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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-01

Title: A Tale of Two Lithium Toxicities

Presenting Author: Matthew Wilson, PGY3, North Alabama Shoals Hospital

Additional Author(s): Praveen Narahari, MD, Program Director (North Alabama Shoals Hospital); Kayleigh Boll, MS4, Alabama College of Osteopathic Medicine; Pruthvi Pate,l MS4, Alabama College of Osteopathic Medicine

Introduction/Background: Lithium is one of the oldest treatments in psychiatry and is still the mainstay of treatment in bipolar disorder. Mechanism of lithium has yet to be elucidated but it is well understood that lithium has a narrow therapeutic index and is highly associated with overdose and toxicities

Description:
Patient presentation 1

69-year-old female with complaints of progressively worsening lower extremity weakness and mental status changes.

Past medical history of schizoaffective disorder, hypertension, hyperlipidemia, spinal stenosis of the lumbar foramina, and type 2 diabetes mellitus.

Patient presentation 2

40 year old female with one week history of 6-8 watery non bloody bowel movements per day and nausea/vomiting.

Past medical history significant for schizoaffective disorder and polycystic ovarian syndrome

Discussion:
• Lithium toxicity is divided into three distinct categories: acute, acute on chronic, and chronic [7].

• Neurotoxicity associated with lithium more commonly presents in acute on chronic or chronic situations due to lithium's slow distribution into the central nervous system [7].

• Patient 2 had severely high levels of lithium in their blood (5.7) yet demonstrated much milder symptoms (paresthesias and prolonged QT interval) than Patient 1. This is likely an artifact of this being a case of acute on chronic toxicity in which this patient had been chronically treated with lithium but acutely had a Clostridium difficile infection also continued to overdose by ingesting lithium tablets despite the medication being stopped by the medical team.

• Patient 1, this was likely a chronic lithium toxicity case in which the patient had been treated with lithium over a long period of time but did not have an acute event that precipitated symptoms. Instead, over the course of time the patient experienced worsening lower extremity weakness, altered mental status, and diarrhea that could not be explained by an acute infection.

Conclusion: Toxicity can manifest with a wide variety of symptoms that can range from GI upset to several neurological disturbances like confusion and polyneuropathy. Here, we report two differing cases of lithium toxicity in two chronically treated patients with widely different presentations of symptoms.

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ALABAMA PSYCHIATRIC PHYSICIANS ASSOCIATION
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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-02

Title: Are There Risks of Dextroamphetamine-Amphetamine Use in Patients with Cerebral Aneurysms?

Presenting Author: Jenna Alkhatib, MS-3, UAB Heersink School of Medicine

Additional Author(s): Janaki Nimmagadda, MD; Anupama D. Yedla, MD; Clinton Martin, MD: UAB School of Medicine-Psych, Huntsville, AL

Introduction/Background: Dextroamphetamine-amphetamine, a stimulant medication prescribed for attention-deficit/hyperactivity disorder (ADHD), is known to affect cardiovascular function by increasing blood pressure and heart rate.1 Cerebral aneurysms, characterized by abnormal dilations of blood vessels in the brain, pose significant risks if they rupture, including hemorrhagic stroke, brain damage, coma, and even death.2 Concerns arise regarding the safety of this medication in patients with pre-existing vascular conditions, such as cerebral aneurysms, particularly considering the potential for stimulant abuse.

Description: We present a 32-year-old woman with a history of cerebral aneurysm, ADHD, benign essential hypertension, bipolar II disorder, and generalized anxiety disorder with panic attacks. She has been on long-term therapy, having used the medication inconsistently for two years before her aneurysm diagnosis. Recent evaluations focus on assessing the impact of continued mixed salt amphetamine drug use and potential abuse on her aneurysm stability and cardiovascular health.

Discussion and Conclusion: Current literature provides limited direct evidence linking mixed salt amphetamine drug use to increased risk of complications in patients with cerebral aneurysms. A case report by Harrington et al. identified intracerebral hemorrhage associated with oral amphetamine use, noting abnormal cerebral vessels and suggesting mechanisms such as acute blood pressure increases and vascular toxicity.3 A recent report described rapid cerebral aneurysm growth associated with methamphetamine abuse.4 Rumbaugh et al. documented severe cerebrovascular damage in Rhesus monkeys from methamphetamine, including decreased caliber and slow flow in small cerebral arteries, and significant brain damage such as ischemia and infarction.5 Despite these concerns, Zhang et al. found no overall increase in cardiovascular disease with ADHD medication use but recommended further research into risks like cardiac arrest and tachyarrhythmias, particularly in those with pre-existing conditions.6 An editorial emphasized caution when prescribing ADHD medications, particularly for elderly patients, women, and those with cerebrovascular conditions, underscoring the need for careful prescribing practices and enhanced monitoring.7

Although definitive evidence linking mixed salt amphetamine drug abuse to cerebral aneurysm complications is lacking, the potential for stimulant-induced vascular stress and damage necessitates cautious prescribing practices. Further research is essential to clarify the relationship between stimulant abuse and cerebral aneurysm complications and to establish safer prescribing guidelines.

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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-03

Title: A Trauma Informed Classroom: An Educational Intervention to Address Behavioral Needs for Elementary Students in Rural Alabama

Presenting Author: Trinity Houston, MS-4, University of Alabama at Birmingham Heersink School of Medicine

Additional Author(s): Chelsea Miller, MD, University of South Alabama, Department of Psychiatry; Margaret Canter, PhD, University of Alabama at Birmingham, Department of Pediatrics

Introduction/Background: Half of all mental disorders start by 14 years, are often preceded by non-specific psychosocial disturbances, and can evolve into major mental disorders accounting for 45% of the global disease burden across the 0-25 age span. During this critical period, mental health needs are largely unmet, making school-based services crucial for addressing children's emotional and social needs. However, studies on these interventions' impact on behavioral regulation and internalizing and externalizing factors are limited. This study assesses the effectiveness of a trauma-informed classroom (TIC) in rural Alabama for students with behavioral regulation issues, aiming to transition them back to traditional classrooms with individualized education plans (IEPs). This overview focuses on four children receiving the highest level of TIC services.

