi-institutionalized life of people living in homes for special care and from the different picture of their socio demographic background, making them lower functioning.
Conclusion
The initial program was conceived for higher functional clients. On our way through the program we had to adjust and reorganize some of the sessions in order to make the information accessible to them and keep them focused and interested.
The impairment of social functioning is impressive when the clients have a semi institutionalized life, early onset of mental disorder, long term hospitalizations, lack of family support.

We need to develop flexible programs, earlier delivered over time, adjustable to clients' specific needs, in a well-constructed comprehensive plan, including both pharmacological and psychosocial interventions.

Key words: Schizophrenia, peer support, home for special care

TELEPSYCHIATRIST PERCEPTION OF CLINICAL EFFECTIVENESS

Lead Author: Joseph Pierri, M.D.
Co-Author(s): Shabana Khan, M.D., Jack Cahalane, Ph.D.

SUMMARY:

Background: Telepsychiatry is generally accepted as a feasible and cost-effective means of improving access to psychiatric care in rural communities. Several studies have demonstrated that telepsychiatry is comparable to face-to-face interactions with respect to patient satisfaction and treatment outcomes. Less is known about psychiatrists' satisfaction with providing care via videoconferencing. Improvement in psychiatrists' satisfaction may increase provider willingness to engage in telepsychiatry, thus improving access to healthcare and the quality of services available to underserved areas.
Methods: Satisfaction surveys were completed by 11 psychiatrists who provide telepsychiatry services to rural communities in Pennsylvania through the Western Psychiatric Institute and Clinic of the University of Pittsburgh Medical Center. The psychiatrists will also complete a semi-structured interview addressing specific aspects of provider satisfaction including satisfaction with technology, technical support, patient interaction via videoconferencing, and availability of on-site support with a focus on potential areas for improvement.
Results: Initial survey results show that the majority of psychiatrists (82%) rated their satisfaction as either very good or excellent. Of the psychiatrists surveyed, 100% either agreed or strongly agreed that patients were satisfied with their care, yet only 73% agreed that the relationship is comparable to face-to-face office visits. Psychiatrist that indicated that the relationship was not comparable to face-to-face where more likely to rate their overall satisfaction as lower. The majority of psychiatrists (91%) rated the presence of an on-site clinician in the room with the patient as extremely helpful. Follow-up questionnaire results with a focus on how to improve provider satisfaction are pending.
Discussion: Studies indicate that patients receiving services via telepsychiatry are satisfied with the care provided, however if the psychiatrists are not satisfied, they will be less likely to offer these services. Initial results suggest that while most psychiatrists are satisfied with providing telepsychiatry services, there are variations in the psychiatrists' experience across telepsychiatry sites. Practice guidelines exist for telepsychiatry and outline the current standard of care for our patients. It is also important to identify clinical parameters that optimize provider

satisfaction that can be applied uniformly across telepsychiatry clinics.

EXPLORING GENETIC VARIABILITY AT PI, GSK3, HPA AND GLUTAMATERGIC PATHWAYS IN LITHIUM RESPONSE: ASSOCIATION WITH IMPA2, INPP1 AND GSK3B GENES

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SUMMARY:
Background: Lithium is considered the first-line treatment in bipolar disorder, although response could range from an excellent response to a complete lack of response. Response to lithium is a complex phenotype in which different factors, part of them genetics, are involved. In this sense, the aim of this study was to investigate the potential association of genetic variability at genes related to phosphoinositide (PI), glycogen synthetase kinase-3 (GSK3), hypothalamic-pituitary-adrenal (HPA) and glutamatergic pathways with lithium response.

Methods: A sample of 131 bipolar patients were grouped and compared according to their level of response: (a) excellent responders (ER): patients presenting a 50% reduction of the episodes after the introduction of Li in monotherapy, (b) partial responders (PR): patients presenting a 50% reduction of the episodes after the introduction of Li but on polytherapy (other mood stabilizer, antidepressant or antipsychotics), (c) non-responders (NR): patients who did not reduce at least a 50% of the episodes and patients who required electroconvulsive therapy.

Results: Significant differences were found in genotypic and allelic distributions between different groups of Li responders for the rs669838 (IMPA2) (genotype: p=0.035; allele: p=0.015), rs909270 (INNP1) (genotype: p=0.038; allele: p=0.038), rs11921360 (GSK3Î²) (genotype: p=0.046; allele: p=0.0057) and rs28522620 (GRIK2) (genotype: p=0.048; allele: p=0.016) polymorphisms. P-values were not significant after permutation testing. When we pooled together PR+NR versus ER and compared the SNPs associated in our previous association analyses, logistic regression showed significant association for rs669838 (IMPA2) [Î²=2.31; p=0.021; OR=2.03; 95% CI (1.11-3.72); EMP=0.07], rs909270 (INPP1) [Î²=2.58; p=0.009; OR=2.45; 95% CI (1.24-4.82); EMP=0.028] and rs11921360 (GSK3B) [Î²=2.84; p=0.004; OR=2.52; 95% CI (1.33-4.78); EMP=0.011] with Li response, being C, G and A the risk alleles, respectively. Haplotype analysis showed an association of rs3791809-rs4853694-rs909270 haplotype in INPP1 (D'=0.94, r2=0.43) and Li response. Frequencies of the T-A-G haploblock were more frequent in PR+NR (0.488) than in ER group (0.306) (p=0.012; sim-p=0.012). On the contrary, T-A-A haploblock was more frequent in ER than in PR+NR group (0.241 vs. 0.12) (p=0.018; sim-p=0.019). The rs1732170-rs11921360-rs334558 haplotype in GSK3B (D'=0.979, r2=0.742) was also associated with Li response (global p=0.002, global sim-p=0.002). The C-C-A haploblock was significantly less frequent in the group of PR+NR (0.299) than in ER (0.552) (p=0.001; sim-p=0.001).

Conclusions: Our study is in line with previous studies reporting association between genetic variability at these genes and lithium response, pointing to an effect of IMPA2, INPP1 and GSK3B genes to lithium response in BD patients. Further studies with larger samples are warranted to assess the strength of the reported associations.

A DOUBLE BLIND TRIAL OF DIVALPROEX SODIUM FOR AFFECTIVE LABILITY AND ETHANOL USE FOLLOWING TRAUMATIC BRAIN INJURY

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SUMMARY:
Background: Traumatic brain injury (TBI) is highly prevalent in at risk occupations including US service personnel. Of particular concern now are those wounded in combat in Iraq and Afghanistan where TBI appears to account for a larger proportion of casualties than in prior U.S. wars. Reports from Operation Iraqi Freedom (OIF) suggest that as many as one-quarter to one third of personnel injured in combat suffer TBI (Okie, 2005) and that such injuries may persist after one year (MacDonald et al, 2011), the period of natural brain healing. As many as twenty percent may exhibit symptoms of fronto-limbic disinhibition expressed as a poorly controlled, or labile, affect. Data from an earlier open-label case series of Affective Lability (AFL) post-TBI (Beresford, et al, 2005) guided the primary hypothesis that divalproex sodium (DVP) would improve AFL in mild to moderate post-TBI subjects at one year or more since the last TBI. A secondary hypothesis asserted that successful treatment of AFL would decrease ethanol use in AFL subjects. We here report early data on the primary hypothesis.

Method: randomized, double blind, placebo controlled, 8 week treatment trial of n=50 subjects presenting with 1) mild to moderate TBI at least one year prior to study enrollment, 2) current AFL manifesting as irritability or anxiety symptoms, 3) current alcohol abuse or alcohol dependence by DSM-IV-TR criteria, 4) no mood disorder history prior to an initial TBI, and 5) between 18 and 65 years of age. Primary outcome measure: spouse's or significant other's Agitated Behavior Scale (ABS) rating of the subject at baseline and at weekly intervals. Blood DVP guided dosing to reach therapeutic levels between 50-100 mcg/mL.

Results: n=23 subjects were assigned to active drug and n=27 to placebo, with useable data in n=22 and n= 26 respectively, total n=48. Neither mean age, 47 years +/- 14 years, range 25 â€“ 62 years, nor gender, n=2 women per group, separated the two groups. Preliminary analysis found significant others' ABS ratings were statistically lower, indicating less AFL, in the DVP group, 12.9 +/- 4.9, than in the placebo group, 15.5 +/- 6.6, with significance at p=0.0367. Effects on other AF measures and on ethanol use await ongoing analysis.

Conclusion: These preliminary data indicate a likely significant therapeutic effect for divalproex sodium in reducing AFL in post-TBI subjects. The effect does not appear due to natural brain healing, owing to one-year healing time since the last injury, or to a pre-TBI mood disorder. These early data from controlled, randomized, double blind study suggest mood stabilizing medications as effective in treating persistent (MacDonald, et al 2011) AFL following TBI.

BASELINE STATE BUT NOT DRUG EXPOSURE PREDICTS PUTATIVE SIDE EFFECTS 2 WEEKS AFTER STARTING OLANZAPINE IN PSYCHOTIC DEPRESSION

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SUMMARY:

Introduction: Olanzapine can cause various side effects some of which may be dose related. We previously demonstrated an association of depression with intolerance to non-psychotropic drugs, which may reflect mis-attribution of symptoms already existing at baseline, but elicited later, as drug side effects (Davies et al, Arch Int Med, 2003; 163 (592-600)).

Hypothesis: In patients with psychotic depression, we assessed putative side effects including cardiovascular measures 2 weeks after starting olanzapine. We hypothesized that putative side effects would be predicted by a) baseline measures and b) exposure to olanzapine by 24 hour area under the curve (AUC) derived from NONMEM modeling.

Methods: The Study of Pharmacotherapy for Psychotic Depression (STOP-PD) randomized participants to olanzapine+placebo or olanzapine+sertraline. We studied those who provided blood samples and attended 2 weeks after starting olanzapine, excluding those who changed olanzapine dose in the previous 2 days. For each putative side effect we constructed logistic regression models with symptom intensity as a binary outcome variable or linear regression models for the cardiovascular measures. In each model independent variables were baseline score for the same symptom and olanzapine AUC, with covariates of age, gender, race and allocation to sertraline/placebo.

