

Permian Basin Research Day 2022

Texas Tech University Health Sciences Center at the Permian Basin

Abstracts Submitted for Consideration

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Clinical Research

1. Pharmacological Interventions of Atypical Antipsychotics Induced Weight Gain in the Pediatric Population: A Systematic Review of Current Evidence

Background: To systematically review studies evaluating pharmacological treatment intervention of the atypical antipsychotic-induced weight gain in the pediatric population. Summarize the current evidence of the pharmacological treatment.

Materials and Methods: According to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, we searched the various databases until Mar 30th, 2021 for relevant clinical studies. Medical Subject Heading (MeSH) terms or keywords were used, "Body Weight," "Weight Gain," "Weight Loss," "Body Weight Maintenance," "Pediatric Obesity" in "Pediatrics," "Adolescent," "Child" in context of "Antipsychotic Agents" and "Drug Therapy," "Therapeutics," "Treatment Outcome," "Early Medical Intervention." We used the PICO algorithm for our search.

Results: Metformin is the most studied medication for antipsychotic-induced weight gain in children. Three studies have shown that adding Metformin to the antipsychotics can significantly reduce the body weight and body mass index with mild transient side effects. Other adjunct medications like topiramate, amantadine, betahistine, or melatonin vary greatly in mitigating weight with various side effects.

Conclusion: Avoiding the use of antipsychotic in children is preferred to avoid their long term metabolic side effects. Adding an adjuvant medication to the antipsychotic could prevent or mitigate their negative metabolic effect on the body weight and body mass index. Metformin has the most evidence, topiramate, betahistine, amantadine, and melatonin is possible alternatives to address AIWG in the pediatric patient without changing their antipsychotic medication. Other viable options show some benefits but need further clinical studies to establish efficacy and safety.

2. The Safety and Efficacy of Ketamine NMDA Receptor Blocker as a Therapeutic Intervention for PTSD: Review of a Randomized Clinical Trial

Background: Posttraumatic stress disorder (PTSD) has long-lasting debilitating symptoms. PTSD causes a significant burden on healthcare workers and victims' families. The US Food Drug Administration (FDA) has approved only two Serotonin Selective Reuptake Inhibitors (SSRI), SSRI has 50-60% response rate and up to 30% remission rate with a high relapse. Ketamine is an NMDA Receptor blocker, has rapid effective onset for PTSD symptoms.

Materials and Methods: We retrieved randomized clinical trials on Database until October/2021. We used the following keywords: "posttraumatic stress disorder. "AND "Ketamine." AND "Esketamine" AND "NMDA antagonist" AND "treatment, pharmacological intervention, management. ". We used Medical Subject Heading [Mesh] Term for "ketamine" and "Esketamine" And "Receptors, N-Methyl-D-Aspartate" and "Stress Disorders, Post-Traumatic" and "Disease management.".

Results: All qualified five randomized clinical studies showed rapid and clear benefits of Ketamine infusion for PTSD symptoms resistant to conventional medications. The clinical improvements were evident in three of the four PTSD symptom categories, intrusions, avoidance, and negative alterations in cognitions and mood. In addition, Ketamine administration was safe well-tolerated, with transient dissociation as the main side effect reported.

Conclusion: Ketamine showed fast, safe, highly effective pharmaceutical intervention for chronic PTSD symptoms

3. Is a Glucocorticoid Antagonist a Potential Treatment Alternative for Antipsychotic-Induced Weight Gain?

Background: Antipsychotic-induced weight gain management is still controversial. There are no current guidelines for the treatment. Hypothalamic-pituitary-adrenal axis destabilization with high glucocorticoid is one of the main risk factors. The objective of this study is to evaluate the efficacy and safety of mifepristone, an example of the glucocorticoid receptor blocker.

Materials and Methods: We searched Databases up to March 2021, medical subject heading "Mifepristone," "Receptors, Glucocorticoid," "Weight gain," "Overweight," "Obesity," "Body Weight Change," "Antipsychotics Agents," "Glucocorticoid Receptor Blocker," "Glucocorticoid Receptor antagonist."

Results: The results of the olanzapine clinical trial showed Mean increase in weight from baseline to day 14 was greater in the olanzapine with the placebo group (3.2 ± 0.9 kg) than the olanzapine with mifepristone group (2.0 ± 1.2 kg) and the mifepristone with placebo (2.0 ± 0.7 kg).

Conclusion: Mifepristone as Glucocorticoid antagonists shows potential in the management of antipsychotic induced weight gain.

4. Suicide Risk among Adolescents with ADHD: an Overview from the National Inpatient Sample Dataset

Background: Suicide is highly prevalent among adolescent population. Studies have shown an association between ADHD and suicide; however it has not been studied from inpatient hospitalization data. Hence, we decided to perform this study by comparing suicide risk among patients with and without ADHD.

Materials and Methods: For this study data from the National Inpatient Sample (NIS) dataset which is a part of Healthcare Cost and Utilization Project (HCUP) was utilized. Discharge records from Jan 2016 to Dec 2018 were reviewed and included for the study. From the discharge records, adolescents (age 12-17) patients' data were extracted. Based on the diagnosis of ADHD from the discharge records populations were stratified into two groups. Study group was composed of patients with ADHD, and control group was composed of patients without ADHD. To balance the baseline characteristics between the groups we performed 1:1 propensity score matching for the study and control group. The primary outcome was suicidal ideation/attempt (SI/SA) between the groups. The secondary outcome was comparison of baseline characteristics between two groups.

Results: A total of 36,004 unweighted data were included in the study group, and compared with control (age-gender-race-median household income matched). Mean age was 14.5 years, with 42% female, 64.5% white, and 29.4% in lower percentile of median household income. Prevalence of SI was 25.1% in patients with ADHD vs. 10.3% among patients without ADHD ($p < 0.001$). Prevalence of SA was also very high (8.0% vs. 3.9%) among patient with ADHD compared to non-ADHD group. Composite outcome of SI/SA was almost 2.3 times in the study group (31.6% vs. 13.4%, $p < 0.001$) than control. After controlling for covariates (age, gender, race, major depression, median household income, adjustment disorders, borderline personality disorders, and composite of substance use disorders/alcohol abuse-dependence), ADHD was a strong predictor of suicidal ideation/attempt with an odds of association with SI/SA were 2.18 times compared to control (OR: 2.18, 95% Confidence interval (CI): 1.96-2.43, $p < 0.001$).

Conclusion: It is important to screen for suicidality in patient with ADHD given the high prevalence of suicidality. It may also be significant to evaluate for concerns of ADHD in adolescent patients with suicidal behaviors. Further studies may be warranted to better understand how psychopharmacological or psychotherapeutic intervention may be effective in mitigating the risk of suicidal behaviors in patients affected with ADHD.

5. Suicidality among Transgender Patients Admitted to the Inpatient Hospital: A Propensity Matched Analysis

Background: Suicide is one of the top cause of death in the United States. Recent studies have shown an increased association of suicide attempt among lesbians, gays, and bisexual's., transgender, and queer population(LGBTQ). Hence, we decided to evaluate the suicidal behavior and risk among LGBTQ people from the large inpatient database.

Materials and Methods: Data were obtained from National Inpatient Sample (NIS) (year 2016-2018). using ICD-10 code among study cohort of adolescent patients with transsexualism diagnosis. We compared these patients with adolescents without transsexualism. To reduce the baseline characteristics imbalance between the groups we performed 1:2 nearest neighbor propensity score matching with caliper width of 0.0001. In the propensity score matching, age, year of hospitalization, mood disorder, anxiety disorder, year of study data, and region of hospital were included. Groups were compared for suicidality and baseline characteristics.

Results: A total of 2635 patients were included in transgender and 5270 patients in non-transgender group (Mean age 15.2 years, mood disorders: 91%, anxiety disorders: 65%). Prevalence of suicidal ideation (52.4% vs. 39.2%, $p<0.001$) was significantly more in the transgender group compared to control. There was no difference in the prevalence of suicidal attempt (19.2% vs 17.3%, $p:0.33$) between the groups. After adjusting for psychiatric comorbidities, age, sex, and gender odds ratio for composite of outcome of suicidal ideation/attempt was 1.99(95% CI 1.58-2.12, $p<0.001$).