Description:
Case 1: A 9 y/o male with childhood trauma, exposure to substances in-utero, ADHD, and anxiety who demonstrated physical and verbal aggression at school. Prior to entering the TIC, he was expelled from two schools and was academically and developmentally behind. After 2.5 years in the TIC, he no longer exhibited aggression and was transitioned back to a traditional classroom with academic improvement.

Case 2: A 10 y/o male with childhood trauma, ADHD, anxiety, and impairment in reading who demonstrated physical aggression towards peers. Prior to the TIC he repeated kindergarten. After the TIC, he performed at grade level and reduced behavioral disturbance by 80%.

Case 3: An 11 y/o male with separation anxiety and disruptive mood dysregulation disorder, who struggled with school refusal and behavioral aggression when directed in the classroom. The student's family was non-compliant with TIC recommendations. The student continued to have behavioral and academic problems.

Case 4: An 11 y/o female with ADHD, anxiety, and autism who was physical aggressive with staff and peer and was mostly non-verbal prior to the TIC. After 2 years, the student performed at a 1.5 grade level in reading.

Discussion and Conclusion: The findings suggest that TICs could be an effective school-based strategy for improving behavioral regulation skills, with potential benefits for students' success in a traditional classroom setting. However, further work needs to be done.

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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-04

Title: Diazepam-associated periorbital and facial edema: A rare allergic reaction

Presenting Author: Timothy Blackwell, PGY-2, UAB

Additional Author(s): Brad Burk, PharmD, BCPP, (UAB); Rachel Fargason, MD, (UAB); Badari Birur, MD, (UAB)

Introduction/Background: Benzodiazepines (BZDs) are frequently administered for agitation on inpatient psychiatry units. Allergic reactions to BZDs are rare and typically present as cutaneous symptoms such as urticaria, erythema, and angioedema. A few case reports describe more severe reactions to BZDs, however causality was not definitively established. The frequent and repeated use of benzodiazepines necessitates further characterization of BZD-induced allergic reactions. Here we describe a 34-yr-old male with chronic schizophrenia (SCZ), who most likely developed a rare allergic reaction to oral diazepam (DZM).

Description: A 34-year-old male with chronic SCZ, no significant medical history, and no known drug allergies (NKDA) was admitted to the inpatient psychiatric unit in a florid psychotic state. Oral haloperidol was immediately initiated. On hospital day 2, he received 2mg of oral lorazepam for agitation, which he tolerated well. Despite demonstrating a partial treatment response from up-titrated haloperidol, the patient's agitation increased with new onset homicidal ideation. On hospital day 12, oral DZM 5 mg three times daily was initiated. On day 15, after five doses of oral DZM, the patient developed significant bilateral periorbital and facial edema, without respiratory, hemodynamic or visual compromise. DZM was discontinued and oral diphenhydramine was initiated. The patient's allergic symptoms rapidly improved, and resolved completely by day 18. Oral lorazepam 1mg twice daily was initiated on hospital day 19, which was tolerated well without recurrence of symptoms.

Discussion and Conclusion: The patient's symptoms were consistent with existing reports of BZD-induced angioedema, and the ADR Probability Scale (Naranjo) of this adverse event was 6. The precise mechanism of BZD allergy is unknown, however the lack of cross-reactivity with lorazepam in this case suggests that the allergy is most likely specific to DZM and may be due to its unique metabolism or an excipient in its formulation. Clinicians should remain vigilant for allergic symptoms when prescribing a BZD, even in patients with NKDA. Additionally, it is possible to trial an alternative BZD agent with simpler metabolism, such as lorazepam, when a specific BZD is poorly tolerated.

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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-05

Title: Thyroid Abnormalities Presenting as Psychosis

Presenting Author: Emily Hardwick, MS-3, University of Alabama Heersink School of Medicine

Additional Author(s): Senthil Vel Rajan Rajaram Manoharan, MD; Clinton Martin, MD; and Janaki Nimmagadda, MD

Introduction/Background: Thyroid disease of all etiology can present with a wide range of symptoms affecting all organ systems in the body. Hypothyroidism typically manifests as fatigue, weight gain, dry skin, hair loss, and constipation. Hyperthyroidism classically presents with palpitations, heat intolerance, weight loss, and anxiety. Interestingly, hyper- and hypothyroidism can present with nearly identical psychotic symptoms. The purpose of this case study is to explore two presentations of thyroid disease with psychosis and highlight the importance of a complete workup of patients presenting with such symptoms.

Description: A 59-year-old female with a past medical history of type 2 diabetes, COPD, and cirrhosis presents to the hospital for altered mental status. The patient endorsed feelings of paranoia and religious delusions. Labs were notable for TSH-383, undetectable T3 /T4, and elevated CCK suggesting hypothyroidism. After three days, the patient was alert, oriented, and had better insight allowing for discharge. Unfortuatly, the patient struggled with medication compliacen and returned to the emergency room later with similar symptoms.

A 21-year-old female presenting to the hospital for an involuntary admission by family. She was reportedly throwing knives at family and resisted law enforcement. She could not provide history but denied taking medications for any psychiatric or medical problems. The patient had a blood pressure of 146/60 and a heart rate of 116-bpm. The patient had undetectable TSH and free T4-6.95ng/dL. The patient denied any symptoms. Physical exam noted an enlarged thyroid gland and exopthalmos. Patient was started on olanzapine, methimazole, and propranolol and three days of treatment, the patient improved and was discharged home.

Discussion and Conclusion: For both of our patients with thyroid disease and psychosis, their psychotic symptoms resolved upon treatment of their underlying thyroid disease. Both patients had a family history of thyroid disease and neither patient had a family or personal history of autoimmune diseases. For long-term management of these patients, we plan on maintaining the patients on antipsychotic medication in addition to thyroid medication until thyroid lab values are within normal limits. Overall, these two distinct cases show the importance of medical workup for patients presenting with acute psychosis.