Results: 149 STOP-PD participants were included in this analysis (mean age 59.7 years, 52 females, 20 African Americans, and 72 taking olanzapine+sertraline). For 8 of 11 putative side effects (fatigability, rigidity, dry mouth, constipation, pedal edema, systolic and diastolic blood pressure (SBP, DBP) and heart rate (all p values =< 0.002), baseline values were a strong predictor of the 2 week score or value. Tremor was more weakly related to baseline score (p=0.049); Sedation and akathisia at baseline were not related to week 2 scores. Olanzapine exposure by AUC was not related to any of the 2 week scores or values of putative side effects. Allocation to sertraline or placebo was not significantly associated with any outcome at 2 weeks.

Conclusions: Baseline scores or values strongly predicted those at 2 weeks for most outcomes. However for sedation, akathisia and tremor this was not the case. Current exposure to olanzapine did not predict any outcome.

Discussion: Baseline symptoms or values appear to be a much stronger predictor of putative side effects at 2 weeks than is drug exposure. These findings are consistent with and extend previous studies showing the need for prescribers to document somatic symptoms before initiating medications in depressive disorders, otherwise the assumption that a drug caused symptoms side effects may be mis-attribution. However it remains possible that observations at baseline and 2 weeks could be influenced by drugs prescribed prior to starting olanzapine or drugs being down-tapered and discontinued in the first 2 weeks as per the STOP-PD protocol.

BREXPIPRAZOLE SHOWS ANTIDEPRESSANT AND ANXIOLYTIC-LIKE EFFECTS IN THE RAT FORCED SWIM AND VOGEL CONFLICT TEST

Lead Author: Linda Lerdrup, Ph.D.
Co-Author(s): Kenji Maeda, Ph.D., Christoffer Bundgaard, Ph.D., Tine B. StensbÃ¸l, Ph.D.

SUMMARY:
Background: Brexpiprazole is a serotonin-dopamine-activity modulator (SDAM) being developed as adjunctive treatment of major depressive disorders (MDD), and for the treatment of schizophrenia and other psychiatric disorders. Here we examined

antidepressant-like and anti-conflict effects of brexpiprazole alone and combined with fluoxetine in the rat forced swim test (FST) and Vogel conflict test (VCT), respectively.
Methods: FST: rats swam for 5 min in a water-filled cylinder and immobility time was recorded. VCT: Water-deprived rats were allowed to drink from a water spout through which a mild electric shock was delivered during drinking. The number of shocks received during the 3-min test session was recorded. Brexpiprazole (0.3-3 mg/kg) was administered orally 24hr & 2hr (FST) and 2hr (VCT) before the tests. Fluoxetine (16-32 mg/kg) was administered intraperitoneally 24hr, 4hr and 1hr (FST) and 1hr (VCT) before the tests, respectively.
Results: Brexpiprazole alone had no effect in the FST, but significantly (3 mg/kg) increased the number of punished licks in the VCT. When combined with fluoxetine, brexpiprazole significantly enhanced fluoxetine's effect in the FST, but no effect on VCT was found.
Conclusions: Brexpiprazole can potentially enhance the antidepressant effects of fluoxetine and alleviate anxiety which is comorbid in several CNS disorders.

GENETIC POLYMORPHISMS AND ANTIDEPRESSANT ADVERSE EFFECTS OR NONRESPONSE

Lead Author: Rajnish Mago, M.D.
Co-Author(s): Sandeep Gupta, M.D., Kelly Huhn B.S., Ronak Shah, M.B.B.S.

SUMMARY:

Background
CYP450 polymorphisms affect metabolism/drug levels of antidepressants. These variations may cause increased adverse effects (AEs) or lack of response. We used a Case-Control design to determine whether patients with increased AEs from specified antidepressants (Cases) were more likely to be poor/intermediate metabolizers on the concerned CYP450 enzyme and/or homozygous for the short allele of SLC6A4, compared to patients who are poor responders to those antidepressants without significant AEs (Controls).

Methods
For patients on usual dose of antidepressant, increased AEs was defined as > 3 moderate/severe AEs OR > 5 mild AEs. (Cases). Controls were patients with < 30% reduction in depression and minimal/no AEs. Genecept assay (battery of genetic tests) was obtained using saliva. SPSS v.19 was used for statistical analyses.

Results
39 patients, median 45.0 years old (range 21 to 69 years old, 77% female, 87.2% white were recruited; 14 (35.9%) cases and 25 (64.1%) controls.

Prior to the test, all patients agreed (46.2%) or strongly agreed (53.8%) that genetic testing would lead to their receiving medications that would work better than they had in the past. The majority also agreed (35.9%) or strongly agreed (53.8%) that they hoped that the results would allow prescription of an antidepressant with fewer side effects for them.

9/14 (64.3%) of patients with increased AEs (Cases) were poor/intermediate metabolizers on relevant P450 isoenzyme vs. only 16% of Controls (p= .004; Fisher's Exact test). 1/14 (7.1%) of Cases were P450 ultrarapid metabolizers vs. 8/25 (32%) of Controls (NS). No cases were homozygous (TT) for MTHFR C677T polymorphism vs. 20% of controls (NS). S/S or S/L forms of serotonin transporter promoter (SLC6A4) were not related to nonresponse or increased AEs. Cases did not have higher levels of trait anxiety on the State-Trait Anxiety Inventory (Mann-Whitney U test, p = .895)

Conclusions
Patients on selected antidepressants and with increased AEs have high incidence of being poor/intermediate P450 metabolizers.

Such testing should be routine is these patients. Higher proportions of nonresponders had MTHFR TT and SLC6A4 S/S polymorphisms though differences were not statistically significant. These should be reassessed with larger sample sizes.

The study was supported in part by a grant from Genomind, LLC

RANDOMIZED, PROOF-OF-CONCEPT TRIAL OF LOW DOSE NALTREXONE FOR PATIENTS WITH BREAKTHROUGH SYMPTOMS OF MAJOR DEPRESSIVE DISORDER ON ANTIDEPRESSANTS

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SUMMARY:

Introduction: The management of depressive breakthrough during treatment of major depressive disorder (MDD) is a challenging and understudied area. Although the pathophysiology of antidepressant tachyphylaxis is not fully understood, low dose naltrexone (LDN) may represent a promising approach through a mechanism of reversal of dopamine (DA) receptor desensitization proposed by Bear and Kessler. We carried out a pilot double-blind randomized controlled study of LDN 1mg twice daily versus placebo augmentation in patients who relapsed on dopaminergic agents.
Hypothesis: Subjects with depressive breakthrough on an antidepressant regimen containing a pro-dopaminergic agent assigned to LDN (1 mg bid) will demonstrate a more robust clinical improvement compared to subjects receiving placebo.
Methods: 11 of a projected 36 patients (73% female, mean age = 43 [SD 11]) who relapsed on various antidepressants and other DA agents (including methylphenidate or amphetamine stimulants, dopamine agonists, bupropion, low dose aripiprazole [â‰¤2.5mg/day], sertraline [â‰¥150mg/day], or duloxetine) were randomized to either naltrexone 1mg bid (n=5) or placebo (n=6) augmentation for 3 weeks. Outcomes were assessed based on the Hamilton Depression Rating Scale (HAMD; 17 and 28-item versions), Montgomery-Asberg Depression Rating Scale (MADRS; 10 and 15-item versions), and Clinical Global Improvement Scale-Severity (CGI-S). Repeated measures ANOVA was used to examine the treatment-by-time effect for each outcome measure. Effect sizes (ES) were calculated by Cohen's d.
Results: Intent to treat analysis was performed on 11 patients randomized thus far. ANOVA showed a statistically significant improvement ($p<0.05$) over time for all outcome measures for the sample as a whole. HAMD-17 scores decreased from 20.8 (SD 2.0) to 10.4 (SD 7.9) for LDN, and from 23.7 (SD 2.3) to 17.9 (SD 6.0) for placebo (d=0.72), but the time-by-treatment interaction was non-significant (p=0.331). HAMD-28 scores decreased from 26.8 (SD 4.9) to 10.0 (SD 10.1) for LDN, and from 26.3 (SD 2.6) to 19.8 (SD 6.6) for placebo (d=1.60), and significance was attained for the time-by-treatment interaction (p=0.024). MADRS-10 scores decreased from 30.8 (SD 5.6) to 10.8 (SD 8.9) for LDN and from 30.7 (SD 4.3) to 22.8 (SD 8.5) for placebo (d=1.81), and significance was attained in the time-by-treatment interaction (p=0.027). MADRS-15 scores decreased from 37.8 (SD 6.5) to 11.5 (SD 9.1) for LDN and from 36.7 (SD 4.2) to 26.0 (SD 10.0) for placebo (d=2.12), and significance was attained in the time-by-treatment interaction (p=0.023). CGI-S scores decreased from 4.4 (SD 0.5) to 2.8 (SD 1.1) for LDN and from 4.3 (SD 0.5) to 4.0 (SD 0.6) for placebo (d=1.95), and significance was attained in the time-by-treatment interaction (p=0.013).
Discussion: LDN may be an effective augmentation for individuals with MDD who

relapse on a regimen including dopamine enhancing agents. Confirmation in larger studies is necessary.

ARIPIRAZLE AS ADD ON FOR THE TREATMENT OF HYPERPROLACTINAEMIA INDUCED PALIPERIDONE PALMATATE INJECTECTION SIDE EFFECT.

Lead Author: Hellme Najim, M.D., M.R.C.

SUMMARY:
A 35 years old, Single Female who works as an officer in a public relation company.Suffers from schizophrenia was discharged from hospital after she was treated successfully as an in patient under the Mental Health Act by paliperidone palmatate 75mg monthly. She did well in the community but complained of engourged breast and lactorrhoea. Aripiprazole was added as 5mg daily. Her lactorrhoea stopped and her mental state improved. She continues to work and enjoys her life in the community.

EFFECTS OF FOOD ON THE PHARMACOKINETICS AND BIOAVAILABILITY OF QUETIAPINE XR: CLINICAL RELEVANCE OF DOSING INSTRUCTIONS

Lead Author: William Pottorf II, Ph.D.
Co-Author(s): Catherine J. Datto, M.D., M.S., Scott LaPorte, B.S., Jamie Mullen, M.D.