Conclusion: Prevalence of suicidal ideation/attempt is strikingly high in transgender group compared to general population. There should be more suicide awareness campaign for this particular patient group.

6. Association of Fluoxetine with Insomnia among Children and Adolescents with Depression

Background: Sleep deprivation in adolescents can have significant clinical as well as psychological impact. Multiple trials have demonstrated effectiveness of fluoxetine in the treatment of depression. However, fluoxetine can potentially worsen insomnia leading to multiple adverse outcomes. This meta-analysis's primary objective was to do a pooled estimate on the risk of insomnia because of fluoxetine among adolescents with MDD.

Materials and Methods: Two independent reviewers evaluated all the published randomized clinical trials (RCTs) of fluoxetine among children/adolescents. From studies data was collected on the number of patients with insomnia and the total number of patients. The pooled effect was estimated in fixed effect model and presented with Relative risks (RR) and 95% confidence interval (CI).

Results: We found 4 RCTs of fluoxetine, where insomnia data was available. A total of 737 patients were included in the final analysis with 367 and 370 patients in fluoxetine and placebo groups respectively (age range: 7-17). The insomnia rate in patients undergoing treatment with fluoxetine was significantly high compared to the placebo (RR:2.91, 95% CI 1.22-6.95, p-value: 0.02). In the sub-analysis for age 12-17, association was stronger (RR:3.95, 95% CI: 1.27-12.28, p:0.02).

Conclusion: Fluoxetine shows statistically significant association with insomnia among patient with MDD. Sleep is an integral part of cognitive development in children and adolescents. Therefore, when using standard treatment for depression, it becomes essential to ensure they do not cause insomnia which can prove to be a deterrent in treatment of depression. Further large randomized clinical trials are needed.

7. Efficacy of the Antiviral Therapy of Remdesivir in Infectious Disease- 2019 (COVID19)

Background: Remdesivir is an antiviral agent that was approved by the Food and Drug Administration for the treatment of hospitalized COVID-19 patients. Current literature is still limited and conflicting in terms of remdesivir benefits for COVID-19 patients. In the current study, we are testing the hypothesis whether treatment of COVID-19 patients with remdesivir has any significant effects on the time to recovery at Medical Center Hospital (MCH).

Materials and Methods: 372 COVID-19-positive patients who were admitted to MCH during the period of 12/09/2020 to 04/12/2021 were included in this retrospective cohort study. 115 and 256 patients were assigned to the treatment and control group, respectively. The primary endpoint was time to recovery, while secondary endpoints included intensive care unit (ICU) length of stay (LOS), worsening of the patient clinical status, and in-hospital mortality (patient expired or discharged to hospice).

Results: The hospital and ICU LOS were longer in the remdesivir group (13.3 and 5 days, respectively) compared to the control group (7.3 and 1.8 days, respectively). However, there was no difference in the rate of in-hospital mortality between the two groups (11.3% and 12.1% in the remdesivir and control groups, respectively).

Conclusion: Our preliminary results suggest that there are no benefits for using remdesivir in hospitalized COVID-19 patients in terms of hospital and ICU LOS as well as in-hospital mortality. However, further in-depth data analysis is required to take into consideration other factors that could have affected the final outcomes between both groups e.g. baseline severity of COVID, comorbidities, and the co-administration of other COVID-19 medications.

8. Frailty in Orthopedics: A Literature Review

Background: As the population in the United States shifts towards older individuals, molding healthcare towards elderly patients' needs will be an increasingly important issue. Over the past few years, studies on frailty have been analyzed for patients undergoing surgical procedures. Frailty is defined as reduced physiological reserve that leads to increased probability of adverse health outcomes and death. There are two well established methods of analyzing frailty, the Fried Frailty Criteria, and the Canadian Study of Health & Aging Frailty Index (CSHA-FI). Both have been applied in various studies. Because elderly patients are at higher risk of complications after surgery, frailty is becoming an important tool in assessing patient care. Our review investigated the ability of frailty models to predict complications and mortality in a variety of orthopedic injuries.

Materials and Methods: PubMed and Google Scholar were used to identify papers involving application of the frailty index to various traumatic orthopedic injuries. Variables of interest included sample size, frailty index modality, type of orthopedic injury, incidence of postoperative complications, incidence of mortality, and statistical significance of the model.

Results: Almost all studies found significant associations with frailty and postoperative complications and mortality. This theme was observed in lower extremity trauma, upper extremity trauma, and several arthroplasty surgeries.

Conclusion: Considering the nature of surgical management of orthopedic injuries, it is worthwhile to investigate frailty and its ability to predict adverse outcomes and mortality. Potential associations could help clinicians in gauging the surgical risk and managing the course of care for patients being treated.

9. Safety and Efficacy of Vancomycin Utilization Prior to and Post Implementation of a New Dosing Protocol

Background: Vancomycin demonstrates the greatest activity when the 24-hour area under the curve (AUC) divided by the minimum inhibitory concentration (MIC) is between 400-600. The 2009 guidelines recommended monitoring trough concentrations with a goal of 15 mcg/mL to 20 mcg/mL, however the updated 2020 guidelines recommend calculating AUC/MIC ratios instead. The change in monitoring was established to a more accurate monitoring parameter to decrease adverse events. The purpose of this study is to identify whether the change in monitoring parameters from trough only monitoring to AUC/MIC leads to significantly different outcomes regarding safety and efficacy.

Materials and Methods: This retrospective, observational study examined patients between January 1, 2021, to June 30, 2021 using Vigilanz clinical decision support data base, in addition to electronic medical records. The primary outcome to be assessed was the incidence of acute kidney injury (AKI) 48 hours after administration of vancomycin and up until 72 hours after discontinuation.

Results: There were 100 patients in each study arm (n=200 total). The primary outcome occurred in 19/100 (19%) in the trough monitoring group and 7/100 (7%) in the AUC monitoring group. The risk reduction is 12% (95% CI 2.83%-21.17%). The average lowest trough value among patients with an AKI was 17.31 mcg/mL in the trough group and 12.92 mcg/mL in the AUC group.

Conclusion: Based on the study, there is a statistically significant reduction in the number of AKI's when changing to AUC/MIC monitoring. To increase external validity a larger study population may be used to account for additional confounding factors.

10. The Rate of Hypoglycemic Events in High-dose Insulin Euglycemia Therapy for Calcium Channel Blocker and Beta Blocker Overdose

Background: High-dose insulin euglycemic therapy is a potent additional treatment for Calcium Channel Blocker (CCB) and Beta Blocker (BB) toxicity. At Medical Center Hospital, there is no current protocol in place for high-dose insulin infusions to ensure this therapy is administered with safety and efficacy. This study will investigate the incidences of hypoglycemic that are associated with high dose insulin infusions and create a protocol to follow to prevent medication errors.

Materials and Methods: This is single center, retrospective cohort study investigating the safety and efficacy in CCB and BB overdose patients receiving high-dose insulin therapy from April 1, 2017, through December 31, 2021, at Medical Center Hospital. The primary outcome was the incidence of hypoglycemic events, defined as serum glucose of <70 mg/dL, during the use of high-dose insulin therapy.

Results: There were 2 patients that were included in this study. The demographics were similar between the patients; however, one was a female, and the other was a male. Both ingested CCB in a large quantity. For the primary outcome, 1 (50%) had hypoglycemic events during infusion and this patient had 2 events. One (50%) had hypokalemia and this patient had 2 events. The length of time on the insulin drip was 5 days for both patients. There were no deaths during admission.

Conclusion: High-dose insulin infusion for CCB/BB overdoses is an effective management for hemodynamic instability, however, it can cause hypoglycemia and hypokalemia. As the adverse events are serious, monitoring during and after infusion is as important as titrating the infusion for clinical stability.

11. Is There Any Association Between Urban Location and Schizophrenia? Insight from the US National Inpatient Dataset

Background: Studies have shown the relationship between urban area and schizophrenia. However, it has never been evaluated from the large dataset studies. Hence, we evaluated if there is an association between schizophrenia and urban/rural area.