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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-06

Title: Serotonin Withdrawal Syndrome induced by THC vape

Presenting Author: Cara Parker, MS-3, UAB Heersink School of Medicine

Additional Author(s): Janaki Nimmagadda, MD, Department of Psychiatry, University of Alabama at Birmingham – Huntsville Regional Medical Campus, Huntsville, AL

Introduction/Background: Serotonin Withdrawal Syndrome is usually the effect of abrupt cessation of antidepressant therapy (SSRIs, SNRIs), which would decrease neurotransmitter levels in the synaptic cleft. Symptoms of serotonin withdrawal can be summarized by the mnemonic "FINISH" which includes flu-like symptoms, insomnia, nausea, imbalance, sensory disturbances (electric shock and tingling feelings), and hyper-arousal, such as anxiety and agitation. Symptoms can occur within 2-4 days of drug cessation and usually last 1-2 weeks, with some persisting up to a year. Sociodemographic and clinical factors have not been identified for Serotonin withdrawal syndrome. Symptoms of serotonin withdrawal may vary in severity, duration, series, and trajectories. However, in the case that compliance is met with antidepressant medications, could THC withdrawal be a potential cause?

Description: The patient is a 15-year-old male with PMH of GAD, major depression, sleep disturbance, and vaping engagement who has been taking sertraline 75 mg, clonidine 0.1mg, and hydroxyzine 25 mg for several months. Recently he presented to his primary care clinic with complaints of twitching and worsening anxiety that have been occurring for two weeks. After evaluation from PCP, an increase in blood pressure was noted and patient was referred to psychiatry for a potential serotonin syndrome case. Upon further evaluation, we discovered his twitching was actually "electric shock" and "pins and needles" like sensations in his extremities. Along with increased anxiety, he reports difficulty sleeping over these 2 weeks. Patient reports to have been using a THC vape for several months but recently stopped 2-3 weeks ago. Sertraline dose had been increased from 50mg to 75mg three months ago. There had been no other medication changes recently and he reports compliance to all medications.

Discussion and Conclusion: Tetrahydrocannabinol (THC) predominately attaches to cannabinoid receptors (CB1 and CB2) on neurons, activates them and releases neurotransmitters, or inhibits them and decreases reuptake. Although CB1 and CB2 are the most widely acknowledged cannabinoid receptors, several other receptors ranging from G-protein coupled receptors to ion channel and nuclear receptors have been reported to interact with cannabinoids (4). In addition, animal studies have demonstrated that potent cannabinoid receptor agonists, such as THC, may activate the serotonin receptors (5-hydroxytryptamine1A and 5-hydroxytryptamine2A), as well as inhibit serotonin re-uptake. Therefore, THC abuse in high concentrations can mimic serotonin syndrome (2). However, in addition to autonomic and mental status changes, symptoms of Serotonin Syndrome include hyper-reflexia, myoclonus, and hyperthermia, which our patient did not present with. Due to the ability for THC to cause Serotonin Syndrome and our patient's presentation, we have concluded that a withdrawal of THC could potentially cause Serotonin Withdrawal Syndrome. With the increased use of vapes and other substances, additional research is needed in this area to further educate and inform patients as well as providers on the effects of THC toxicity and withdrawal. This information will help prevent recurrent relapse in addition to tolerance to THC.

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ALABAMA PSYCHIATRIC PHYSICIANS ASSOCIATION
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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-07

Title: Sneaky Serotonin Syndrome

Presenting Author: Chandler Davis, MS3, University of Alabama Heersink School of Medicine

Additional Author(s): Clinton Martin, M.D., Janaki Nimmagadda, M.D., Anupama Yedla, M.D.: UABHSOM Huntsville Campus, Department of Psychiatry

Introduction/Background: Serotonin syndrome is an iatrogenic syndrome typically caused by an excessive amount of serotonin at the postsynaptic receptors. This can be due to therapeutic use of a single serotonergic drug or as an interaction between multiple serotonergic medications. Serotonin increasing medications can be a slippery slope because of the medications impact every patient differently. Sometimes a small medication increase can result in onset of the symptoms. It is imperative when dealing with a possible serotonin syndrome presentation to get a detailed history and timeline of symptoms.

Description: We present a 30 y/o female with a history of GAD, nicotine use disorder, and MDD presents to the clinic with concerns for serotonin syndrome. Her Prozac was increased to 80 mg and she was started on Trazodone 100 mg 10 days ago at the same visit due to worsening anxiety and insomnia. Today, patient presents with, N/V, diarrhea, HA, and restlessness that all started 2 days after her medication change and has worsened over time. She presented to her PCP 4 days ago with no autonomic dysfunction. The physician reached out to her psychiatrist. At the visit with psychiatry, she had a BP of 142/82. Her BP last visit was 118/80. Patient was very fatigued. She reported a decrease in appetite and SOB. Her physical exam was notable for rigidity and hyperreflexia.

A tough clinical decision was made to allow this patient to go home with cyproheptadine 4mg BID. The patient was counseled to drink plenty of water and agreed to go to the emergency room or call 911 if there is acute worsening of symptoms. She made a full recovery within a few days.

Discussion and Conclusion:
Serotonin Syndrome Diagnostic Criteria:
Autonomic dysfunction: Diaphoresis, tachycardia, HTN, Mydriasis
Neuromuscular excitability: Hyperreflexia, myoclonus, rigidity
Altered Mental Status: Delirium, psychomotor agitation/restlessness, coma

Treatment
STOP THE OFFENDING MEDICATION
Cyproheptadine
Hospitalization to monitor depending on severity
This case exemplifies the importance for a clinical suspicion of serotonin syndrome needed for all patients taking serotonergic medications. Early recognition and treatment is crucial to prevent significant morbidity and mortality.

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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-08

Title: Lewy Body Dementia

Presenting Author: Chandler Davis, MS3, University of Alabama Heersink School of Medicine

Additional Author(s): Hope Hodson, PGY-1; Clinton Martin, M.D., Janaki Nimmagadda, M.D., and Anupama Yedla, M.D.: UABHSOM Huntsville Campus Department of Psychiatry

Introduction/Background: Dementia with Lewy Bodies is the second most common dementia behind Alzheimer's disease. Lewy Body Dementia is an umbrella term that encompasses DLB and Parkinson's disease dementia. DLB's prevalence is 7.5% of all dementia cases. However, in a retrospective study looking at patient's with dementia via autopsy after death, 25% of the brains from the people enrolled had Lewy body features. Median survival of a patient with DLB is 4.7 years from diagnosis

Description: A 71-year-old male with a history of Bipolar Disorder Type I with rapid cycling, parkinsonism presents with worsening visual and auditory hallucinations and insomnia.