SUMMARY:
Introduction: Quetiapine extended release (XR) administered once daily has the same area under the plasma concentration-time curve (AUC) and elimination half-life (t1/2) as an equivalent total daily dose of quetiapine immediate release (IR) administered twice daily, following the recommended prescribing information.1,2 However, the pharmacokinetics and bioavailability of quetiapine XR can be influenced by caloric intake.
Methods: The effect of food (high-fat [800-1000 calories] meal and fasting) on the steady-state pharmacokinetics and bioavailability of quetiapine XR 50 and 300 mg tablets was explored in 30 patients (80% male, mean age 44.6 years) with schizophrenia or schizoaffective disorder.1,3 Additional studies were conducted in 20 healthy volunteers (Cohort A, 50 mg) and 13 patients with schizophrenia or schizoaffective disorder (Cohort B, 300 mg) to further examine differences in quetiapine XR with a light meal (no fat, â‰¤300 calories) or fasting (no food/liquid 10 h before and for 4 h after administration) conditions.1,4
Results: Under fasting conditions, quetiapine XR demonstrated linear pharmacokinetics with respect to maximum plasma concentration (Cmax), minimum plasma concentration (Cmin) and AUC.3 However, a high-fat meal produced statistically significant increases in the quetiapine XR steady-state Cmax of 44% and 52% and AUC of 20% and 22% for 50 mg and 300 mg tablets, respectively.1,3 In comparison, a light meal had no significant effect on the Cmax or AUC of quetiapine XR.1,4
Conclusion: Because of the influence of caloric intake on the pharmacokinetics and bioavailability of quetiapine XR formulation, it is recommended that quetiapine XR be taken without food or with a light meal.1
Research sponsored by AstraZeneca.
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EFFECTS OF CHRONIC ARIPIPRAZOLE ADMINISTRATION ON SEROTONIN AND

GLUTAMATE RECEPTORS: COMPARISON WITH CARIPRAZINE

Lead Author: Yong Kee Choi, Ph.D.
Co-Author(s): Yong Kee Choi, Ph.D., Nika Adham, Ph.D., BÃ©la Kiss, M.S., IstvÃ¡n GyertyÃ¡n, Ph.D.

SUMMARY:
Introduction: Cariprazine is an atypical antipsychotic currently in development for the treatment of schizophrenia, bipolar mania/depression and as adjunctive treatment of MDD. Cariprazine and aripiprazole both act as partial agonists at dopamine (DA) D3 and D2 receptors. We previously reported that chronic administration of cariprazine at antipsychotic-like effective doses altered serotonin (5-HT) and glutamate (Glu) receptors. Here, we compared the chronic effects of aripiprazole vs cariprazine on 5-HT and Glu receptor subtypes in rat forebrain regions.

Methods: Rats received vehicle or aripiprazole (2, 5, or 15 mg/kg, IP) for 28 days; cariprazine (0.06, 0.2, or 0.6 mg/kg, IP) was administered for 28 days in a previous study. Receptor levels were quantified using autoradiographic assays on brain sections from the medial prefrontal cortex (mPFC), nucleus accumbens (NAc), caudate putamen (CPu), hippocampal CA1 (HIP-CA1) and CA3 (HIP-CA3) regions, and entorhinal cortex (EC).

Results: Similar to cariprazine, aripiprazole dose-dependently increased 5-HT1A receptors in mPFC (24%-59%) and DFC (20%-39%). Higher doses of aripiprazole (5 and 15 mg/kg) increased 5-HT1A receptors in HIP-CA1 (31% and 56%, respectively) and HIP-CA3 (30%, 50%) regions. In contrast, all 3 cariprazine doses increased 5-HT1A receptors in HIP-CA1 (33%-50%) and HIP-CA3 (29%-52%). Aripiprazole (2, 5, or 15 mg/kg) decreased 5-HT2A receptors in mPFC (by 33%, 36% and 42%) and DFC (by 32%, 39% and 43%). Aripiprazole (5 and 15 mg/kg) also decreased 5-HT2A receptors in HIP-CA1 (by 28%, 32%) and HIP-CA3 (by 26% and 30%). Cariprazine did not alter 5-HT2A receptors in all forebrain regions examined. Aripiprazole (5 and 15 mg/kg) decreased NMDA receptors in NAc (by 26% and 30%), medial CPu (by 29% and 31%) and lateral CPu (by 30% and 32%). Aripiprazole also dose-dependently decreased NMDA receptors in HIP-CA1 (by 18%, 27% and 33%) and HIP-CA3 (by 20%, 25% and 34%). Similarly, cariprazine reduced NMDA receptor binding in NAc, CPu, HIP-CA1 and HIP-CA3. Both aripiprazole (5 and 15 mg/kg) and cariprazine (0.2 and 0.6 mg/kg) significantly increased AMPA receptors in HIP-CA1 and HIP-CA3 regions.

Conclusion: Repeated aripiprazole and cariprazine treatment induced similar effects on 5-HT1A, NMDA and AMPA receptors in different rat forebrain regions, which suggest that these receptors constitute common targets that mediate the actions of both compounds. Aripiprazole treatment selectively reduced 5-HT2A receptors in cortical and hippocampal regions, which may uniquely contribute to the actions of aripiprazole. The combined effects of cariprazine on 5-HT and Glu receptors, together with its unique actions on DA receptor subtypes, may confer cariprazine's safety, tolerability and clinical benefits on cognitive impairment and mood symptoms associated with schizophrenia and bipolar disorder. Supported by funding from Forest Laboratories, LLC, an affiliate of Actavis Inc., and Gedeon Richter Plc.

INCIDENCE OF SEROTONIN SYNDROME WITH CONCOMITANT USE OF SEROTONERGIC AGENTS IN THE U.S. VETERAN POPULATION

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Co-Author(s): Stephanie Alley, M.A., Onur Baser, M.S., Ph.D., Zhixiao Wang, Ph.D.

SUMMARY:
Background: Serotonin syndrome (SS) is an adverse drug reaction that can develop

from increased serotonin levels stimulating central and peripheral postsynaptic serotonin receptors, particularly serotonin 5-HT2A receptors.1 SS may occur in patients receiving monotherapy or combinations of serotoninergic agents (SAs). Although combination of SAs is common in clinical practice, the incidence and prevalence of SS is still largely unknown. Without these data, it remains difficult to assess the risk and benefit associated with the use of combining SAs.
Objective: To examine the prevalence and incidence of SS over time with concomitant use of SAs in the U.S. veteran population.
Methods: Adult (age â‰¥18 years) patients prescribed SAs were identified using the Veterans Health Administration (VHA) Medical SASÂ® dataset from 01OCT2008-30SEP2012. Patients with â‰¥12 months of continuous VHA health plan enrollment prior to the index date, defined as the first SA prescription claim date, were included and observed until death or the end of follow up. Patients were assigned to cohorts based on drug exposure: single MAOI (monoamine oxidase inhibitors) drug, one MAOI drug in combination with other SAs, single non-MAOI SA, and multiple non-MAOI SAs (2, 3, 4, or â‰¥5 SAs). Patients may be included in multiple cohorts depending on drug exposure patterns. Outcomes of interest were SS event (International Classifications of Diseases, 9th Revision Clinical Modification code 333.99), annual prevalence and incidence and incidence rate (in person-years). Poisson regression was used to analyze SS incidence trends, and adjusted incidence relative risks (IRRs) were estimated.
Results: A total of 3,349,984 patients were included in the cohorts. Annual SS incidence decreased from 0.19% in 2009 to 0.07% in 2012 among those VHA patients who were prescribed SAs. The highest incidence was observed in two cohorts: 1) patients who were prescribed a MAOI in combination with non-MAOI SAs (5.22 per 1,000 person-years) and 2) patients taking five or more non-MAOISAs (6.70 per 1,000 person-years). The lowest incidence of SS occurred in the cohort taking a single, non-MAOISA (1.28 per 1,000 person-years). Compared to those prescribed one non-MAOI drug, the adjusted IRR was 3.37 (95% confidence interval [CI]: 2.47 to 4.60) among patients prescribed a MAOI in combination with non-MAOI SAs, and 5.49 (95% CI: 4.93 to 6.11) for those taking five or more non-MAOISAs. SS prevalence decreased overall during the 4-year study period as well.
Conclusion: Although there was an increasing risk of SS when using more SAs in combination, the study found that the overall incidence and prevalence of SS were very low. This data provides doctors with additional information about SS associated with prescribing SAs.

1Evans RW, Tepper SJ, Shapiro RE, et al. The FDA Alert on serotonin syndrome with use of triptans combined with selective serotonin reuptake inhibitors or selective serotoninâ€ norepinephrine

"MORGELLONS DISEASE, THE CONTROVERSY: A DERMATOLOGICAL DISORDER OR A PSYCHIATRIC DISORDER IN THE AGE OF INTERNETâ€

Lead Author: Taylor Burns, M.D.
Co-Author(s): Daniel Safin, M.D., Simona Goschin, M.D.

SUMMARY:
Introduction: Morgellons Disease (MD) is a rare illness which primarily presents with dermatological symptoms described as fibers or other inanimate objects emerging from the skin. It is frequently associated with a number of other somatic, neurologic, and psychiatric symptoms and often leads to skin picking. Most typically, patients seek help from dermatologists and are reluctant to accept evaluation and intervention from a psychiatrist.

Initially described by a patient's mother in 2002, the illness led to the development of a prominent online community that lobbied for a CDC investigation. In 2012, the CDC released a report which found the etiology inconclusive but determined it to be most similar to delusional parasitosis/delusional infestation.
While there is limited research in the area, the general opinion is that MD is delusional disorder. Newer research articles suggest that there might be an underlying infectious process causing these symptoms (Spirochete).

Based on the new evidence that appeared during 2013, we report on the disease presentation and treatment course of a woman carrying a duel diagnosis of MD and Lyme disease who was hospitalized for cellulitis secondary to skin picking and required inpatient medical admission for cellulitis. We further review the literature on Morgellons Syndrome and discuss how to manage the illness pharmacologically and ethically. We describe the role of interdisciplinary treatment for optimal management of these patients.

Method: A literature review was conducted by searching PubMed database using the keywords: "Morgellons syndrome", "delusional parasitosis.

Results: We found a total of fifty papers. Out of these, twenty six papers were published in dermatology journals and nine were in psychiatric journals. Twenty five articles argued that Morgellons is a psychiatric diagnosis and six suggested an underlying infectious process.
Most papers suggest as main treatment antipsychotics while others recommend the addition of topical dermatologic treatments, antibiotics, antidepressants, and herbal supplements as combination therapy.