Materials and Methods: From the NIS dataset (year 2016-2018) young patients (age 18-34) study sample was obtained. Based on the NIS dataset variable (HOSP_LOCTEACH) urban/rural area variable was created. Schizophrenia variable was created using ICD-10 code. Association between rural/urban area and schizophrenia was assessed using logistic regression analysis adjusted for age, gender, race, depression, bipolar disorder, substance use disorder, and median household income. All the analysis was performed using complex survey analysis techniques. Results were presented using odds ratio (OR) and 95% confidence interval (CI).

Results: A total of 1378979 patients were included in the rural area (mean age:26.3, female:83.0%), and 15052515 patients were included in the urban area (mean age:27.1, female 77.6%). More patients were of white race in the rural area (83.0% vs. 77.6%, $p<0.001$). Prevalence of schizophrenia was 3.7% in the urban area, and 2.7% in the rural area (OR:1.38, 95% CI: 1.26-1.51). In the adjusted analysis association was still significant (OR:1.21, 95% CI: 1.11-1.30). When stratified by gender association was stronger for female (OR: 1.38, 95% CI: 1.26-1.50) compared to male (OR:1.13, 95% 1.05-1.23).

Conclusion: There is a significant association between urban area and schizophrenia. Further large scale clinical trials are warranted to study the factors responsible for schizophrenia in the urban area.

12. Millennials, Generation Z, and ADHD; Insight from the Nationwide Inpatient Sample

Background: Studies have shown that Generation Z reports more psychological disorders compared to Millennials. Our objective was to compare the prevalence of ADHD and conduct disorders for generation Z compared to millennials in a large dataset of hospitalized patients.

Materials and Methods: For this study, the National Inpatient sample data (2008-2014) was used (age :12-17 years). Patients born before 1996 were considered Millennials and those born after 1996 were considered Generation Z. Groups were compared for ADHD and other conduct disorders. Groups were compared using Rao-Scott adjusted chi-square test. Association between generation and ADHD was assessed using logistic regression analysis.

Results: Among Millennials, 2662319 patient records were included, and 1854887 patient records were included for generation z. More patients were females among the Millennial population (62.8% vs. 55.0%). There was no difference in the racial distribution between the groups ($p:0.32$). The prevalence of ADHD was significantly more in Generation Z than Millennials (10.6% vs. 6.5%). When ‘ADHD’ with other conduct disorders’ was compared, the prevalence was still high among Generation Z in comparison to Millennials (13.7% vs. 9.3%). After adjusting for age, gender, race, MDD, bipolar disorder, odds of association between generation Z and ‘ADHD’ were 36% more (OR:1.36, 95% CI:1.26-1.46, $p<0.001$) compared to Millennials. The odds of association between generation Z and ‘ADHD and other conduct disorders’ was 1.25 (95% CI:1.14-1.37, $p<0.001$)

Conclusion: ADHD and conduct disorders are found to be more common in Generation Z than among Millennials. Further studies are needed to evaluate the factors responsible for this.

13. Clinical Outcomes Associated with Pharmacist-Driven MRSA Nasal PCR Screening Protocol in Respiratory Infections

Background: Methicillin-resistant *Staphylococcus aureus* (MRSA) is commonly covered empirically in patients with pneumonia. Clinicians are often reluctant to de-escalate therapy due to unfinalized respiratory cultures, which may lead to extended exposure to antibiotics. Therefore, MRSA polymerase chain reaction (PCR) screening, with its rapid detection of MRSA and high negative predictive value in patients with respiratory infections, can help guide providers to de-escalate anti-MRSA antibiotic therapy faster and minimize associated adverse drug events.

Objective: To determine the impact of a pharmacist-driven MRSA PCR screening protocol on total hospital length of stay and duration of anti-MRSA therapy for patients with suspected respiratory infections.

Materials and Methods: A single center, retrospective study from January 2021 through January 2022 evaluated adult patients who received anti-MRSA therapy for suspected respiratory infections before and after the implementation of a pharmacist-driven MRSA PCR screening protocol. The primary outcome was total hospital length of stay. Secondary outcomes include duration of anti-MRSA therapy, the impact of pharmacist-driven protocol and safety profile.

Results: This study included 293 patients (n = 117 pre-protocol, n = 176 post-protocol). The mean of total hospital length of stay was similar between both groups (9.89 days vs 9.83 days). However, patients in the post-protocol group received a reduction in median hours of anti-MRSA therapy (97 vs 90 hours).

Conclusion: Although there is no difference in the hospital length of stay, the implementation of a pharmacist-driven MRSA PCR screening protocol effectively reduces unnecessary anti-MRSA antibiotic exposure in patients with suspected respiratory infections. Larger sample size will increase reliability for this study.

14. A Novel Approach to Simplify the Reporting and Interpretation of Clinical Laboratory Results

Background: The variety of reference intervals impacts the clinical interpretation, communication and patient understanding of the results. The purpose of this study was to evaluate the utility of a standardized (S) scale for reporting of lab results compared to traditional (T) scales. The hypothesis was that a S-scale would enhance the ability to interpret all quantitative laboratory results by individuals.

Materials and Methods: In this single-center, open, cross-sectional, observational study, a survey was posted on an institution's webpage. After a video-tutorial, participants proceeded with the interpretation of lab values. Participants were asked to choose the spectrum they thought each value represented. The first 5 questions provided values using the T-scale followed by 5 questions from the S-scale. The primary outcome was the participants' ability to accurately classify the values. Secondary outcomes included correlation between the demographics and the responses accuracy.

Results: A total of 268 subjects participated in the study. There was a significant improvement in the mean responses with the S-scale. The improvement in the values interpretation persisted in all the groups. All groups had increased sense of utility with the S-scale.

Conclusion: The S scale could abate the need of memorizing the normal ranges and units for each value. Additionally, S-scale could enhance the understanding of the results. The S-scale by itself or in tandem with the T-scale could enhance the interpretation accuracy. It also provides a unique tool to improve communication between physicians and patients. The differences in the size of the subgroups raised concern of selection bias.

15. Underdiagnosis of Obesity/Overweight in Academic Outpatient Setting

Background: Body mass index is a reliable predictor of obesity and overweight, but is under acknowledged by physicians. Our Objective is to determine the extent to which the diagnosis of obesity and overweight is made in our clinic.

Materials and Methods: A cross sectional analysis of involving 305 patients with BMI > 25 who visited TTUHSC Permian Basin Internal Medicine Clinic from October 1st 2020 to October 31st 2021. We collected body mass index, diagnosis of obesity and the diagnosis of overweight in the problem list of the office visit note documented by physicians. We evaluated if patients with BMI > 30 had a documented diagnosis of obesity and if patients with BMI from 25 to 30 had a documented diagnosis of overweight.

Results: Among 305 patients, 228 patients were qualified for the diagnosis of Obesity due to their BMI > 30. However only 44.2% (101) patients had a diagnosis of Obesity in the problem list. 77 patients were qualified for the diagnosis of Overweight due to their BMI > 25 but less than 30. However, only 2.59% (3) of the patients had a diagnosis of overweight in their problem list. Majority of patients with obesity and overweight are not diagnosed in our outpatient clinic setting.

Conclusion: There is a great need to educate the physicians for early screening and identification of obesity and overweight. If we are not making the diagnosis in the problem list, then we are not acknowledging the disease process and are not subsequently treating this epidemic.

16. Mood Disorders and It's Association with Thyroid Related Abnormalities

Background: The occurrence of mood symptoms as a manifestation of thyroid disorders and the resolution of these symptoms with treatment of the underlying medical condition have been documented throughout the medical literature. The purpose of this study is to compare the prevalence of overall thyroid disorders with known depression and other mood disorders.

Materials and Methods: We used the National inpatient sample (NIS) for 2015 October - 2017 December period and identified hospitalizations among young adults (18-44 years). Young inpatient encounters with mood disorders and hyperthyroidism/hypothyroidism were identified using previously validated ICD-10 diagnostic codes. The primary outcomes were the prevalence and odds of hospital encounters for thyroid disorders (adjusted for sociodemographic characteristics) including hyperthyroidism/hypothyroidism in young adults with mood disorders.