History of Present Illness: He experienced intermittent visual and auditory hallucinations. He describes REM sleep disturbances and hallucinations that begin around 9-10 pm and continue intermittently throughout the night. The hallucinations are vivid and distressing; for example, the patient recently believed he was being kidnapped by pirates and screamed in fear. He has been averaging only 2 hours of sleep per night. He naps frequently during the day accumulating several hours of sleep.

Discussion and Conclusion:
Diagnostic Criteria:
Parkinsonism's: Can be a resting tremor, rigidity, bradykinesia, or postural instability (i.e. shuffling gait, decreased arm swing, stooped posture).
It's difficult to distinguish DLB from PDD because the average timeline for PDD is typically 2 years after diagnosis. While with DLB, dementia can precede the onset of Parkinsonisms by one year.
Pathology
DLB starts with alpha synuclein in the cortex, while PDD originates in the basal ganglia.
DLB and PDD alike are both accumulation of alpha-synuclein. Currently there is no treatment available

Key distinguishing factors:
LBD vs. Alzheimer's: Hallucinations had 83% PPV for LBD over AD
LBD vs PDD
Within 1 year of PD diagnosis = LBD, >1 year = PDD
Both have same pathology and treated the same clinically

Clinical Learning Point:
This patient's story of diagnosis was very discouraging from a student's perspective. The patient reported that physician wrote the diagnosis on a piece of paper and handed it to the patient. The job of a doctor is not just being a good diagnostician. We MUST show empathy and compassion in the good news and, especially, the bad.

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ALABAMA PSYCHIATRIC PHYSICIANS ASSOCIATION
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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-09

Title: The Neuropsychiatric Manifestations of Pai Syndrome

Presenting Author: Lauren Usrey, MS4, UAB

Additional Author(s): Chandler Davis, MS3, University of Alabama at Birmingham Heersink School of Medicine; Janaki Nimmagadda, MD, University of Alabama at Birmingham Heersink School of Medicine, Department of Psychiatry

Introduction/Background: Pai syndrome is a rare condition characterized by a triad of developmental anomalies: a complete median cleft lip, cutaneous polyps, and midline lipomas surrounding the corpus callosum.1 Believed to result from disruptions in embryonic fusion process, Pai syndrome is among the most under-studied disorders, with only 67 cases reported globally.2 Pericallosal lipomas, though rare, have been linked to neurological issues, including epilepsy and psychiatric manifestations, due to their impact on the corpus callosum. Severe cognitive impairment has been documented in two cases, highlighting the potential for significant neuropsychiatric outcomes despite the syndrome's rarity.2 This report explores the neuropsychiatric manifestations associated with Pai syndrome to enhance understanding of its clinical spectrum and impact on affected individuals.

Description: The patient is a 10-year-old male with ADHD, Autism Spectrum Disorder (ASD), and Pai Syndrome, presenting with severe impulsivity, skin-picking, and irritability despite treatment with clonidine and Quillivant XR. He experiences daily "explosive" episodes triggered by minor events. His Pai Syndrome manifests through distinctive features, including a submucosal cleft palate, a fatty tumor on the corpus callosum, facial skin tags, heart murmur, sacral dimple, hypercholesterolemia, nasal cyst, and a missing right eyelid. His developmental history includes delays due to maternal exposure to synthetic marijuana, alcohol, tobacco, Vicodin, and physical trauma during the first trimester. He has required speech and occupational therapy since early childhood. Psychological testing reveals a Full-Scale IQ of 70 and a specific learning disorder. Previous medications, including Concerta and risperidone, were either ineffective or caused adverse effects. Current treatment involves discontinuing Quillivant XR due to worsening symptoms, starting methylphenidate immediate release, and adjusting clonidine dosing.

Discussion and Conclusion: This case underscores Pai Syndrome's multifaceted nature and its considerable impact on neuropsychiatric functioning. The patient's irritability and impulsivity seem compounded by both physical and developmental challenges. Prenatal substance exposures and stressors, particularly during midline structure formation, may have contributed to his condition.3 A comprehensive treatment strategy with tailored medication adjustments and close follow-up will be crucial in managing his behavioral needs. There is need for further research to elucidate the relationship between Pai Syndrome's physical and neuropsychiatric features so that more effective treatments are developed.

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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-10

Title: Treatment Resistant Depression in Spinocerebellar Ataxia

Presenting Author: Bethany Brock, MS3, University of Alabama at Birmingham Heersink School of Medicine

Additional Author(s): Bethany Brock, BS,1; Janaki Nimmagadda, MD,2; Anupama Yedla, MD,2; Clinton Martin, MD,2;
1-UAB Heersink School of Medicine;
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Introduction/Background: Spinocerebellar ataxia (SCA) is an autosomal dominant inherited progressive neurodegenerative disease with symptoms including cerebellar ataxia, pyramidal signs, and eye movement disorders.1 It has been linked to psychiatric disorders and symptoms such as depression, anxiety, and issues with impulse control.2 The association with depression in particular has been well studied, with many studies estimating the prevalence of depression in SCA being between 40-60%.3 One study found that of the 300 SCA patients enrolled, 52% had suicidal ideation.1 Other neurodegenerative disorders are known to cause depression through degeneration of brain circuits that are involved in depression, such as Huntington's disease and Parkinson's disease.1 It is unknown whether SCA's association with depression is caused by a similar mechanism, but it is theorized that the cerebellar degeneration could cause depression through degeneration of connections with the frontal lobe as well as other areas of the brain.1 While there is plentiful research on the association with depression, there is a paucity of information on treatment considerations, particularly with treatment resistant depression.