Discussion: The etiology of MD remains unclear and contested. While the medical community remains divided and research continues, psychiatrists should be aware of MD as it has consistently demonstrated a comorbidity rate with other psychiatric illnesses regardless of its underlying pathology. Psychiatrists should aim to work closely with other types of physicians to coordinate the care of the patients diagnosed with Morgellons.

CAN DIABETES HEALTH BELIEFS IN PATIENTS WITH SEVERE MENTAL ILLNESS INFLUENCE METABOLIC OUTCOMES?

Lead Author: Dale D'Mello, M.D.
Co-Author(s): Jay Shah, M.D., Jeffrey Frey, D.O.

SUMMARY:

Diabetes is twice as common among patients with schizophrenia, bipolar disorder and major depression, as compared to others in the general population. Health beliefs about diabetes influence treatment outcomes. Whereas, the influence of psychotropic medications upon glycemic control is widely recognized, the influence of health beliefs upon metabolic outcomes has received less attention. Objective: We sought to examine diabetes health beliefs in patients hospitalized with psychiatric disorders. Method: We invited all patients with diabetes who were hospitalized on a university-affiliated acute inpatient psychiatric service in mid-Michigan, between July and December 2013, to complete a brief self-administered, anonymous 16-item survey. We collected demographic information (age, gender, age at first diagnosis of diabetes), knowledge about diabetes medications, desired plasma glucose levels, and psychiatric illness. The patients rated the strength of their belief that they had a psychiatric illness on a 10-point Likert scale (Insight Score). They answered a series of questions derived from a widely-validated 9 item questionnaire about their diabetes health beliefs. This provided a Diabetes Health Beliefs Score. We used MYSTAT

Student Edition - Version 12 to analyze the data and examine the association between the Insight and Diabetes Health Beliefs Scores. Results: The 26 patients enrolled in the study included 9 men and 17 women, who ranged in age from 31 to 67 years. They included 11 patients with depression, 7 with bipolar disorder, and 8 with psychotic disorders. The correlation between the insight score and health belief score was statistically significant (p=0.009). Discussion: Patients with poor insight into their mental illness displayed poor insight into their physical illness as well. Erroneous health beliefs are associated with non-adherence with recommended treatment. Behavioral interventions such as Motivational Interviewing and Cognitive Restructuring, that elucidate, dispute and modify dysfunctional beliefs, enhance insight and promote change behavior, may be beneficial in improving treatment adherence and metabolic outcomes, in patients with severe mental illness and concurrent diabetes.

COMORBIDITY OF ANXIETY WITH HEART DISEASE AMONG ADULTS SEEN IN EMERGENCY DEPARTMENTS IN A LARGE ASIAN-AMERICAN AND PACIFIC ISLANDER POPULATION

Lead Author: June C. Lee, D.O.
Co-Author(s): Vinogiri K. S. Kunasegaran, M.sc., Eric Hurwitz, Ph.D., Dongmei Li, Ph.D., Deborah A. Goebert, Dr.P.H., Junji Takeshita, M.D.

SUMMARY:
Introduction: Coronary heart disease (CHD) is the leading cause of death in the United States. Recent studies suggest that depression and anxiety are strongly associated with an increased risk of CHD. However, there have been relatively few studies on the role of anxiety in CHD, especially in ethnically diverse populations such as Asian Americans and Pacific Islanders.
Methods: This study used a quantitative epidemiologic methodology that utilized secondary data from emergency department admissions (N = 790,934) of adult patients in Hawai'i. The emergency room data were obtained from the Hawai'i Health Information Corporation (HHIC) Emergency Department Database. Emergency department records from January 1, 2000 to December 31, 2010 were utilized for adults (18 years of age and above) with a diagnosis of specific types of heart disease (i.e., heart failure, cardiac arrest, cardiomyopathy, coronary atherosclerosis, acute myocardial infarction, and other ischemic heart diseases) and anxiety (i.e., anxiety states, panic disorder without agoraphobia, generalized anxiety disorder, phobic disorders, obsessive-compulsive disorder, and posttraumatic stress disorder). Mental health and heart disease diagnoses were coded according the International Classification of Diseases, Ninth Revision, Clinical Modification (IDC-9-CM). Ethnicity was based on self report of a single identity. Logistic regression analyses were used to analyze the data.
Results: Heart disease was comorbid with anxiety among adults admitted to emergency rooms for Hawai'i's ethnically diverse population. The estimated adjusted odds ratio of any heart disease diagnosis with anxiety for adults under 65 was 3.59 (95% confidence interval = 3.28 to 3.93) and for adults 65 years and over was 5.56 (confidence interval = 4.14-7.47). In both age groups, association of heart disease with anxiety was greatest among Pacific Islanders. Although the temporal relation between the cardiac diseases and anxiety is unclear, the findings are consistent with recent research showing that heart disease may be predictive of anxiety disorders.
Conclusions: This study provides further support to previous findings that anxiety is strongly associated with cardiovascular disease. There are important prevention and intervention implications for this finding. In addition, special consideration should be given to efforts regarding Pacific Islanders, given our finding of a stronger

association between heart disease and anxiety for this ethnic group in our study.

CANCER PATIENTSâ€™ HOPE AND ITS IMPACT ON THEIR OWN AND CAREGIVERSâ€™ EMOTIONAL STATES

Lead Author: Rathi Mahendran, M.B.B.S., M.Ed., M.Med.
Co-Author(s): Haikel A. Lim, B.S.Sc.(Hons), Joyce Y.S. Tan, B.S.Sc.(Hons), Ee Heok Kua, M.B.B.S, M.D.

SUMMARY:

Introduction

Hope, a 'future orientated phenomena', is a 'positive expectation for meaning attached to life events' (Casell, 1976). A component of a patient's resilience, Hope determines coping during the cancer journey, and can improve psychological and medical outcomes (Folkman, 2013). A patient's Hope can potentially affect their caregiver's wellbeing (Monin & Shulz, 2009); yet, few studies have examined the effect of Hope on patients' psychiatric sequelae, much less in Asia, and none have investigated the dyadic effects, in particular, on caregivers' psychological well-being. This study amongst Asian cancer patients hypothesized that Hope (1) would be negatively correlated with anxious and depressive symptomatology, similar to Western populations; and (2) per dyadic interactions, be negatively correlated with caregivers' stress, anxious, and depressive symptomatology.

Methods

Newly-diagnosed cancer patients without psychiatric history (N=189) and their caregivers (n=88) recruited at the National University Cancer Institute, Singapore participated in this ethics-approved study. Patients completed the (a) Adult Hope Scale, which measures levels of hope along two subscales, Agency (or goal-directed energy) and Pathway (or planning to accomplish goals); (b) Distress Thermometer; and (c) Hospital Anxiety and Depression Scale. Caregivers completed the short form Depression, Anxiety, and Stress Scale. Non-parametric analyses with significance levels set at .05 were conducted; there were no significant differences between patients with caregivers and those without a caregiver (all ps > .05).

Results

Patients averaged 49.4 years (Range 22â€“64 years; 68% were women, 62% Chinese). Patients were diagnosed on average 2 months earlier (range: 0â€“5 months). There were no significant differences in the sociodemographic and medical profile of patients with or without participating caregivers (all ps < .05). Caregivers averaged 42.7 years (Range 21â€“64 years; 49% women, 62% Chinese; 62% spouses; 32% family member).

Controlling for sociodemographic variables, patients' Hope was negatively correlated to their distress (rho[158]=â˜.28, p<.001), anxious (rho[183]=â˜.41, p<.001), and depressive (rho[184]=â˜.51, p<.001) symptomatology. These patterns were similar across both aspects of patients' Hope (Agency and Pathway). Patients' Hope and its aspects, however, were not correlated to their caregivers' stress, anxious, and depressive symptomatology.

Conclusion

Asian cancer patients' Hope was found to be a protective factor against their distress, and anxious and depressive symptomatology similar to findings in Western cancer populations; however, there was no evidence to suggest that their levels of Hope directly influenced their caregivers' stress, anxious and depressive symptomatology. While these findings are from cross-sectional data and require further exploration longitudinally, they have implications for service planning and care provision.

SYSTEMATIC REVIEW OF THE EFFECTIVENESS OF CONSULTATION LIAISON PSYCHIATRY

Lead Author: Anne P.F. Wand, M.B.B.S.
Co-Author(s): Rebecca Wood, MBBS

SUMMARY:
Aim: To review the effectiveness of consultation-liaison psychiatry (CLP) in the general hospital.
Methods: A systematic review was conducted using the databases Medline, PsychInfo, and All EBM reviews and expert opinion sought.
Results: Five measurements of effectiveness emerged from the 40 included articles: concordance, length of stay, patient and staff feedback and follow-up/outcomes. Only concordance was measured in a consistent, replicated manner. Levels of evidence were low overall, although better for cost-effectiveness and follow-up studies. There were significant methodological problems and disparity between the subjective consumer feedback studies. CLP services were effective in reducing costs and length of stay and with concordance for some management recommendations.
Conclusions: CLP is cost-effective. Studies had variable results and significant methodological limitations. Future work should establish standardised methods for obtaining patient and staff feedback and short-term outcomes.

OUTCOMES IN PATIENTS WITH BIPOLAR DISORDER WHO UNDERWENT KIDNEY TRANSPLANT

Lead Author: Ilona Wiener, M.D.
Co-Author(s): Ilona Wiener M.D., Geoffrey Dube M.D.

SUMMARY:
Bipolar disorder is a disease, affecting ~1% of the population. Lithium is effective therapy for bipolar disorder but is nephrotoxic and increases the risk of end-stage renal disease (ESRD). Newer treatments for bipolar disorder have been available and enable patients to have bipolar disorder symptoms well controlled on non-nephrotoxic regimens. Uncontrolled bipolar disorder is a contraindication to renal transplant. However, patients with well controlled bipolar disorder who progress to ESRD may be candidates for renal transplant. There are few data on outcomes in patients with bipolar disorder following renal transplant.
METHODS: Single-center retrospective study of all adults with bipolar disorder who received a renal transplant from 7/1/02-12/31/12. All patients with bipolar disorder underwent a thorough psychosocial evaluation, including evaluation by a transplant psychiatrist, prior to listing. In all patients, bipolar disorder was well-controlled on a stable medical regimen, with no manic or depressive symptoms at the time of initial evaluation or transplant.
RESULTS: 21 patients with bipolar disorder received a renal transplant during the study period, representing 0.98% of the total transplant population. 16 patients had ESRD from lithium. All patients received standard immunosuppression, including tacrolimus. In 17/21 patients, steroids were discontinued within 1 week of transplant. Patient demographics are shown in table. With mean follow up of 46.8 [Â± 32.9) months, patient survival was 85.6%: 1 patient died of cardiac arrest 4 days after transplant, 1 patient died of lymphoma 5 months after transplant, and 1 patient died of unknown causes 4 years after transplant. Death-censored graft survival was 92.3%; the only graft loss was due to primary nonfunction. Pre-transplant, 3/21 were current smokers, 7/21 were former smokers and 11/21 had no tobacco history. There was no history of substance abuse in any of the patients. 5/21 were working at the time of transplant. Post-transplant 7/21 patients had a psychiatric admission, occurring at a median of 11.1 months after transplant (range 6.4-37.8). One patient required a temporary return to lithium.