Results: A total of 18610492 patients were euthyroid, and 837810 had thyroid disorders (768315 diagnosed with hypothyroidism, and 69495 were diagnosed with hyperthyroidism). Bipolar I, and II disorders were slightly more among hypothyroid population as well (1.9% and 0.5% respectively), compared to euthyroid (1.2% and 0.3%) or hyperthyroid (1.3% and 0.3%). In the multivariate analysis, significant association between hypothyroidism and bipolar I disorder (Odds ratio (OR) 1.61 (95% CI: 1.54-1.68)), bipolar II disorder (OR:1.54, 95% CI: 1.42-1.68) and depression (OR:1.48, 95% CI:1.46-1.51) noted.

Conclusion: Psychiatric disorder including bipolar illness and depression may be seen with comorbid thyroid disorder. The prevalence of bipolar disorder and depression was noted to higher in hypothyroid patient population. Further research may be warranted to explore how strategies to manage thyroid abnormalities may also be linked with improving comorbid mood symptoms.

17. COVID19 Impact in Ector County, Pre-Vaccination Era: A Look at Demographics and Outcomes

Background: A novel virus from the Betacoronavirus family was identified in 2019, named SARS-CoV-2, and found to cause a disease, Coronavirus Disease-19 (COVID-19), of widely varying presentation and varying severity from asymptomatic infection to fatal. [1] By the end of 2021, over 824,000 fatal COVID-19 infections were reported in the U.S. by the CDC. [1] The goal of this study was to assess the demographic distribution of hospitalized patients secondary to COVID 19 infection at Medical Center Hospital (MCH), Ector County, during the pre-vaccination era between March 2020 to January 2021.

Materials and Methods: Retrospective chart review of all patients during this period, Age 18 and above with confirmed positive for COVID 19 infection were included, and excluded pregnant patients. Demographics, length of stay, comorbidities, and admission laboratory results, data was collected. Statistical analysis done using MS Excel.

Results: Total 858 people were admitted for COVID 19 infection. COVID 19 was confirmed among 471 patients with a mortality rate of 16% (75). Among the fatal cases, the majority of patients were predominantly males, Hispanics, >60 years old, insured, and morbidly obese with BMI > 35. 52% were hypoxic upon admission. Smokers represented 18% of fatal cases and > 77% had comorbid conditions with COPD, hypertension and diabetes, comprised of 13%, 61% and 40% prevalence, respectively.

Conclusion: COVID-19 had a high mortality rate in Ector County and the presence of comorbidities likely played a role in this outcome. Studies are in progress to quantify mortality and morbidity post vaccination era.

18. A Narrative Review of Randomized Control Trials Studying Clinical Efficacy of SKY Breathing, A Yogic Breathing Technique in the Treatment of Psychiatric Disorders

Background: SKY (Sudarshan Kriya Yoga) breathing is a unique method for balancing the autonomic nervous system and influencing psychological and stress-related disorders. There is sufficient evidence to consider Sudarshan Kriya Yoga to be a beneficial, low-risk, low-cost adjunct to the treatment of stress, anxiety, post-traumatic stress disorder (PTSD), depression, stress-related medical illnesses, substance abuse, and rehabilitation of criminal offenders.

Materials and Methods: We identified studies in PubMed, EMBASE, CINAHL, PsycINFO, AMED, Web of Science and Google Scholar using keywords including ('SKY', or 'Sudarshan Kriya Yoga') and 'Randomized Clinical Trial' or their variations with no restrictions on the year of publication. The search was conducted in February 2022.

Results: In depressed patients, Regular practice of SKY resulted in statistically significant improvement of the HDRS-17 and Beck Depression Inventory scores as compared to the non intervention group. Similar results were observed in the reduction of PTSD scores in patients with PTSD, improvement in psychological thriving, reduction of cortisol levels and BDI score in participants with Alcohol Dependence, improvement in the Quality of Life (QOL) scores, improvement in the ECT and EEG findings, improvement in the GAD and HAM-A scores in Generalized Anxiety Disorder and Improvement in the Insomnia and Excessive Daytime Sleepiness and measured by the Epworth Sleepiness Scale (ESS).

Conclusion: SKY breathing was found clinically effective in improving many bio-psychosocial conditions, including depression, anxiety, stress, PTSD, insomnia and addiction. In sum, compared to the control group and controlling for baseline levels in the outcomes and for multiple comparisons, the SKY group benefited multiple outcomes (depression, anxiety, stress, health, positive affect, mindfulness, sleep pattern, symptoms of PTSD and social connectedness) Further research is indicated to define the relative place for SKY in the clinical management of depressive disorders.

19. Impact of Prior Use of Renin-Angiotensin-Aldosterone System Inhibitors on the Clinical Outcomes in Pre-Vaccinated Hospitalized COVID19 Patients

Background: The renin-aldosterone-angiotensin system (RAAS) is thought to be involved in the pathogenesis of coronavirus disease 2019 (COVID-19) caused by SARS-CoV-2. However, the impact of ACE inhibitors (ACEIs) and angiotensin II receptor blockers (ARBs) on COVID-19 disease progression still remains unclear.

Materials and Methods: A retrospective chart review of those hospitalized for COVID-19 between March 2020 to January 2021 at Medical Center Hospital in Odessa and treated with remdesivir, convalescent plasma, and dexamethasone was conducted to investigate the impact of prior use of ACEI/ARB on COVID-19 outcome in terms of clinical progress (3-treatment failure, 2-improvement, 1-return to baseline), ICU transfer rate, intubation rate, and mortality. The study evaluated 320 patients, 243 of which did not have any prior use of ACEI/ARB. Student t-test, covariance analysis, and p-value were calculated to analyze the correlation and statistical significance.

Results: In comparison those without prior use of ACEIs/ARBs, the patients with prior use of ACEI/ARB were noted to have better clinical outcome (1.73 vs. 1.87; p-value 0.16), a lower probability of getting intubated (0.154 vs. 0.169; p-value 0.02), and a lower rate of in-hospital death (0.132 vs. 0.182; p-value 0.22). The latter group also had a comparable ICU transfer rate of 0.325 to 0.329 of those without prior ACEI/ARB use (p-value 0.47).

Conclusion: While these observations may not carry much statistical significance, better outcomes in those with prior ACEI/ARB is still noteworthy and supports the RAAS' involvement in the pathogenesis of COVID-19.

Case Report/Case Series

1. Cameron Lesions: A Rare Cause of Hematemesis

Background: Cameron lesions are linear erosions or ulcers on the mucosal folds at the diaphragmatic impression commonly seen in patients with large hiatal hernia. Mentioned lesions are a rare cause of upper gastrointestinal (GI) bleeding and were first described by Cameron and Higgins in 1986. Hiatal hernia prevalence rates range from 0.8 - 2.9 in patients undergoing endoscopy, and Cameron lesions are seen in 5% of these cases. Here we present a patient with Cameron lesion and recurrent hematemesis.

Case Description: A 63-year-old male with history of diabetes, hypertension, gastric ulcers presented with epigastric pain and hematemesis. The patient reported multiple vomiting episodes (>4) that included streaks of bright red blood for the past 2 days. He admitted similar episodes in the past, however, denied melena, hematochezia, alcohol, or NSAID use. Patient takes pantoprazole and reports compliance. Hemogram noted hemoglobin 12.7g/dL, hematocrit 83.2%, MCV 81.8fL. CT abdomen showed moderate hiatal hernia. Upper endoscopy evidenced Cameron lesion, and grade II esophagitis. Patient's pantoprazole dose was increased to twice daily and discharged home.

Conclusion: Cameron lesions have been identified as an etiology for occult upper GI bleeding, occasionally leading to iron deficiency anemia. Overt upper GI bleed usually presents as melena or hematemesis. Common causes of hematemesis include gastric/duodenal ulcers, erosive esophagitis/gastritis, varices, portal hypertensive gastropathy, angiodysplasias, Mallory-Weiss syndrome. Our case introduces an uncommon cause of GI bleed that self-resolved after endoscopy. Therefore, high suspicion must be present for these cases. Treatment includes band ligation, or fundoplication in refractory cases.