Description: The patient is a 64-year-old male who presents for continuous depression and anxiety for the past 4 years. Symptoms began 4 years prior with a loss of motor skills, tremors, and increasing psychiatric symptoms including depression, anxiety, and persistent suicidal ideation. He has had a 60-pound weight loss in the previous year due to lack of appetite and increased sleeping, and he has consistently had daily suicidal ideation. The patient has no history of psychiatric disorders prior to age 60. Prior to symptom onset he was successful in his career. In the prior 4 years he has had 6 inpatient admissions for depression and suicidal ideation including a two-week admission for inpatient Electroconvulsive Therapy (ECT) which was unsuccessful. He has previously trialed ECT, transcranial magnetic stimulation therapy, bupropion, risperidone, duloxetine, clonazepam, olanzapine, quetiapine, and cariprazine for depression and anxiety unsuccessfully. When he first presented to our clinic, he was on lamotrigine, fluoxetine, and lorazepam, with only lorazepam alleviating anxiety symptoms and seemingly no effect of the other medications on depression symptoms. He was then started on aripiprazole and on follow up showed no improvement.

Discussion and Conclusion: There is limited information on the treatment of depression in SCA. Some studies have mentioned the use of selective serotonin reuptake inhibitors (SSRIs) and cognitive behavioral therapy, but the use of these in these studies is low with less than 35% of patients utilizing these in some studies leading to the possibility of depression being undertreated in SCA patients.3 When considering treatment for treatment resistant depression in SCA patients, there are additional concerns as drug classes such as atypical antipsychotics have the potential of worsening motor symptoms through interactions with the nigrostriatal dopamine pathway. Some case studies have documented treatment of psychotic features in SCA patients with antipsychotics successfully, but there have been no studies on the safety of these medications in these patients.3 While unsuccessful in this patient, transcranial magnetic

stimulation could potentially prove useful as a noninvasive treatment option as it is known to have less systemic side effects than medication.4 Overall, future research needs to be conducted on the safety of these treatments in SCA patients.

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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-11

Title: Paraneoplastic Anti-NMDA Receptor Encephalitis Causing Psychosis

Presenting Author: Megan Brunsvold, MS-3, UAB Heersink School of Medicine

Additional Author(s): Angela Nakashian, MD; Janaki Nimmagadda, MD; Anupama Yelda, MD; and Clinton Martin, MD

Introduction:
Anti-N-methyl-D-aspartate receptor (NMDAR) encephalitis is caused by autoantibodies against a glutamate subunit of the NMDA receptor[4]. These antibodies can be produced in the presence or absence of an associated neoplasm, infection, or other inciting factor[2]. It affects primarily children and young adults, with a predominance of cases seen in females. Up to 58% of these affected young female patients have an associated ovarian teratoma[1]. A recent study found that anti-NMDAR encephalitis accounted for 1% of all young adult admissions to an intensive care unit[1]. The purpose of this case study is to discuss a presentation of psychosis due to paraneoplastic anti-NMDA receptor encephalitis, and to recognize its presentation in the pediatric patient to promote prompt treatment.

Case Presentation:
A 15-year-old female with no past medical history was brought to the hospital with four-day history of increasingly erratic behavior, now presenting with altered mental status and worsening aggression. Labs were significant for leukocytosis [14.47] with a predominance of neutrophils. A lumbar puncture revealed increased white blood cell count [44] with normal cerebrospinal fluid (CSF) protein and glucose levels. CSF meningitis panel and cultures were negative. After symptoms persisted for six days, a chest/abdomen/pelvis CT was performed, which revealed a left ovarian teratoma. The patient underwent urgent left salpingo-oophorectomy. A confirmatory autoimmune encephalitis panel returned strongly positive for anti-NMDAR antibodies. Following prompt treatment, the patient was transferred to a stepdown unit for extensive inpatient rehabilitation 5 weeks after her initial presentation.

Discussion:
The accepted diagnostic criteria for probable anti-NMDAR encephalitis consists of the following: rapid onset of neuropsychiatric symptoms, an abnormal EEG or CSF pleocytosis, and reasonable exclusion of other disorders. In the case of a positive CSF anti-NMDAR antibody titer, a diagnosis of definite anti-NMDAR encephalitis can be made if the above conditions are also met[3]. It is common to see clinical improvement after removal of a neoplasm and immunotherapy in cases of anti-NMDAR encephalitis with associated paraneoplastic syndrome, which was seen in this case presentation[5]. This case shows the importance of recognizing the clinical syndrome and appropriate workup for autoimmune encephalitis, and the prompt initiation of treatment to ensure the best clinical outcomes.

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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-12

Title: Unspoken Pain: Navigating Self-Injurious Behavior in a Non-Verbal Patient with MELAS

Presenting Author: Sajan Sheth, PGY-1, University of South Alabama

Additional Author(s): Kelly Blackshire, MS-3, USA School of Medicine; Andrew Stokes, MS-4, USA School of Medicine; and Robert Detrinis, M.D., Altapointe – Psychiatry.

Introduction/Background: Self-injurious behavior (SIB) involves deliberate self-harm without suicidal intent and is common in individuals with severe to profound intellectual disability (ID). SIB often manifests as repetitive hitting, biting or scratching. It becomes especially challenging to treat when patients cannot communicate. This case report discusses the treatment of a 29-year-old non-verbal female with profound ID associated with mitochondrial encephalopathy, lactic acidosis, stroke-like episodes (MELAS), who presented with escalating SIB to an inpatient psychiatric hospital in Alabama.

Description: Upon admission, a detailed review of the patient's history through past records and consultation with her mother and group home staff, prompted a reevaluation of her treatment plan. Polypharmacy, sensory overstimulation, mood dysphoria and chronic pain were suspected to be contributing to her presentation. Her home medication regimen included: Benztropine 0.5 mg BID, Tranxene 3.75 mg BID, Depakote 250 mg BID, Haldol 5 mg BID, Zyprexa 10 mg TID, Zoloft 100 mg QD, Zonisamide 100 mg BID, and Trazodone 150 mg QHS. The patient's medications were gradually tapered. Her Tranxene, Trazodone, Benztropine, Zoloft, and Depakote were eventually discontinued. Zyprexa was reduced to 10 mg BID. Zonisamide was maintained for seizure control and chronic pain management. Haldol was dosed at 2.5mg PRN for breakthrough SIB. Gabapentin and Cymbalta were introduced to further address her presumed dysphoric mood and chronic pain. Environmental modifications included education of behavioral staffing, involving family to participate in assessment and care through videoconferencing, and reducing exposure to overstimulation. Over the hospital course these interventions contributed to a marked reduction in non-distractible SIB and the need for PRN medications. Follow-up with the patient's mother confirmed sustained improvement in her daughter's condition post-discharge.