CONCLUSIONS: Renal transplant can be performed safely in patients with well controlled bipolar disorder. There is a low risk of acute rejection and excellent intermediate-term graft survival. There is a risk of decompensation of bipolar disorder after transplant requiring hospitalization, though it is unclear whether this is related to transplant-specific factors or the natural history of the disease. Well-controlled bipolar disorder should not be considered a contraindication to listing for renal transplant.

ATTACHMENT STYLE AND EXPRESSION OF JEALOUSLY IN ROMANTIC LOVE

Lead Author: Borjanka Batinic, D.Phil., M.D.
Co-Author(s): Marija Milosavljevic, M.Phil., Olivera Novakovic, M.Phil.

SUMMARY:

Introduction: Romantic jealousy is a multi-dimensional complex, with emotional, cognitive and behavioural dimensions, caused by the threat of losing a valuable relationship. Differences in attachment styles (secure, preoccupied, fearful-avoidant and dismissive) influence the way that an adult person feels, thinks and behaves toward a real or imagined threat to a partnership, leading to individual differences in expression of romantic jealousy.

Objectives: The aim of this study was to explore the relationship of jealousy dimensions and attachment styles in a sample of the general population in Serbia, and to determine the attachment style, which makes a person most vulnerable in expressing romantic jealousy.

Method: The study was conducted online on a sample of the general population of 312 subjects (162 women and 150 men), age between 18 and 50 years old, who had been in a relationship for at least 3 months. The Multidimensional Jealousy Scale was used for measuring the dimensions of jealousy (emotional, cognitive and behavioural), and attachment styles were operationalized through the Experiences in Close Relationships Scale.

Results: The frequency of secure, preoccupied, fearful-avoidant and dismissive attachment styles was 70.8%, 11.5%, 3.2% and 14.4%, respectively. The differences on the global romantic jealousy score identified among the different attachment styles ($F=5.719$, $p<.001$) were as follows: secure attached persons achieve the lowest scores ($M=66.07$) and preoccupied attached persons achieve the highest scores ($M=78.50$) of jealousy in romantic love.

There were no significant differences between attachment styles and the emotional dimensions for romantic jealousy. The preoccupied attachment style corelated the most to the behavioural dimension of romantic jealousy ($p <.001$), while the other styles have an equal corelation to this aspect. Persons with secure attachment style significantly differ from those with preoccupied ($p <.001$) and dismissive attachment styles ($p <.05$) on the cognitive dimension of romantic jealousy, and these differences are also present among persons with preoccupied and dismissive attachment styles ($p <.05$). Persons with preoccupied attachment style expressed a higher level of the cognitive aspect of romantic jealousy. Analysis showed that the relation of attachment styles and romantic jealousy manifests itself predominantly through the behavioural and cognitive dimensions of jealousy.

Conclusion: As jealousy is associated with relationship dissatisfaction, conflicts and possible partnership violence, these findings could be important for the improvement of therapeutic programmes and interventions related to romantic jealousy. As persons with preoccupied attachment style are the most vulnerable for expressing romantic jealousy, especially its behavioural and cognitive dimensions, it is expected that therapeutic interventions focused on preoccupied bonding would be the most effective.

IS RATER CHANGE ASSOCIATED WITH IDENTICAL SCORING A MARKER OF POOR DATA QUALITY?

Lead Author: David G. Daniel, M.D.
Co-Author(s): Alan Kott, MD

SUMMARY:
Is Rater Change Associated with Identical Scoring a Marker of Poor Data Quality?

Alan Kott and David G Daniel

Bracket Global, LLC

Background: We have recently identified identical scoring of all 30 PANSS items across consecutive visits as a potential marker of poor data quality (Daniel and Kott, 2014). Our findings indicate that it is highly unlikely to rate all 30 PANSS items identically across consecutive visits even for a skilled rater. In the current analysis, we assessed the likelihood of two different raters scoring all 30 PANSS items the same across visits in both the clinical trials setting as well as when rating a videotaped interview.

Methods: Our data come from 11 global schizophrenia trials for which we have access to PANSS ratings of both live study subjects and videotaped interviews utilized to certify investigators. In the blinded subject study data, we identified instances where PANSS ratings for the same subject were conducted by 2 different raters at consecutive visits (rater change) and identified how often these ratings were identical across all 30 PANSS items (identical scoring). Proportions of identical scoring in the certification data were calculated from all possible pairs of interviews between individual raters. We compared the actual study data and the certification data using Fisher's exact test. For purposes of analysis we hypothesized that there would be no difference in the proportion of identical scores between the certification and study data.

Results: Certification data: 2275 raters attempted certification. The total number of possible rating pairs was 907,966 and the total number of rating pairs with identical scoring was 146 (0.016%). Study data: The study data consisted of 48,308 PANSS interviews with the potential to have a rater change or be identical. Rater change between visits occurred 4095 times (8.5%). Identical ratings associated with a rater change were recorded in 172 instances (4.2%). The Fisher's exact tests yielded significant results. The number of instances of rater change associated with identical scores in the study data significantly exceeded the numbers of identical ratings observed during certification.

Discussion: Our current analysis indicates that the proportion of rater changes associated with identical scoring in the study data available exceeds the expected proportion derived from certification data by a factor of 260. This raises questions whether the affected study PANSS interviews and scoring procedures were conducted independently of each other. We suggest rater change associated with identical scoring be used as a heavily weighted marker of poor data quality and any presence of such finding be investigated further by means of review of recorded interviews, workbook's inclusive of scoring rationales or other available means.

OPTIMIZATION OF A DIGITAL HEALTH FEEDBACK SYSTEM IN PSYCHIATRY

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Co-Author(s): Deborah Profit, Ph.D., Jonathan Knights, Ph.D., Lada Markovtsova, Ph.D., Stephen H. Koslow, Ph.D., Timothy Peters-Strickland, M.D., Jeffrey Yuan, Ph.D., Ainslie Hatch, Psy.D., Ph.D.

SUMMARY:
Introduction: Measuring medication adherence is a significant unmet medical

need in psychiatry. Nonadherence substantially compromises the effectiveness of available psychiatric treatments, and a digital health feedback system (DHFS) offers new opportunities. This investigational system includes a tablet with an embedded ingestible sensor that sends signal to a wearable sensor after ingestion. A mobile application on the patient's mobile device receives data transmitted from the wearable sensor and displays actionable healthcare information for the patient and treatment team based on the patient's data (i.e., medication ingestion, activity, and rest) and the patient's input on the application (i.e., self-reported rest quality and mood).

Objective: To develop a DHFS in psychiatric populations, various independent studies employing novel and agile research principles are necessary. The development requires assessment of a patient's ability to use individual system components of the technology as well as the system as a whole.

Methods/Results: Several successive studies (316-13-204, 316-13-205, and 316-13-206) that require rapid refinement and adaptation to proceed to the next level were conducted to optimize the DHFS. First, to evaluate potential skin irritation, a standard 28-day study (205) was conducted with the wearable sensor. This study was able to exclude skin irritation issues and demonstrated acceptable wear-ability. Second, the mobile application was tested and improved through a prototype refinement study (204) where 58 bipolar and major depressive disorder patients provided quantitative and qualitative usability feedback based on 16-week use of the system. Third, using the 204 study data, end-to-end bench-level integrated system-testing prompted the establishment of a master protocol (206) with up to 24 sub-studies to investigate various aspects of the system (e.g., latency for ingestible sensor) in healthy volunteers and patients. Finally, a method testing human factors has been employed to assess the safe and effective use of the entire system in a psychiatric population.

Conclusions: In order to develop a DHFS in psychiatry, it is important to optimize the multiple components of the product using various methodologies (i.e., safety studies, end-to-end bench-testing, human factors) with a patient-centric focus on usability and agile evaluation.

GENDER DIFFERENCES IN THE CAREER PLANS OF PSYCHIATRY RESIDENTS

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

SUMMARY:

Introduction: Fellowship and career goals often change throughout postgraduate year levels and can vary amongst different genders. Women make up 55% of the total 4,947 psychiatry residents, and about 62% of women make up the 838 total fellows in child and adolescent psychiatry yet remain under-represented in certain areas of psychiatry and in leadership (Roberts 2014). We are unaware of any current studies examining the effect of gender on career planning for resident psychiatrists.

Objective: To examine gender difference in career goals and fellowship plans in psychiatry resident physicians.

Method: A voluntary, anonymous, 10-minute survey was emailed to psychiatry residents from all 14 ACGME-accredited programs in Pennsylvania, New Jersey and Delaware. Included in the survey were questions about fellowship plans and anticipated practice types and settings.

Hypothesis:
1. Female resident psychiatrists will be equally as likely as males to

demonstrate interest in fellowships following completion of residency.
2. Fewer female residents will foresee careers in academic medicine and more will report they are likely to go into private practice.
3. There will be no gender difference among those going into community psychiatry, public health advocacy, and psychotherapy.

Results: Response rate was 133 (40.5%) of 328. On a 5-point Likert scale where 5 is "extremely likely", the percentage of residents who reported a 4 or 5 to "how likely you are to have a career in x area" was highest for private practice (58.33%) followed by academic medicine (46.79%), community psychiatry (36.94%), and Public health/advocacy (22.43%). Percentage of residents reporting a 4 or 5 on a 5-point Likert scale for "how much of your career you anticipate you will dedicate to psychotherapy" was 34.26%. Percentage of residents consider applying to fellowships was highest for child at 37.5%, followed by psychosomatic (18.27%), addictions (11.54%), and forensics (10.58%). Data from male and female psychiatry residents will be presented and compared using two-sample t-test.