2. Asenapine as Augmenter for Treatment Resistant Schizophrenia: A Case Report

Background: Schizophrenia is a chronic severe debilitating mental disorder. Antipsychotic (AP) medication is the cornerstone in the treatment. Treatment-resistant schizophrenia (TRS) refers to the proportion of patients that still have significant symptoms despite effective treatment. Brain glutamate signaling and/or dopamine pathway dysregulation is a potential cause of TRS. Dopamine supersensitivity psychosis (DSP) could be seen up to 50% in TRS and present a clinical challenge to the physician. AP with a wide spectrum and can block 5-HT_{2A} receptors as Asenapine could help in treating DSP/TRS.

Case Description: Case report of 30 years old female with treatment-resistant schizophrenia was admitted involuntarily to high acuity psychiatric hospital for management of psychotic breakdown, disorganized speech, and behavior. The patient showed long none response to several high potency AP combinations and was labeled as TRS. Patient significantly respond to augmentation with small dose sublingual Asenapine, manifested by a 50-point reduction of PANSS score two weeks after the treatment.

Conclusion: Small dose Asenapine augmentation was rapidly safe and effective to curb psychotic and behavioral symptoms for TRS/DSP which failed to respond to several AP.

3. A Rare Case of Lofgren Syndrome in a Hispanic Patient: A Case Report

Background: Lofgren syndrome is a form of sarcoidosis that presents with a triad of acute arthritis, bilateral hilar adenopathy, and erythema nodosum. It occurs more frequently among African Americans and Caucasians. We present a case report with pathognomonic symptoms of Lofgren syndrome.

Case Presentation: A 34-year-old Hispanic male presented to the emergency department complaining of fever and bilateral flank pain for two weeks with BUN 65 and creatinine 5.4. CT abdomen and pelvis showed bilateral stones in the renal collecting system. KUB showed bilateral nephrolithiasis with UPJ calculi. The patient was admitted to the inpatient ward and a ureteral stent was placed. Two days after the procedure, he presented with dyspnea. Chest radiograph showed pleural effusion. Repeat CT showed prominent bilateral mediastinal and abdominal lymphadenopathy, massive splenomegaly, and mild hepatomegaly. Liver function tests showed transaminitis and pancytopenia. Lymph node biopsy showed a singular non-necrotizing granuloma and bone marrow biopsy was negative for malignancy. Liver core needle biopsy showed granulomatous hepatitis, negative for malignancy. Patient also presented with fever, calcinosis cutis, and erythema nodosum. Subsequently, patient was treated with Filgrastim, antibiotics, and corticosteroids. Patient was diagnosed with Lofgren syndrome based on the presenting symptomology and is currently being followed up in the outpatient setting.

Conclusion: This case report shows a classical presentation of a patient with Lofgren syndrome. This highlights the importance of recognizing this diagnosis in a patient who may not fit the usual demographic population that this disease presents in

4. COVID19 Vaccination Obscuring Inflammatory Breast Cancer in an Elderly Woman

Background: Inflammatory breast cancer (IBC) contributes to 2-4% of all breast cancers with a 7% mortality in the United States of America. IBC remains a difficult condition to treat due to delays in diagnosis and presence of metastasis at the time of diagnosis. Clinical suspicion should remain high in patients presenting with breast erythema, warmth, and skin changes and in patients with darker skin tones. IBC requires the clinical presentation mentioned as well as a histological correlation. Mammography has a low sensitivity for detecting IBC, while breast MRI breast has the highest sensitivity for detection.

Case Description: Inflammatory breast cancer (IBC) continues to be a difficult condition to manage as distant metastases are usually present by the time of clinical symptoms.^{2,3} However, advances in chemotherapy have contributed to better survivability in patients with IBC.² In our report, we discuss a case of inflammatory breast cancer in an elderly patient presenting with breast inflammation after a recent COVID-19 vaccination and a previous mammogram exhibiting Bi-RADS 3, probably benign.

Conclusion: Inflammatory breast cancer is a rapidly progressing condition often masked by other clinical scenarios; like a recent vaccination in our patient. IBC should remain in the differential diagnosis for any skin changes to the breast in order to detect IBC for early intervention.

5. A “Splitting” Neck-ache: Exercise-induced Bilateral Vertebral Artery Dissection

Background: Cervical artery (vertebral and carotid artery) dissections are an increasingly recognized cause of stroke in the young. They are commonly unilateral, presenting with headache and neurological deficits. The most common cause is neck trauma with an underlying arteriopathy.

Case Description: A 25 year old male with no co-morbidities presented with twelve hours of right-sided headache, nausea, vomiting, distal right arm weakness with numbness, and ataxia. He endorsed strenuous exercise in the gym prior to the onset of symptoms. MRI showed bilateral cerebellar infarcts and CT angiography of the neck showed bilateral extra-cranial vertebral artery dissections. He was started on a continuous intravenous heparin infusion and transferred to a higher center with neurointerventionalist availability. No surgical interventions were performed. Following discharge on dual anti-platelet therapy, he was seen in the clinic with improvement in headache and right arm numbness, and resolution of right arm weakness.

Conclusion: The acute/subacute development of headache, nausea/vomiting, and/or vertigo with neurological deficits should raise suspicion for cervical and cerebral vessel dissections. This is especially true in young to middle-aged individuals with minimal to no risk factors. Triggers include chiropractic manipulation, exercise, motor vehicle accidents, and roller-coaster rides, with a significant proportion remaining unidentified. Our patient’s lifestyle likely led to repeated microtraumas in the vertebral artery vasculature and may have predisposed to an arterial dissection. Reperfusion therapy with thrombolysis, mechanical thrombectomy, and emergency stenting can be performed for eligible patients. However, there is no consensus on superiority of immediate anti-platelet vs. anticoagulant therapy for extra-cranial dissections.

6. “A Good Catch.” Purple Glove Syndrome, Recognizing a Rare Complication of Intravenous Phenytoin

Background: Purple glove syndrome (PGS) is a rare adverse drug reaction associated with intravenous (IV) Phenytoin administration. PGS is poorly understood and only 82 cases were reported between 1984-2015. Symptoms include dark purple-bluish discoloration around the site of IV Phenytoin infusion, peripheral edema, and pain. On rare occasions, PGS may progress to compartment syndrome or necrosis. According to data, the incidence of PGS after parenteral Phenytoin is 1.7%-5.9%.

Case Description: 61-year-old patient with medical history of hypertension, and coronary artery disease, presented to the hospital with altered mental status due to status epilepticus. The patient received multiple doses of Lorazepam and was started on Levetiracetam. Seizures were poorly controlled despite treatment, and Valproate was added. The patient still developed generalized seizures, Levetiracetam dose was increased, with addition of Phenytoin. The day after, bluish discoloration and swelling on bilateral upper distal extremities were noticed. Due to high suspicion of PGS, IV Phenytoin was discontinued and switched to Lacosamide. PGS was managed with upper limbs elevation and heat application. The patient’s skin discoloration and edema gradually improved, confirming a case of PGS.

Conclusion: Resolution of mild cases of PGS varied from days to weeks, and severe cases may require emergency surgical intervention. Our case introduces a mild case of PSG which resolved after discontinuation of phenytoin due to a high level of suspicion by the medical team. To conclude, clinicians should be aware of this uncommon complication of IV Phenytoin and should discontinue the drug promptly if the syndrome is suspected to avoid further aggravation.

7. Successful Treatment of Dysphonia Due to Prolonged Intubation in COVID19 Pneumonia Patient with Neuromuscular Electrical Stimulation Therapy: A Case Report

Background: Prolonged intubation may lead to prolonged dysphonia and dysphagia due to mechanical damage to the vocal cords exacerbated by edema. Many studies and reports focus on prevention or expect self-resolution of the symptoms within months. Electric stimulation therapy has been reported to increase the rate of recovery in patients with neurogenic dysphagia due to intubation. However, more studies utilizing NMES in the role of mechanical vocal cord damage are needed.

This case seeks to explore the role of NMES in improving recovery rate of mechanically induced dysphonia/dysphagia due to prolonged intubation.

Case Presentation: dysphagia and aphonia due to the prolonged intubation. The patient had a swallow study which revealed that her vocal cords were mechanically pushed apart leaving her unable to speak. Two weeks after extubation, she was transferred to an acute inpatient rehabilitation facility.