Discussion and Conclusion: Treating SIB in a non-verbal patient with intellectual disability requires a multidisciplinary, patient-centered approach. This approach enables careful management of behavioral disorders with minimal medication, as individuals with ID are highly sensitive to the side effects of psychotropic medications. This case highlights how targeted treatment, including optimizing medication and incorporating environmental and behavioral strategies, can improve outcomes. Although knowledge gaps remain in managing MELAS, this case offers an example of effectively addressing its associated behavioral symptoms.

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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-13

Title: False Positive Oxycodone Results in Patients Receiving Opioid Antagonists

Presenting Author: Miranda Crowell, PGY-3, USA Frederick P. Whiddon College of Medicine, Department of Psychiatry

Additional Author(s): Amanda Davis, DO, USA Frederick P. Whiddon College of Medicine, Department of Psychiatry; Shyla Hossain, MD, USA Frederick P. Whiddon College of Medicine, Department of Psychiatry; Bradley Brooks, DO, USA Frederick P. Whiddon College of Medicine, Department of Psychiatry, AltaPointe Health

Introduction/Background: Urine drug testing plays a significant role in healthcare, including monitoring adherence to certain medications and detecting illicit drug use. Enzyme-mediated immunoassays (EIAs) are commonly employed as UDS tests for cost-effectiveness, feasibility, and sensitivity [1]. However, EIAs have limitations, such as decreased likelihood of binding to synthetic drugs, cross-reactivity with certain medications, and potential false positives [1]. Since false positives can negatively impact individuals' lives and overall treatment, confirmatory testing, such as chromatographic methods, warrants consideration. We present two cases involving false positives for oxycodone in patients treated with Naltrexone and Olanzapine/Samidorphan (Lybalvi®).

Description: The first case involves a 25-year-old female in addiction treatment for problematic alcohol and cannabis use. Initial UDS was positive for THC. One month after starting Naltrexone 50 mg daily, her UDS was positive for THC and oxycodone. She denied intentional oxycodone use and was concerned about continuing Naltrexone, given the results. Next, a 52-year-old female with polysubstance use and bipolar disorder sought treatment while trying to regain custody of her children. Medications included Olanzapine/Samidorphan 15 mg/10 mg QHS, Duloxetine 30 mg QD, and Oxcarbazepine 600 mg BID. Despite reported abstinence, her UDS was positive for oxycodone, and social services were concerned about this positive result. Four weeks after discontinuing Olanzapine/Samidorphan due to weight gain, her UDS was negative. In both cases, initial EIA urine screens were presumptively positive for oxycodone, but LC-MS/MS confirmatory tests were negative for Noroxycodone, Oxycodone, and Oxymorphone. False positives were suspected due to Naltrexone and Samidorphan, respectively.

Discussion and Conclusion: Naltrexone and Samidorphan act as mu-opioid receptor antagonists, and their similar chemical structures likely led to cross-reactivity with the oxycodone immunoassay [2,3]. While Naltrexone has previously been implicated as the causal agent of false positive results for oxycodone on immunoassay, this is the first case in literature to our knowledge that discusses Samidorphan in combination with Olanzapine [4,5]. The prescribing information for Olanzapine/Samidorphan (Lybalvi®) was recently updated to warn of possible false positives for opioids and recommends alternative testing methods for confirmation [2]. These cases highlight the importance of urine drug testing literacy and the need for continued education on the topic to reduce stigma and enhance patient care.

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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-14

Title: Vagus Nerve Stimulation Therapy: An Unforeseen Option for Treatment Resistant Depression

Presenting Author: Garrett Hawkins, MS-3, UAB Heersink School of Medicine

Additional Author(s): Garrett Hawkins, BS; Mason Berry, BS; and Clinton Martin, MD

Introduction/Background: Vagus nerve stimulation (VNS) therapy was originally developed for the management of epilepsy, and is now FDA approved for use in treatment resistant depression (TRD). It is hypothesized that VNS imposes serotonergic effects on the brain. In this case report we discuss a patient participating in a double-blind randomized controlled trial with VNS therapy.

Description: This patient is a 56-year-old female with a history of Bipolar 1 disorder, Generalized Anxiety Disorder (GAD), and Post Traumatic Stress Disorder (PTSD) that presents for evaluation of persistent depressive episodes with infrequent mania. She underwent Transcranial magnetic stimulation (TMS), Electroconvulsive therapy (ECT), and multiple medications regimens with minimal effect. The patient had VNS device implantation in June of 2023. At 6 months post-implantation, she reported no improvement. At 8 months post-implantation, the patient reported improvement in the severity and frequency of depressive episodes. At 11 months post-implantation, she reported a decrease in frequency of depressive episodes and increased interest in her usual hobbies.

Discussion and Conclusion: Depression is becoming increasingly prevalent within the U.S. In 2021, it was estimated that 30.9% of cases will be treatment resistant. TRD is often classified as failure of improvement after two separate antidepressant trials. Treatment for TRD is complex and can involve medication augmentation, psychotherapy, ECT, TMS, deep brain stimulation (DBS), and VNS. ECT is commonly used in TRD patients, but long-term use is associated with memory complications and continuous treatment to maintain improvement. Studies analyzing patient outcomes in those treated with VNS for epilepsy found reductions in depression ratings. Studies have found that VNS therapy shows improvement in long-term depressive symptoms. Although this patient is participating in a double-blind RCT, her improvement is encouraging, if she is in the experimental group. With her previous alternative treatments, VNS therapy could be a favorable option for her to minimize both depressive symptoms as well as repeated procedures.

This case highlights the need for providers to remain cognizant of alternative treatment options for TRD. Specifically, VNS therapy shows promising data and should continue to be studied and considered in the treatment of TRD.