Discussion/Conclusion: Potential factors affecting career plans for male and female resident physicians are discussed. While career goals and intentions of resident physicians do not always neatly translate into post-graduation careers, more attention should be paid to factors affecting resident career goals and decisions if we want female physicians to be equally represented in all areas of psychiatry.

References

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PREVALENCE OF SLEEP PROBLEMS AND ITS IMPACT ON ANXIETY, DEPRESSION AND QUALITY OF LIFE IN KOREAN FIRE FIGHTERS

Lead Author: Sang Yeol Lee, M.D., Ph.D.
Co-Author(s): Sung Yong Park, M.D., Hey Jin Lee, Ph.D., Min Cheol Park, M.D., Ph.D., Yeon Jin Kim, M.D.

SUMMARY:

Background: Professional fire fighter is a strenuous and unique occupation due to the high levels of stress and risk involved as well as the low control nature of the job. Anxiety and depression are prevalent in the professional fire fighters' population and constitute a dominant area of investigation. Limited attention have been given to impact of sleep problems on the anxiety, depression and quality of life in fire fighters. The aim of this study is to evaluate prevalence of sleep problems and its impact on anxiety, depression and quality of life in Korean fire fighters.
Methods: Using simple sampling method in a cross-section study in Jeonbuk province of Korea, sleep problems, anxiety, depression and quality of life of 1669 professional fire fighters were measured with Patients Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder 7 item (GAD-7) and brief version of World Health Organization Quality of Life assessment scale (WHOQoL-Brief). Sleep problem was measured with 3 item of PHQ-9, the definition of sleep problems group was not able to initiate sleep or maintaining sleep. We measured cross-sectional Odds ratios for sleep problems group on depression and anxiety by logistic regression analysis.
Results: The prevalence of sleep problem of Korean fire fighters was 51.2%. Korean fire fighters with sleep problems showed not only more anxiety ($p<0.001$) and depression($p<0.001$) but also lower quality of life ($p<0.001$). The sleep problems group was more likely to suffer from depression (OR=47.537,95%, CI: 33.669- 64.323) and anxiety (OR=9.822, 95%, CI: 7.529-12.813). The severity of sleep problems in Korean

fire fighters was positive correlated with depression and anxiety.
Conclusion: These results show that higher prevalence of sleep problems in Korean fire fighters and Korean fire fighters with sleep problems have more depression and anxiety, and less quality of life than fire fighters with\-out sleep problems. Sleep problems are important risk factor on the depression and anxiety in Korean fire fighters. Early detect of sleep problems of fire fighters will be needed to manage of depression and anxiety.

USE OF RTMS TO TREAT INSOMNIA DISORDER: AN OVERVIEW

Lead Author: Deepti Kaul Mughal, M.D.
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SUMMARY:

Repetitive Transcranial Magnetic stimulation (rTMs) is a novel office based procedure, approved by FDA for the treatment of treatment-resistant depression in 2008. Over past two decades efforts have been made to develop therapeutic potential of rTMS for wide variety of neuropsychiatric disorders like schizophrenia, PTSD, OCD, ASD, ADHD, sleep wake disorders, stroke Rehabilitation, parkinson's Disease, amyotrophic lateral sclerosis (ALS), tinnitus, chronic pain, migraine and epilepsy. Insomnia disorder is a common problem worldwide and it seems that most of psychopharmacological and psychotherapeutic modalities have not proven to provide the satisfactory relief of symptoms. There is need to develop treatment of insomnia that is easy to administer, safe and well tolerated by patients. TMS and other neurophysiological studies have shown presence of a diffuse cortical hyper-arousal in patients with chronic insomnia. TMS may be able to play a role in diagnosing insomnia, and possibly prove to be a treatment for insomnia, perhaps through reducing excitability. rTMS is a non-invasive treatment that utilizes repetitive pulses of an MRI-strength magnetic field from a coil placed over the scalp to stimulate brain tissue beneath, inducing currents that influence cortical excitability by either stimulating or inhibiting the brain activity and modulate behavior. High frequency TMS (>1 Hz) has been shown to be activating whereas low frequency TMS (<1Hz) has been shown to be inhibitory in neurophysiological and clinical studies. rTMS treatment in Insomnia Disorder is appealing , as it avoids the use of polypharmacy and tolerance that develops by the use of hypnotic and sedative medications. The available evidence shows that potential benefit of this treatment modality is that it is relatively free of systemic side effects, safe and well tolerated by patients. Various rTMS studies for sleep disorders alone or associated with other neuropsychiatric disorders have utilized various stimulation parameters including various frequencies and motor threshold intensities, which makes interpretation of data, somewhat difficult. rTMS may become one of the effective tools for patients with insomnia who either have failed the other therapeutic modalities of treatment or have contraindications for them including patients who are pregnant, breast feeding or elderly population who have can tolerate the sedative hypnotics. Existing data indicates the improvement in sleep via low frequency and high frequency stimulation of cortical regions. Further research is needed to have clear-cut protocols for frequency and site of application of rTMS with established safety profile of the rTMS in insomnia. The use of TMS directed to improve sleep quality and quantity needs further studies. The goal of this review is to translate the knowledge learned from different clinical studies of insomnia to the clinical treatment of insomnia using TMS as the primary modality in future.

A CASE OF CONVERSION DISORDER WITH CONCEPTUAL AND TREATMENT CHALLENGES

Lead Author: Furqan Nusair, M.B.B.S.
Co-Author(s): Rafael Klein-Cloud, A.B.
Nathan Frank, B.A.

SUMMARY:
MP a 39 year old female with no previous psychiatric history that presented with somatic complaints following multiple emergency visits, with multiple psychosocial stressors including a relationship breakdown. She was assessed as having conversion disorder after medical investigations did not yield a diagnosis. Her case is used to frame the conceptual, diagnostic and treatment challenges faced by the contemporary psychiatrist in establishing the diagnosis of conversion disorder, providing evidence-based therapies and offering a prognosis supported by the best available literature. Evidence-based therapies are reviewed including hypnosis and psychotherapies while prognostic factors are discussed

PATIENT PERCEPTIONS OF COMMUNITY MENTAL HEALTH TREATMENT AND COMMUNITY TREATMENT ORDERS (CTOS)

Lead Author: Arash Nakhost, M.D., M.Sc., Ph.D.
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SUMMARY:
Introduction: Deinstitutionalization of psychiatric patients in the 1960s in many countries led to an increase in the scope of community based psychiatric treatments. This, in turn, resulted in the introduction of more coercive elements and different types of leverage in community practices, such as mandated community treatment orders (CTO) to manage "revolving door" patients. As the use of CTOs, and the scope of community treatment, continues to expand and the effectiveness and ethics of such measures are debated, it is important to examine these methods and the perception of psychiatric outpatients of these measures.

Hypothesis: We hypothesize that treating patients under a CTO can (i) affect their perception of their treatment, (ii) cause them to question the procedural justice of the treatment decisions taken on their behalf, (iii) compound with other types of leverage that may have already been utilized in their treatment, and (iv) impact their relationship with their treatment team.

Methods: A one-time survey was administered to patients treated under a CTO in Toronto, Canada. Primarily quantitative measures including adapted outpatient versions of the MacArthur Perceived Coercion Scale were used to assess participant experiences and patient characteristics. Opportunities were provided for qualitative elaboration on key measures of leverage and experience with CTOs.

Results: Patients reported a range of experiences related to being placed on and treated under a CTO. The majority of patients interviewed were diagnosed with a psychotic disorder, followed by a community mental health team, had insight, and were regularly taking medication. Most felt that they had been persuaded or forced into treatment, while less than half felt they were induced, threatened, or deceived. A majority of patients felt their current treatment was effective in treating their mental illness. Approximately one third, however, cited feeling dissatisfied when they were reminded of their CTO and its consequences. Many participants had multiple additional community leverages applied to them, including financial guardianship, housing decisions, and family pressure to continue with their treatment. When discussing these leverages,

participants used qualitative descriptors such as "controlled" or "forced" to describe their situation.

Discussion: Patient perceptions of coercion may be mitigated or exacerbated by contextual factors, including the combination of multiple leverages and the way they are initiated and used. Debates in community mental health care around the use of coercion and legislation such as CTOs should consider patient perceptions of coercion and relationships between these perceptions and patient quality of life.

Conclusions: As community mental health treatment options grow, a consistent critical gaze should be applied to the use of coercion and leverage in community settings, and impacts on patient well-being and recovery.

THE WANDERING MENTALLY ILL IN THE MENTAL HEALTH SERVICES OF INDIA

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Co-Author(s): Gaurav Singh M.D., Ritambhara Mehta M.D., Nilima Shah M.D.

SUMMARY:

The wandering mentally ill in the Mental Health services of India.

Background: There are estimated 400,000 wandering mentally ill persons in India, found in poor physical state wandering on streets and railway stations; mainly treated either by government run Hospitals for Mental Health (HMH) or Psychiatry department of a Government medical college (GMC). Their presentations to these facilities, clinical profile, course during hospital stay and their outcome is being evaluated in this study.

Aims & objectives:

To study the presentation, clinical profile and outcome of wandering mentally ill admitted in government psychiatric care facilities.

Methodology: the study is a retrospective chart review of all wandering mentally ill patients admitted during the past two years as well as all currently admitted patients. Clinical staff was interviewed for cross checking the data and for problems faced in management. The discharged patients were contacted to assess the present status.

Results & discussions:

47 patients in HMH and 35 patients in GMC were studied.

Presentation: brought to mental health facility by helping person (38%) & police (30%). Majority of them (85%) were picked up from streets and railway station in big cities. Most of them (68%) were <40 years of age with language barrier (55%).

Clinical profile: Diagnosed as Psychosis NOS (64%) initially, they commonly present with Infections/wounds (43%) with positive viral markers (28%) especially HbsAg (14%) and pregnancy in females (6%). 35% of them had abnormal findings either of deranged blood counts, liver function, renal function, electrolyte disturbances, abnormal chest X-ray and ECG. Most common final diagnosis made was schizophrenia (70%) along with prominent negative symptoms (62%), with poor cognitive abilities (45%) and poor treatment outcome (58%). Others are bipolar mood disorder(14%) and mental retardation (10%). Absconding tendency (58%), fecal or urinary incontinence (45%), convulsions(15%) and motor retardation (35%) were also present.