Upon arrival at the rehabilitation hospital, the patient was very soft-spoken and only able to vocalize 3-5 comprehensible words. She remained on a soft food diet with honey-thickened fluids. She received speech therapy along with neuromuscular electric stimulation therapy (NMES). After 5 days of therapy, the patient was able to have a fully intelligible conversation and moved to a regular diet. While her voice remained slightly hoarse, she made an extensive recovery within her 10-day stay.

Conclusion: In COVID patients with unusually severe vocal cord dysfunction following intubation, aggressive speech therapy with electric stimulation therapy may lead to timely recovery and resolution. This case further illustrates the role of Acute Inpatient Rehabilitation in COVID patients.

8. A Post-Operative Reaction to Povidone-Iodine in a Postpartum Woman: A Case Report

Background: High infection rates after cesarean section are a major concern in the United States. A majority of antiseptics have irritant properties if they are not used as specified in companies' guidelines. Allergic contact dermatitis caused by povidone-iodine is infrequent and is misdiagnosed by clinicians who fail to differentiate allergy from irritation. This case report describes an allergic reaction to povidone-iodine after cesarean section.

Case Description: A 28-year-old underwent a repeat low transverse cesarean-section at 39 weeks of gestation. The patient informed the medical team that she had no known allergies and no significant past medical history. The new hospital protocol included cleaning the skin over the planned incision site multiple times with povidone-iodine 7.5% scrub followed by povidone-iodine 10% paint. The surrounding skin was prepped with chlorhexidine. The patient complained of an allergic reaction on her skin the night after the procedure, with severe itching, and stated that it got progressively worse. The patient was started on an oral regimen of steroids and hydroxyzine. The itching slowly improved and at discharge the patient was continued on hydroxyzine and steroids were discontinued. By the patient's six-week postpartum visit, skin hypopigmentation had completely resolved.

Conclusion: This case illustrates a reaction to povidone-iodine after cesarean section. This allergic reaction could not be attributed to any other portions of the procedure.

9. Chronic Psoriasis with Vulvar Presentation: A Case Report

Background: Psoriasis is a fairly common chronic skin condition that presents itself as erythematous, itchy patches with the most commonly affected areas being the elbows, knees, buttocks, scalp, and sites of trauma. Psoriasis of the genitals affects less than half of those diagnosed with psoriasis, and can cause major discomfort and frustration. This case report aims to highlight as well as to help discern the presence of vulvar psoriasis among other causes.

Case Description: This report describes a patient with chronic psoriasis that experienced itching on a skin fold of her genital area. After eliminating other common causes of the symptoms, she was experiencing, such as sexually transmitted diseases, it was determined that the diagnosis was most likely vulvar psoriasis. It was recommended to the patient to wear comfortable, non-irritating underwear, to keep the area well-moisturized with astroglide, and to use a medium-potency steroid ointment. The patient followed-up within a few days stating that she felt much better.

Conclusion: Psoriasis located on the vulva can be difficult to diagnose due to symptoms that can often be confused with other clinical diagnoses. Careful examination and a thorough analysis of the patient's history will lead to the correct diagnosis.

10. Le Fort Fracture Classification: A Case Report Identifying a Le Fort IV Fracture

Background: The Le Fort classification was established in the early 20th century and occurs in 10-20% of facial fractures. Traditional Le Fort fractures are considered facial fractures without extension into the cranium. Modern-day facial trauma occurs at higher rates of velocity resulting in more significant damage and destruction. Although not originally classified, Le Fort IV (Marciani modification) is associated with these high-velocity facial traumas seen in modern day. In our case, we discuss the facial trauma classification of le Fort IV in a young adult male.

Case Description: The Le Fort classification of facial fractures was established in the early 20th century, describing sequela of anterior-posterior directed force to the face that results in bony dissociation of the central face. The injury pattern accounts for approximately 10-20% of facial fractures, and is readily discerned on facial CT. Although not originally described, a subset of Le Fort type fractures is now more routinely seen and recognized with higher impact trauma. A fracture comminution extending into the anterior frontal bone, orbital plate of the frontal bone, or sphenoid is termed Le Fort IV. Recognition of the term "Le Fort IV" can avoid mismanagement in these patients exhibiting a cranial fracture with a facial fracture component. In our case, we discuss the facial trauma classification of Le Fort IV in a young adult male.

Conclusion: Although not originally classified, recognition, and familiarity, of le Fort IV is warranted for closer examination to avoid mismanagement. The traditional le Fort fractures are recognized as facial fractures, while le Fort IV is considered a facial fracture with extension into the skull. With the extension in to the cranium, patients require management with neurosurgery to assist in disimpaction and complications associated with the skull fracture component.

11. Clostridium Sordellii Infection as the Initial Presentation in a Patient with Rectal Carcinoma: A Case Report

Background: Clostridium infections have been linked to GI (Gastrointestinal) cancers historically, however, such association with *Clostridium sordellii* infections has not been clearly established. We report a case of an elderly female admitted for management of *C. sordellii* infected pelvic abscess and was later found to have rectal carcinoma.

Case Description: A 68-year-old female came in for the evaluation of left hip pain with fever for four days. Physical examination showed an irregular tender suprapubic mass with erythema and musculoskeletal exam showed tender left hip joint. Initial labs were significant for leukocytosis with lactic acidosis. MRI pelvis w/o contrast showed poorly marginated gas containing soft tissue abscess in the left pelvis with osteolytic lesions involving the lumbar spine. The patient was admitted to the intensive care unit for pressor support. Sepsis protocol was initiated and she was started on broad-spectrum antibiotics meropenem, clindamycin, and vancomycin. She underwent drainage of the abscess subsequently. Pelvic abscess fluid grew *C. Sordellii*, and the pathology report of the pelvic bone confirmed squamous cell carcinoma of the rectum with bone metastasis. The patient was downgraded to meropenem based on sensitivity and was to complete a seven-day course. She later opted for palliative care due to a poor prognosis.

Conclusion: *C. sordellii* infections are very rare entities and if isolated need prompt source control with broad-spectrum antibiotic therapy. Due to their growing association with underlying GI and GU (genitourinary) cancers, we need further research to understand if we need to screen these patients early for underlying malignancies.

12. Large Ovarian Mucinous Cystadenoma in Early Pregnancy

Background: Mucinous cystadenomas comprise one fourth of all benign epithelial ovarian tumors. These tumors can grow rapidly during pregnancy reaching sizes up to 40cm. It is unclear by which mechanism these tumors grow; however, it is theorized that these tumors may be ER/PR and hCG receptive. Left untreated, they may increase the risk of an ovarian torsion, cyst rupture, preterm labor, fetal growth restriction, or labor dystocia.

Case Description: 32-year-old female, G3P1101, noted to have a large abdominal cystic mass at her initial prenatal visit at eleven weeks gestation. The mass was characterized as ovarian in origin with benign and malignant etiologies to be considered. She elected for expectant management, but ultimately underwent emergent right salpingo-oophorectomy and cystectomy when she presented to the hospital with ovarian torsion. Pathology revealed the cyst to be a mucinous cystadenoma weighing 700 grams, measuring approximately 16 cm in its largest diameter.

Conclusion: Management of adnexal masses during pregnancy presents unique challenges. One study showed increased frequency of torsion of larger adnexal masses (>8 cm in diameter) occurring between 10-17 weeks gestation, which may point to elective surgical management to mediate risks. However, in another study, expectant management was encouraged as elective surgical and emergent surgical managements carried the same risks and similar obstetric outcomes. Patient education and thorough counseling remain the most important factors for the patient's autonomy to decide on treatment course. Individualized evaluation of each case allows for a tailored approach for management and prevention of adverse outcomes during pregnancy.

13. Thrombectomy of DVT in Pregnancy at 12 Weeks

Background: Venous thromboembolism in pregnancy is associated with increased maternal morbidity, mortality, and health care costs. While treatments for DVTs during pregnancy are most commonly anticoagulation with LMWH or heparin, mechanical thrombectomy may be safely used in the cases of more extensive or life threatening clots.