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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-15

Title: Case Analysis: Comorbidities Confounding the Diagnosis of Autism Spectrum Disorder

Presenting Author: Mohammad Waqas, MS-3, University of South Alabama College of Medicine

Additional Author(s): Olivia Grace Brookins, MS-3, USA Whiddon College of Medicine; Caroline Whatley Howell, MS-3, USA Whiddon College of Medicine; Taylor Ousley, MD, USA Whiddon College of Medicine Faculty

Introduction/Background: Autism Spectrum Disorder (ASD) is a complex neurodevelopmental condition characterized by deficits in social communication and interaction, alongside restricted, repetitive patterns of behavior, interests, or activities.1 However, schizophrenia and other psychotic disorders, particularly when accompanied by substance abuse, can obscure the core symptoms of ASD, leading to delayed or missed diagnosis.2,3

Patients with schizophrenia often present with symptoms that mimic some social deficits seen in ASD.4 This interaction can be further complicated by substance use disorders, which may exacerbate psychiatric symptoms and hinder assessment.5

Description: We present the case of a 37-year-old female with a history of sexual abuse and a family history of Fragile-X Syndrome. She was admitted to the inpatient facility with persecutory delusions, disorganized behavior, and comorbid substance use, leading to a diagnosis of Other Specified Schizophrenia Spectrum Disorder. However, throughout her stay, the patient exhibited signs of ASD, including poor eye contact, lack of facial expression, abnormal social approach, abnormal posture, phrase repetition, and difficulties maintaining and understanding social relationships.1 These suggest an underlying ASD that, while not diagnosed, may have been masked by schizophrenia and substance use.3,4,5

Discussion and Conclusion: ASD is a complex condition with broad symptom presentation, often making it challenging to diagnose in the presence of comorbidities.2,3,4,5 In our case, the primary diagnosis of Other Specified Schizophrenia combined with history of substance abuse presented barriers to identifying possible ASD due to overlapping symptoms. Conversely, ASD-like symptoms contributed to an atypical presentation of psychosis, thus obscuring the overall clinical picture and preventing specific diagnosis.

This case underscores the importance of a careful approach to assessing complex psychiatric presentations. Clinicians should remain vigilant of the possibility of underlying ASD, as early recognition can enable targeted interventions, potentially improving long-term outcomes for these patients.1,3,4

The significant overlap of genetic mechanisms between ASD and schizophrenia provides a promising explanation of comorbidity.6 Moreover, the strong genetic disposition of ASD enables the application of GWAS findings to clinical practice. Ex ante diagnostic metrics principally derived from family history (similar to established methods like Alzheimer's-disease-by-proxy scores) could provide early evidence of ASD in cases where clinical diagnosis is unavailable and/or difficult to make.7

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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-16

Title: Navigating Anorexia Nervosa in an 11-Year-Old Male: A Case Study

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Introduction/Background: Anorexia nervosa (AN) is a severe eating disorder characterized by self-starvation and an intense fear of gaining weight, leading to significant weight loss and malnutrition.1 It is predominantly observed in adolescent females, with a one-year prevalence of 0.16% for females and 0.09% for males in the United States.2 The disorder typically manifests during adolescence, presenting with weight loss, distorted body image, and an obsessive focus on weight and shape. AN is classified into two subtypes: the restricting type, where weight loss is achieved through dieting, fasting, or excessive exercise, and the binge-eating/purging type, where the individual eats large amounts of food in a short time followed by vomiting or using laxatives or diuretics.1

Description: An 11-year-old Latino male was sent from his pediatrician's office to be admitted to the children's hospital due to concerns for malnutrition and bradycardia. The pediatrician found that in the 3 months since the patient was last seen his weight decreased from 100lbs to 73lbs. The admitting team determined that the patient had been engaging in a pattern of restrictive eating and frequent exercise. Psychiatry was consulted and made a diagnosis of AN but could not rule out mood disorders. The patient was started on mirtazapine to target mood symptoms and stimulate appetite. When his medical condition improved, he was discharged to follow up with an outpatient therapist, psychiatrist, and pediatrician through an integrated care model.

Discussion and Conclusion: This case describes a presentation of AN in a patient of unusual age, gender, and cultural background.3,4 Despite its atypical presentation, this case highlights the difficulty in treating AN and the importance of a multidisciplinary approach to treatment. There remains debate on pharmacologic treatment of AN so flexibility and responsiveness from the care team are key for successful treatment.5 We discuss pharmacologic, as well as psychodynamic and cultural considerations for those treating this complex disorder in clinical practice.

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APPA 2024 Fall Student/Resident Abstracts

Case Study Abstract: 24-2-17

Title: The Argument for Education: A Case Report of MDD Following Screening for Terminal Illness.

Presenting Author: C. Mason Berry, MS-3, University of Alabama at Birmingham Heersink School of Medicine

Additional Author(s): Garrett Hawkins, MS-3, (UABHSOM); Tarak Vasavada, M.D., (UABHSOM Huntsville Campus Psychiatry Department)

Introduction/Background: The Beta Amyloid 42/40 Serum Ratio is a predictive test for beta-amyloid plaques in the brain for patients with MCI or Dementia. A positive test is associated with a positive amyloid PET and aids in the diagnosis of Alzheimer's dementia. We present a patient who presented to the Behavior Health Unit with MDD and suicidal ideations who recently received a positive Beta-Amyloid 42/40 Serum Ratio test.

Description: This patient is a 73-year-old female with a past medical history of glaucoma, OSA, and insomnia who presented to the ED due to suicidal ideations. The patient recently saw a neurologist who ordered a Beta Amyloid 42/40 ratio test and received a positive result. After receiving this news, she has had increased anxiety and fear of developing dementia, along with the suspicion that it was due to her chronic use of a sleeping aid medication. On admission, a SLUMS screening was performed that resulted in a 22/30, indicating mild cognitive impairment.