Outcome: average duration of stay in HMH was 6 years while in GMC was 5 months, nearly half of them (42%) show good improvement on treatment. 52% were able to provide their address on improvement. Relatives were found in 34% through police, post cards & social worker. 25% of them were rehabilitated back to family,50% of them are still staying in treating institution and rest rehabilitated to government run residential facilities and NGOs. Of those rehabilitated back to family 25% have worsened again and 10% are again lost.

Conclusions: wandering mentally ill constitutes a unique patient population with specific challenges in management and

rehabilitation. Provisions to take care of this most vulnerable group of the society and mechanisms to watch for their continuous implementation are required. If efforts are done in right direction they can be rehabilitated back to family.

USE OF PRAZOSIN FOR TREATING PTSD SYMPTOMS IN THE INTELLECTUALLY DELAYED POPULATION

Co-Author(s): Steven Thornton, M.D., Timothy Bruce, Ph.D., Thomas Brewer.

SUMMARY:

Efficacy of Prazosin in Treating Sleep Disturbance in the Intellectually Delayed Population

Objective: The present study examines the effects of prazosin in reducing nightmares and agitation in intellectually disabled (ID) participants.

Methods: A retrospective chart reviews of 18 participants from multiple ID residential organizations was conducted to assess whether sleep and aggression improved following prazosin administration.

Results: A 61% response rate was found on sleep measures.

Discussion: This response rate is consistent with response rates to prazosin in combat veteran samples and beyond reported placebo response rates. The result increases confidence that the medication contributed to the response and supports the call for further controlled study of the efficacy of prazosin in the ID population.

EFFECTS OF ESCITALOPRAM ON AUTONOMIC FUNCTION IN POSTTRAUMATIC STRESS DISORDER AMONG VETERANS OF OPERATIONS ENDURING FREEDOM AND IRAQI FREEDOM

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SUMMARY:

Objective: Posttraumatic stress disorder (PTSD) is a chronic, debilitating condition that has become a growing concern among combat veterans. Previous research suggests that PTSD disrupts normal autonomic responding and may increase the risk of cardiovascular disease and mortality. Measures of heart rate variability (HRV) and QT interval variability have been used extensively to characterize sympathetic and parasympathetic influences on heart rate in a variety of psychiatric populations. The objective of this study was to better understand the effects of pharmacological treatment on autonomic reactivity in PTSD.

Design: A 12-week Phase 4 prospective, open-label trial of escitalopram in veterans with combat-related PTSD and comorbid depression.

Setting: An outpatient mental health clinic at a Veterans Affairs (VA) Medical Center.

Participants: Eleven male veterans of Operations Enduring Freedom and Iraqi Freedom (OEF/OIF) diagnosed with PTSD and comorbid depression.

Measurements: Autonomic reactivity was measured by examining HRV and QT interval variability. Treatment safety and efficacy were also evaluated pre- and post-treatment.

Results: We observed a reduction in PTSD and depression symptoms from pre- to post-treatment, and escitalopram was generally well tolerated in our sample. In addition, we observed a decrease in high frequency HRV and an increase in QT variability, indicating a reduction in cardiac vagal function and heightened sympathetic activation.

Conclusion: These findings suggest that escitalopram treatment in patients with PTSD and depression can trigger changes

in autonomic reactivity that may adversely impact cardiovascular health.

LASTING IMPACT OF DIRECT EXPOSURE TO TERRORISM ON HEALTH, MENTAL HEALTH AND POSTTRAUMATIC GROWTH

Lead Author: Phebe M. Tucker, M.D.
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SUMMARY:
Introduction: Little is known about the long-term impact of intense exposure to terrorism on individuals' health, mental health, coping and posttraumatic growth.
Methods: 81 direct survivors of the 1995 Oklahoma City bombing, of whom 80% were injured by the blast, were compared with 81 non-exposed community controls matched in age, gender, ethnicity and annual household income. Major medical and mental health problems (Health Status Questionnaire), health care utilization, levels of depression and anxiety (Hopkins Symptom Checklist) and PTSD (Breslau), alcohol use and posttraumatic growth (Posttraumatic Growth Inventory) were assessed through telephone surveys. Paired t-tests, Wilcoxon's signed rank test, McNemar's test and Pearson's correlation coefficient were used in statistical analyses, with significance set at 0.05
Results: Survivors did not differ in reported rates of hypertension, heart disease, stroke, diabetes or arthritis, and COPD was nonsignificantly higher in survivors (22.2%) than controls (14.8%). Frequency of health care utilization in the previous 12 months did not differ between groups. Bombing survivors had higher depression and anxiety symptom scores than controls, and reported consuming more alcohol in the prior week and month. Survivors' depression and anxiety symptoms were significantly and positively associated with having 5 or more drinks on a single occasion in the previous 30 days. Among controls, only depression symptoms were associated with drinking 5 or more drinks at one time in the prior 30 days (r=0.49; p=0.0006). The majority of survivors also reported elements of positive growth in changing life priorities, better understanding spiritual matters, better handling of difficulties, feeling stronger and learning that people are wonderful.
Conclusions: While direct survivors of terrorism did not report more major medical problems or health care utilization than controls, they did have more anxiety and depression symptoms almost 19 years after the disaster. Survivors appeared to use more alcohol than controls, and their higher alcohol use was associated with depression and anxiety symptoms. While alcohol use may be a way that they cope with trauma memories, the majority also reported positive growth and coping in the aftermath of their trauma experience.

A MODEL WELLNESS INTERVENTION AIMED AT REDUCING CARDIOMETABOLIC SYNDROME RISK ASSOCIATED WITH PSYCHOTROPIC MEDICATIONS

Lead Author: Raymond J. Kotwicki, M.D., M.P.H.
Co-Author(s): Philip D. Harvey, PhD

SUMMARY:
BACKGROUND: Individuals with mental illnesses face particular risk for developing heart, pulmonary, and energy problems, collectively called cardiometabolic syndrome. High Body Mass Index (BMI), hypercholesterolemia, hypertriglyceridemia, hypertension, and hyperglycemia are the components of this syndrome. Two classes of medications used to treat individuals with schizophrenia, bipolar disorder, and depression â€“ atypical antipsychotics and mood stabilizers â€“ are known to exacerbate the problem, as are a number of the correlates of severe mental illness including a sedentary lifestyle and social isolation.

METHODS: Eleven patients being treated with atypical antipsychotics, mood stabilizers, or both were enrolled in a structured wellness program at Skyland Trail, a private psychiatric rehabilitation facility. The patients were given access to a personal trainer for weight control and to promote development of lean muscle mass. A low-carbohydrate, high-lean-protein meal plan provided six meals daily. Psychoeducation about the link between physical and mental health, including a tobacco cessation component and nutritional education, were provided. Meditation and relaxation classes, including yoga, were offered. Regular monitoring of physiologic indices was conducted. Medication treatment of insulin resistance or hyperglycemia was provided as indicated.
RESULTS: For the 11 patients who completed the program to date, there were several changes in their physical functioning. Body mass index (BMI) manifested a statistically significant decrease of three points for seven of the 11 clients ($p<.008$). Further, when compared to clients enrolled in healthy challenge, other clients at the rehabilitation facility manifested a statistically significant two point increase in their BMI during the course of treatment. The participants also manifested a decrease in their total cholesterol during treatment (mean=22 points, $p=.07$). Finally of the 11 cases, five had more than one day where they walked more than 10,000 steps, seven had two or more days with more than 8,000 steps, and nine clients did not have a day without 6,000 or more steps, thus showing that the intervention is associated with excellent levels of physical activity.
IMPLICATIONS: The healthy challenge intervention leads to decreased BMI and high levels of physical activity. This BMI decrease is more substantial when considering the fact that the typical client manifested a treatment related weight gain of two BMI points, reflecting a net loss of five BMI points. Activity levels were high for most patients and cholesterol levels manifested a marginally significant decrease for the sample as a whole, with the decrease being over 20 points on average. These findings suggest that a healthy living intervention is feasible in the context of a day treatment for severe mental illness. More clients will have completed the intervention by the time of this presentation.

EXAMINING PATTERNS OF ALCOHOL USE IN BURMESE REFUGEES IN HOUSTON

Lead Author: Nidal Moukaddam, M.D., Ph.D.
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SUMMARY:

Background:
In refugee populations, relocation and acculturation have been found to relate to increasing rates of substance use, particularly alcohol. It has been hypothesized that relocation-related trauma and exposure to civil strife can be related to alcohol abuse or dependence, but the topic has not been well studied. Not much is known about success of substance use treatment in this population. Several anecdotal reports from resettlement agencies in Houston have been relayed to our Clinic for International Trauma Survivors(CITS), highlighting a growing concern in our community.
Methods:
Focus groups with Burmese refugees and with community leaders were conducted. The purpose of the focus groups was to elicit clarification of the alcohol use patterns encountered in the Burmese community in Houston, to assess problems related to those patterns, and to evaluate what interventions or treatments would be acceptable to that community.

Results:
There is reluctance to discuss alcohol and substance use in general among the Burmese community. Alcoholism is seen as a problem, but not a prevalent one; when it exists, it is seen as severe. Alcohol use escalates post-relocation for some groups, especially males. This exacerbates domestic violence and may lead to involvement with the legal system and child protection agencies.
Conclusions:
Patterns in alcohol use differ amongst Burmese subgroups. Easier/cheaper access to alcohol in the US may be related to the observed patterns, as well as different societal expectations post-resettlement. Discrepancy in reporting of alcohol use may be related from stigma or lack of trust in non-Burmese care providers. Nevertheless, the most prevalent conceptualization of alcoholism encountered in our focus groups was congruent with a moral model of addiction. These barriers need to be addressed for effective treatment to be implemented

HOSPITALIZATION AND EMERGENCY ROOM UTILIZATION IN PATIENTS WITH SCHIZOPHRENIA RECEIVING ATYPICAL ANTIPSYCHOTICS IN THE OUTPATIENT SETTING

Lead Author: Carmela J. Benson, M.S.
Co-Author(s): Paul Juneau, M.S., Carmela Benson, M.S., M.S.H.P., Xue Song, Ph.D., John Fastenau, R.Ph., M.P.H.