Case Description: This case presents a 27 year old G4P3003 at 12 weeks gestation who presented to the hospital with complaints of lower pelvic pain, dull lower extremity edema, and left lower extremity swelling. Lower extremity doppler showed a deep vein thrombosis of the left iliac vein, common femoral vein, superficial femoral vein, proximal profunda vein, and the proximal popliteal vein. Due to the extensive nature of the clot, the patient underwent a thrombectomy utilizing the ClotTriever device. She was discharged with anticoagulation therapy and had an uneventful pregnancy until her delivery at 38 weeks gestation.

Conclusion: Mechanical thrombectomy along with anticoagulation is a safe and effective way to treat DVTs in pregnancy as needed. Abdominal shielding can be used to decrease fetal risk during the procedure and risks and benefits must be discussed with the patient.

14. Severe Intraamniotic Infection at 30 Weeks gestation in a Patient with Limited Prenatal Care

Background: Intraamniotic Infection (IAI), previously known as chorioamnionitis, is an infection characterized by the inflammation of amniotic fluid, placenta, fetus, fetal membranes, or decidua that can be associated with many neonatal and maternal adverse outcomes.

Case Description: We present a case of a 21-year-old female who presented at 30 weeks and 0 days gestation with signs of preterm labor, premature rupture of membranes, and intraamniotic infection. Patient had precipitous delivery with subsequent postpartum complications of uterine atony, bleeding, endometritis, and sepsis. The neonate was intubated and admitted to NICU for pneumonia and sepsis.

Conclusion: Intraamniotic infections have a higher rate of incidence and adverse outcomes in preterm births. Regardless of gestational age, it is important to promptly diagnosis any conditions so that treatment and delivery of neonate can be initiated to prevent such outcomes.

15. Development of PTSD after Severe COVID

Background: The COVID-19 Pandemic has affected millions across the globe. Increasing literature suggests long term sequelae which also includes psychological consequences. Posttraumatic stress disorder (PTSD) is a psychiatric disorder that results from being exposed to or witnessing a life threatening traumatic event. According to literature, there is a correlation between PTSD and several infectious diseases and recovering from a life-threatening illness could lead to PTSD. Based on a recent meta analysis in the intensive care unit setting, the prevalence of PTSD at a 3 month follow up was 15.9%. Some studies indicate that a preexisting history of psychiatric disorders particularly depression and anxiety was a string risk factor for development of PTSD. The prevalent symptoms include intrusive reexperiencing and heightened arousal. In a cross-sectional observational study where 574 participants were followed up 193.9 days, 77.9% presented with at least 1 symptom. Fatigue and muscle weakness (47.9%) was the most reported symptom followed by chest distress (29.4%) and sleep difficulty (29.4%). Here, we discuss a case of a 48-year-old male with psychiatric history only significant for depression that presented to the clinic with symptoms of PTSD after recovering from a severe COVID infection. We will discuss the prevalence of PTSD in survivors of COVID and symptoms that all clinicians should be aware of when treating patients that have survived a COVID infection.

Case Description: 48-year-old male with a history of depression presents with “strange sensations” in his body that are causing increasing distress and began soon after being diagnosed with COVID-19. He reports multiple visits to the cardiologist for these sensations in his chest despite being reassured that his heart and lungs seemed to be recovering well from his illness. He finally sought help from psychiatry after being placed on alprazolam 0.25mg twice-a-day as needed for anxiety for 7 months. At his initial psychiatric appointment, he continues to complain of anxiety that seems to be triggered by any unusual sensation in his body especially his chest. One of his greatest concerns were that he was unable to return to pre-COVID levels of physical functioning despite recovering 7 months ago. He describes the sensations as “something moving underneath my heart.” He recalls this sensation is similar to how he felt during his active COVID infection. Also reports that he has difficulty sleeping because of constant worry that he will be re-infected with COVID and waking up from sleep worrying about COVID. PCL-5 showed a score of 20.

Conclusion: The COVID-19 pandemic presented a unique period of traumatic stress in the American population. Along with the social and political upheaval that seemed to be sparked by differing worldviews on how to best handle the outbreak, 43% of the population being infected at some point, and constant media coverage of the virus, meant that countless relatives and loved-ones experienced the trauma of seeing a loved one suffering though this illness and being reminded of it daily as day-to-day interactions changed to account for the spreading pandemic. Here, we presented a case of a 48-year-old male with no previous medical history, who had relatively mild COVID symptoms, but continued to have symptoms even after recovery and developed such an aversion to anything that would remind him of his illness that he was unable to function in daily life. This case highlights the importance of screening for PTSD in survivors of PTSD even months after the resolution of the illness itself.

16. A Rare Case of Bone Marrow Sarcoidosis with Hepatosplenomegaly and Lymphadenopathy Mimicking Myelodysplastic Neoplasm

Background: Bone marrow sarcoidosis is a rare entity. We present to you a case of a young female who presented with hepatosplenomegaly and diffuse lymphadenopathy mimicking a myeloproliferative neoplasm. She was later found to have sarcoidosis involving the bone marrow and liver after a tissue biopsy.

Case Description: A young white female with a history of alcohol abuse was admitted to the inpatient floor for evaluation of bright per rectal bleed for 1 week. On further inquiry, she had abdominal distention with right upper quadrant pain for 2 months which improved with painkillers. Physical examination showed tender hepatosplenomegaly. Labs showed elevated transaminases and bilirubin. The urine pregnancy test, hepatitis panel, alpha-fetoprotein were negative. CT abdomen showed massive hepatosplenomegaly with posterior mediastinal, celiac, para-aortic, and retroperitoneal lymphadenopathy. CT thorax was normal. Ultrasound liver confirmed hepatosplenomegaly with mild cirrhotic changes and intraperitoneal ascites. As her symptoms improved, she was discharged the next day on pantoprazole therapy for gastritis and was advised to follow up with a Gastroenterologist and Oncologist outpatient. She underwent bone marrow and liver biopsy later which showed focal noncaseating granuloma. After ruling out other causes of granulomatous diseases, systemic sarcoidosis was diagnosed and the patient was started on steroid therapy.

Conclusion: Non-pulmonary sarcoidosis can imitate other systemic diseases, malignancies, and infections. One should have a high index of clinical suspicion to avoid unnecessary testing and initiate prompt treatment after diagnosis.

17. “Double Whammy”: Tricuspid and Mitral Endocarditis in Intravenous Drug User with Diffuse Septic Emboli

Background: Right sided infective endocarditis (IE) carries better outcomes compared to left sided IE, however, with concurrent left sided valvular involvement, mortality is higher. With rates of heroin abuse doubling in the US in the last decade, the incidence of concurrent right and left sided IE is steadily rising.

Case Description: We report the case of a 40-year-old female with a known history of Intravenous (IV) heroin use who presented with lethargy, confusion, and abdominal pain for one week. On exam, she was hypoxic, hypotensive, tachycardic and confused. She had extensive bilateral forearm cellulitis from injection drug use and exhibited substantial peripheral cutaneous stigmata of IE on the extremities. She was intubated on arrival for hypoxia and airway protection. Blood, urine, and sputum cultures grew MRSA. Transthoracic echo revealed large vegetations on both tricuspid and mitral valves, establishing the diagnosis of infective endocarditis. Further imaging on admission confirmed extensive septic emboli to the lungs and spleen, however sparing the brain. As patient was critically ill and hemodynamically unstable, cardiac surgical intervention was initially held off. Despite being aggressively treated with IV vancomycin, the patient subsequently developed neurological deficits. Repeat CT imaging of the brain on day five of hospitalization demonstrated multiple embolic infarcts. Due to the decline in clinical state, the patient was terminally extubated per family’s request, and passed away shortly thereafter.

Conclusion: While timely diagnosis and aggressive management is the key to improving outcomes in IE, combined left and right sided valve involvement in IV drug use confers a very poor prognosis.