Discussion and Conclusion: Depression is becoming increasingly more common, with an estimated lifetime prevalence of 12%, and studies have shown an upward trend in recent years. Receiving a life-altering medical diagnosis can impact patients both emotionally and physically, and providers must remain aware of the possible detriment that can result when providing education on diagnostic results. This patient was educated on the positivity of a Beta Amyloid 42/40 ratio test, indicating that she is at increased risk of developing Alzheimer's dementia. Given her age, she is at risk of developing memory deficits associated with normal aging, but difficulty is encountered when delineating between normal aging and dementia. Studies have shown that patients receiving diagnostic results for specific medical conditions (cancer, chronic lung disease, heart disease, arthritis) predispose them to concurrent depression as a result. There is a scarcity in the literature that describes the impact of receiving positive predictive tests indicative of terminal illnesses. This leads us to ask, as screening for terminal illnesses becomes more and more prevalent, how do we, as physicians, help guide and educate our patients through testing, results, and life after diagnosis?

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APPA 2024 Fall Student/Resident Abstracts

Research Abstract: 24-2-18

Title: Exploring the Interplay of Sleep and Nicotine Vaping in Adolescents: An Evidence- Based Narrative Review

Presenting Author: Ahmed (Kareem) Alhassan, PGY-3, University of Alabama at Birmigham (UAB)

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Introduction/Background: Although combustible tobacco cigarettes (CC) use has decreased amongst adolescents, the rapid emergence of popular vaping products (e-cigs, e-cigars, e-hookahs, JUUL) has transformed the landscape of adolescent substance use in the US, becoming a critical public health issue. Nicotine is the most commonly vaped substance, enticing users through appealing packaging and flavors. Though the long-term sequelae of vaping nicotine are, at present, poorly understood, the short-term effects include tachycardia, coughing, and wheezing. While inhaling nicotine from CC is known to induce sleep disruption, the implications from vaping nicotine are less clear, especially amongst adolescents. Here, we describe an evidence-based narrative review exploring the interplay of sleep and nicotine vaping in adolescents.

Methods: PubMed search from 2006 to 2024 using the keywords “Nicotine sleep adolescents,” “vaping sleep adolescents,” and “e-cigarette sleep adolescents” yielded 159 articles. Activating the filters “Humans,” “English,” and “Age-Birth-18 years” reduced number to 124 articles. Independent screening of abstracts by three authors (SB, BGB, and AR) for cross-sectional studies that described sleep disturbances yielded 9 articles for inclusion. The outcome measures of sleep duration and insufficient sleep were assessed categorically in self-reported hours. Sleep latency and daytime drowsiness were assessed using the Pittsburgh Sleep Quality Index (PSQI). The data from various cross-sectional surveys were pooled together.

Results: A combined sample size of 106,628 adolescents (aged 12-18 years, males=females) was analyzed. E-cigarettes were the most common vaping devices used, and e-cig users and dual (e-cigs + CC) users had increased odds of reporting <7-8 hours of sleep on school nights when compared to non- users. E-cigs are more likely to have insufficient sleep than those who only used CC. In adolescent males, dual use was associated with increased sleep latency, as measured by the PSQI.

Discussion and Conclusion: Survey studies indicate vaping nicotine and dual product users may be associated with sleep disturbances in adolescents. Further investigation through longitudinal studies are needed to determine factors such as the causal relationship, dose-response and product-specific effects. Clinicians should educate children, adolescents, and parents about potential detrimental effects of the interplay between vaping and sleep during healthcare visits or school seminars.

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3) Sleep deprivation and adolescent susceptibility to vaping in the United States. Kristen D Holtz, Andrew A Simkus, Eric C Twombly, Morgan L Fleming, Nicole I Wanty

4) Assessing the potential impact of age and inhalant use on sleep in adolescents. Clare Kamini Malhotra, Deepti Gunge, Ira Advani, Shreyes Boddu, Sedtavut Nilaad, Laura E Crotty Alexander

5) Risk Factors and Medical Symptoms Associated With Electronic Vapor Product Use Among Adolescents and Young Adults. Sarah E Benyo, Tyler J Bruinsma, Elizabeth Drda, Jodi Brady-Olympia, Steven D Hicks, Sue Boehmer, Robert P Olympia

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APPA 2024 Fall Student/Resident Abstracts

Research Abstract: 24-2-19

Title: Racial Disparities in Perinatal Insomnia, and Treatment Engagement and Outcomes: A Literature Review

Presenting Author: Dalya Kanani, OMS3, Lake Erie College of Osteopathic Medicine

Additional Author(s): Marina Girgis OMS4, Lake Erie College of Osteopathic Medicine

Introduction/Background: Historically, African American (AA) women have had little to no access to health care and treatment, especially in obstetrics and gynecology, and this inequity is rooted in slavery. Slave owners forced black women to procreate with limited access to health care. As a result of this accumulation of disadvantages across generations, AA women face a public health crisis. Black women are disproportionally burdened with higher rates of maternal mortality, anemia, cardiovascular disease, and diabetes. The Center for Disease Control and Prevention (CDC) reported that AA women were three times more likely to die from pregnancy-related complications compared to White women.

Methods: An electronic literature search was performed of Medline, Directory of Open Access Journals, Google Scholar, and PubMed from 1989 to 2024. This literature review includes results from double-blind, placebo-controlled studies, population-based studies and review articles.

Results: A key finding in an epidemiology study found that black women during pregnancy exhibited a heightened risk of inflammation associated with poor sleep quality. In this observational study, 79 black women followed the PSQI subscale to measure sleep quality, and it was found that black women experienced 10.2 times greater likelihood of preterm birth and poor sleep quality, and heightened circulating interleukin (IL)-8 levels compared to white women. Poor sleep quality, shorter sleep duration, and greater sleep latency were associated with elevated serum IL-8 in this study. This study suggests that poor sleep quality is associated with shorter gestation and a greater risk of preterm births, and the mediating role of this relationship is increased inflammation associated with shortened sleep duration.

Discussion and Conclusion: Digital Cognitive Behavioral Therapy (CBT) has an added benefit that is more accessible and convenient for expecting mothers. Studies also show that it is an effective intervention for improving insomnia symptoms during pregnancy. Recent studies have addressed the disparity of black women disproportionately affected with prenatal insomnia. CBT has been effective in treating insomnia and prenatal insomnia, but racial minorities have exhibited poor outlines from prenatal care compared to white patients, and this trend persists in black women with prenatal insomnia.

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