SUMMARY:

Background: Patients with schizophrenia are often treated in outpatient settings, such as community mental health centers. These patients may maintain wellness and achieve long-term recovery with effective treatment. Thus, real-world evidence on the effectiveness of atypical long-acting injectable antipsychotics (LAI) in this setting is critical for clinical decision-making. Our study evaluated inpatient (IP) admission and emergency room (ER) visits among patients with schizophrenia receiving paliperidone palmitate (PP) to a matched cohort of oral atypical antipsychotics (OAT) treatment in an outpatient setting.

Methods: Our study used data from the REACH-OUT registry. Patients, who completed the 12-months follow-up after study enrollment were included. Matching with multiple control groups with adjustment for group differences based on observed covariates and for group effect differences was utilized. This novel method provided an adequate number of suitable controls for the treated patients with PP. Patients were matched on observed patient's demographic and clinical characteristics at enrollment: age, gender, insurance type, comorbidities, and baseline healthcare resource utilization. Any bias from the external OAT controls was mitigated by a variation on the Stuart and Rubin recommended imputation procedure. Inpatient admissions, and ER visits during the 12-months follow-up were evaluated and compared between PP vs OAT after. The overall odds ratios were estimated and corresponding 95% confidence interval (CI) for the comparison of IP and ER event in PP vs OAT patients.

Results: The final matched cohort included a total of 258 pairs of PP and OAT patients. The two cohorts were comparable based on the following baseline variables: age (P=0.30), gender (P=0.92), Medicaid (P=0.10), Medicare (P=0. 27), private insurance (P= 0.33), hypertension (P=0.68), high cholesterol (P=0.60), heart disease (P=0.12), diabetes (P=0.72), lung disease (P=0.37), overweight (P=0.72), smoking (P=0.85), alcohol use (P=0.65), drug use (P=0.68), assertive community treatment (P=0.68), number of physician visits (P=0.78), inpatient admissions (P=0.35), ED visits (P=0.12), and number of relapse (0.12). Patients treated with PP had significantly lower odds of an IP event (OR= 0.53; 95% CI: 0.41-0.67, $p<0.05$), and an ER event (OR= 0.47; 95% CI: 0.38-0.59, $p<0.05$).

Conclusions: Reduced utilization of hospitalization and emergency room services likely result in economic benefits and may influence long term recovery. Further studies comparing the economic benefit and recovery outcomes among patients on PP versus OAT treatment in the outpatient setting are warranted.

TREATMENT PATTERNS OF SCHIZOPHRENIA PATIENTS TREATED WITH LONG-ACTING INJECTABLES: RISPERIDONE VERSUS PALIPERIDONE PALMITATE

Lead Author: Kruti Joshi, M.P.H.
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SUMMARY:
Background:
Literature is sparse in assessing treatment patterns of second generation LAIs. The objective of this study is to assess the differences in adherence and drug utilization patterns among patients with schizophrenia treated with LAI that requires oral supplementation (Risperidone LAI) versus LAI that does not require oral supplementation (Paliperidone Palmitate).
Methods:
Adults (â‰¥18 years) with schizophrenia(ICD-9 codes: 295.xx) initiating LAI risperidone or paliperidone palmitate (PP) between July 1, 2007 and Dec 31, 2012 (index event) were identified from a US Commercial and Medicare Supplemental Insurance database. All patients had continuous enrollment at least 6 months pre- and 12-months post- index date. Post-index 12-month medication possession ratio (MPR), proportion of days covered (PDC), time-to-discontinuation, days of LAI coverage, days of oral antipsychotic coverage and days of concomitant coverage were compared between both cohorts. Propensity score matching was used to account for baseline differences between both cohorts. Multivariate regression analyses were performed to assess the differences of medication adherence (either MPRâ‰¥80% or PDCâ‰¥80%) while controlling for demographic and clinical characteristics and baseline healthcare resource use.
Results:
After propensity score matching, patient characteristics were well balanced between the risperidone and PP users (N=499 each). Among eligible patients, the mean age was 39 years, 57% were male and 43% were female, the most common comorbidities were substance abuse other than alcohol abuse (43%) and depression (37%). PP users compared to risperidone users had a lower discontinuation rate (36.47% vs.53.31%, $p<0.01$), had more LAI coverage days (234 vs. 132 days, $p<0.01$), a higher rate of no oral antipsychotic coverage (21.64% vs. 9.42%, $p<0.01$), and had higher percentage with no concomitant coverage (30.46% vs. 17.43%, $p<0.01$). Logistic regression analyses showed paliperiodone palmitate users were more likely to be adherent to therapy (MPR: odds ratio [OR] = 12.54, 95% CI: 8.97-17.75; PDC: OR=11.66, 95% CI: 8.00-17.40).
Conclusions:
Results demonstrated that PP users have a better adherence profile, lower discontinuation rate, and reduced polypharmacy use. These results highlight the value of atypical LAI that do not require oral supplementation versus those that do in the treatments for schizophrenia patients.

ASSOCIATION BETWEEN SYMPTOM SEVERITY AND MEDICATION ADHERENCE IN POORLY ADHERENT PATIENTS WITH BIPOLAR DISORDER

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SUMMARY:
Aims: Poor medication adherence is common in individuals with bipolar disorder (BD) and is associated with illness relapse, re-hospitalization and with suicide. Few studies have assessed specific types of symptom expression in well-characterized non-adherent BD samples. Case registry studies can identify poorly adherent BD patients but do not provide data on symptom manifestation, while many clinical trials only include adherent patients. This analysis, derived from baseline data from an ongoing randomized controlled trial (RCT) examined the relationship between BD symptoms and medication adherence in a well-characterized, poorly adherent BD sample.

Methods: Adherence was measured with both the self-reported Tablets Routine Questionnaire (TRQ) and with pill-taking as assessed with automated pill cap, the Medication Event Monitoring System (MEMS). Symptoms were measured with the Hamilton Rating Scale for Depression (HAM-D), the Young Mania Rating Scale (YMRS), and the Brief Psychiatric Rating Scale (BPRS). This analysis used only screening (TRQ) and baseline (TRQ, MEMS, demographic and clinical information) data from the first 101 consecutive RCT enrollments.

Results: Mean age was 46.2 years (SD=9.54), with 75% (N=76) women, 71% (N= 72) African-American, 3% (N=3) Hispanic. The majority (67%, N= 68) had Type I BD and a mean lifetime history of 5.4 (SD=8.71) psychiatric hospitalizations. Mean proportion of missed prescribed BD medications using TRQ at screening was 61.27(SD=26.52) and 46.44 (SD=30.57) at baseline. The mean proportion of missed medication using MEMS at baseline was 66.43 (SD=30.40). Correlation between TRQ and MEMS was 0.47. MADRS , BPRS, and YMRS scores were generally positively correlated with TRQ (worse adherence corresponding to more severe symptoms), but in most instances was only at a trend level ($p>.05$) with the exception of correlation between TRQ and MADRS at baseline, which was both positive ($r=.21$) and significant ($p<.05$).

Conclusion: In this well-characterized sample of poorly adherent patients with BD, the proportion of missed medication varied substantially, from 20% to 100%. Adherence monitoring increased adherence by approximately 15 % within 2 weeks. Use of MEMS identified higher rates of missed medications than TRQ alone. Worse adherence as identified by the TRQ was generally associated with more severe BD symptoms.

EFFICACY AND SAFETY OF LURASIDONE IN OLDER ADULTS WITH BIPOLAR DEPRESSION: ANALYSIS OF TWO DOUBLE-BLIND, PLACEBO-CONTROLLED STUDIES

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SUMMARY:
Introduction: The treatment of bipolar disorder in the elderly has not been well-studied. This secondary analysis evaluated the efficacy and safety of up to 7.5 months of treatment with lurasidone in older adults (age â‰¥55 years) with bipolar depression.
Methods: Patients with bipolar I depression and a Montgomery-Asberg Depression Rating Scale (MADRS) score â‰¥20 were randomized to 6 weeks of double-blind treatment with lurasidone 20-60 mg/d or 80-120 mg/d, or placebo in a monotherapy study; or lurasidone 20-120 mg/d or placebo, combined with either lithium or valproate, in an adjunctive therapy study. In both studies the primary endpoint was LS mean change from baseline to Week 6 in the MADRS total score based on a mixed

model for repeated measures (MMRM) analysis. The criterion for response was â‰¥50% reduction in MADRS score at last observation carried forward (LOCF) endpoint. Patients who completed the 6 week studies were continued in a 6 month, open-label, extension study. Long-term effects on weight and metabolic parameters were evaluated from acute study baseline to 6 month endpoint, based on an observed case analysis.

Results: The proportion of older adults was 83/485 (17.1%) in the monotherapy study, and 53/340 (15.6%) in the adjunctive therapy study. At Week 6, mean change in the MADRS was significantly greater for the lurasidone 20-60 mg (-15.4; P<.01) and 80-120 mg groups (-14.1; P<.02) vs placebo (-7.1). At LOCF-endpoint, responder rates were higher for the lurasidone 20-60 mg (53.8%; P<.01; NNT=3) and 80-120 mg groups (40.0%; P=.054; NNT=4) compared with placebo (14.8%). Adjunctive therapy with lurasidone (vs placebo) was associated with numerically greater but not statistically significant improvement at Week 6 in MADRS total score (-13.9 vs. -11.1; ns). In the adjunctive therapy study, responder rates on lurasidone vs placebo, respectively, were 46.2% vs. 37.0%; ns; NNT=11). In the monotherapy study, discontinuation due to adverse events occurred in 7.7% of patients on lurasidone 20-60 mg, 6.7% on lurasidone 80-120 mg, and 3.7% on placebo. In the adjunctive therapy study, discontinuation due to adverse events occurred in 3.8% of patients on lurasidone, and 7.4% on placebo. At the end of 6 months of open-label treatment with lurasidone,
minimal changes were observed in mean weight (-0.5 kg), or median cholesterol (+1.0 mg/dL), triglycerides (+6.0 mg/dL), and HbA1c (-0.1%).

Conclusions: Lurasidone monotherapy has significantly greater efficacy than placebo in the treatment of older adults with bipolar depression; adjunctive therapy with lurasidone was associated with numerically better response that did not reach statistical significance. Lurasidone was well-tolerated in this older adult population; 6 months of extension study treatment was associated with minimal changes in weight or metabolic parameters.

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