18. Hypophosphatasia – A Rare and Unique Bone Mineralization Disorder

Background: HPP (Hypophosphatasia) is a rare and unique inherited disorder of bone and mineral metabolism caused by mutations in the ALPL gene. It is often underdiagnosed or misdiagnosed for years. There is a perceived low importance and awareness among clinicians associated with the decreased serum ALP levels in contrast to high levels for a work-up towards diagnosis

Case Description: A 19 -year-old male with a history of depression had dizziness and a fall. Workup by PCP revealed high calcium and low serum ALP levels. He had nonspecific bone pains in lower extremities. No history of fractures, kidney stones. Vitals and exam were normal. No skeletal deformities or bony tenderness. ALP was low at 25 IU/L Calcium was high 10.6 mg/dl. Repeat labs revealed ALP 20 IU/L. PTH was low at 12 pg/L. Thyroid tests were normal. DEXA was normal. Vitamin B6 level was high at 490 nmol/L. ALPL genetic testing revealed pathogenic variants in ALPL gene (c881A>C; p. Asp294Ala)

Conclusion: Pauci symptomatic HPP presents with little or no clinical expression. Diagnostic clues are low serum ALP and increased levels of ALP substrates including PLP (Pyridoxal 5 Phosphate-B6 vitamin). Genetic testing for ALPL pathogenic variants confirms the diagnosis. Adult HPP is often diagnosed after middle age. We report a case of HPP diagnosed in early adulthood by pursuing incidental abnormal ALP. This case exemplifies that paying careful attention to the reference ranges and a curious approach to a commonly tested biochemical lab work abnormality helps early diagnosis of a rare disorder leading to improved outcomes

19. Epidural Chloroma in a Patient with Acute Myeloid Leukemia

Background: Chloroma, also known as granulocytic sarcoma or myeloid sarcoma, is a rare extramedullary tumor composed of myeloblasts which can occur even in the absence of bone marrow involvement. Commonly associated with acute myeloid leukemia (AML), it may manifest at any age or location. However, epidural presentation is extremely rare and is found only in 0.2% of AML patients. We herein detail an uncommon case of epidural chloroma in a patient with AML relapse.

Case Description: A 29-year-old male presented with new onset low back pain and radiculopathy symptoms. He had stable vitals and physical examination was remarkable for left dorsiflexion weakness. Imaging tests revealed abnormal enhancing epidural soft tissue at L5-S1 causing partial effacement of the thecal sac with mild-to-moderate central canal stenosis. Neurosurgery and hemato-oncology were consulted. He was previously diagnosed with AML a year prior, and he received induction and consolidative chemotherapy. Due to suspicion for chloroma, peripheral flow cytometry and biopsy of the lesion were obtained, which confirmed relapse of AML and chloroma respectively. He was subsequently transferred to the higher center for high dose chemotherapy and allogenic bone marrow transplant.

Conclusion: Chloroma should be considered among the key differentials in patients presenting with epidural mass, especially in those with a history of AML. Early diagnosis and timely initiation of AML type therapy is of utmost importance to prevent significant morbidity and mortality.

20. A Rare Case of Secondary Evans Syndrome due to Sjögren's Syndrome

Background: Evans syndrome, an autoimmune disorder, is characterized by at least two cytopenias, mainly immune thrombocytopenia (ITP) and warm-type autoimmune hemolytic anemia (AIHA). It can be primary or secondary, associated with other autoimmune conditions, immunodeficiency syndromes, rheumatological diseases, hematological malignancies, or viral illnesses. We report an uncommon case of Evans syndrome associated with Sjögren's syndrome.

Case Description: A 67-year-old female presented to the emergency department with bruising of extremities and epistaxis. Vitals were stable and physical examination revealed right subconjunctival hemorrhage and numerous non-palpable purpurae. Labs were significant only for platelets 5000/mcL. Peripheral smear showed severe thrombocytopenia with scattered large and few platelets. Imaging tests and infectious screening were unremarkable. Rheumatology and hemato-oncology were consulted. Bone marrow biopsy revealed mildly hypercellular marrow with no dyspoiesis. Further workup revealed positive ANA 1:80 and ITP was diagnosed. She received platelet transfusion, IVIG and prednisolone and was subsequently discharged. However, shortly after, she was readmitted for refractory ITP with severe thrombocytopenia 2000/mcL. She received appropriate treatment as before, however, her hemoglobin dropped to 11.4 mg/dL. Labs revealed findings suggestive of AIHA. Anti-SSA antibody were high which favored Sjögren's and secondary Evans syndrome was suspected. Rituximab was added to the treatment regimen. She was referred to higher center for further management thereafter.

Conclusion: Evans syndrome is difficult to diagnose and manage. It requires great suspicion and extensive workup, especially to rule out secondary causes as the management differs based on the cause. Although rarely reported, Sjögren's syndrome should be considered as a possible etiology.

21. Bilobate Placenta with Intervillous Thrombosis and Infarct – A Report of Good Neonatal Outcome

Background: The placenta plays an essential role in the maternal-fetal environment throughout pregnancy however; it is often overlooked during routine antenatal imaging. Studies have shown that irregular placental shapes are associated with deformation of the placental vascular network and diminished placental efficiency. However, literature on congenital placental anomalies and anatomic variation is slim. A bilobed placenta (bipartite placenta, placenta bilobate) describes a variant of normal placental morphology in which the placenta is separated into two near equal-sized lobes. While there is no increased risk of fetal anomalies with this morphology, it can however increase the potential for negative perinatal outcomes.

Case Description: A 42-year-old G1P1 African American female with a past medical history of infertility, intrauterine insemination, Diabetes Mellitus Type II, and cigarette smoking. The patient underwent an uncomplicated pregnancy course, however decided to continue smoking despite extensive counseling. At 39 1/7 weeks-gestation, the patient underwent a caesarean section for repeat deep decelerations and birthed a female neonate with an uncomplicated outcome (3,650 g neonate, APGARs 5 and 9 at 1 and 5 minutes, respectively). At delivery, the placenta showed to be bilobate with an evident infarct and a marginal cord insertion. Microscopic placental examination of the placenta revealed intervillous thrombosis and the infarct was confirmed. Neonate continued to do well and both patients' postpartum period was uneventful.

Conclusion: The early detection of this placental anomaly by ultrasonography (USG) emphasizes the importance of USG in obstetrics, especially in patients with the risk factors noted in our case. Our patient did not have any perinatal complications, however addition of the histopathology described in this case to the literature can provide guidance for future clinicians in the detection and management of this morphology

22. A Case of Prolymphocytic Leukemia

Background: T-cell prolymphocytic leukemia (T-PLL) is a rare and aggressive post-thymic T-cell malignancy with limited treatment options. We report a case of T-PLL that presented as a pleural effusion, seen in <15% cases.

Case Description: 65-years-old Hispanic female, known smoker, with no significant medical history presented to the hospital with acute hypoxemic respiratory failure secondary to right-sided pleural effusion requiring 10-12 liter/oxygen/min and non-pitting pedal edema. Blood work revealed profound leukocytosis (WBC > 400K), thrombocytopenia (Platelet 69,000) with normal hemoglobin levels. Peripheral blood smear showed predominate lymphocytosis with large abnormal monocytoids appearance cell. CT showed bilateral axillary lymphadenopathy, mild mediastinal adenopathy with hepatosplenomegaly. Patient was initially treated with Solu-Medrol, IV fluids and ceftriaxone and azithromycin as-well-as hydroxyurea and allopurinol. As she did not show improvement after thoracentesis, patient underwent leukapheresis due to the possibility of leukostasis causing respiratory failure. Flow cytometry reported atypical CD4+/CD8- T-lineage population (73% of total cells). Bone marrow biopsy revealed T-cell prolymphocytic leukemia (greater than 80% cellularity) high nuclear–cytoplasmic ratio, normal karyotype. She underwent induction and maintenance therapy with antiCD52-alemtuzumab, with appropriate downtrend of WBC count mild anemia and thrombocytopenia.

Conclusion: T-PLL has an aggressive clinical course with a poor prognosis and median survival of ~2 years with alemtuzumab. Without treatment the median survival is in months. Serous effusions are a less common presentation of an already rare disease. Due to its rarity, prompt recognition is important, as patients progress quickly without treatment.

23. A Case of COVID-19 Induced Acquired Thrombotic Thrombocytopenia Purpura

Background: Thrombotic thrombocytopenic purpura (TTP) is a rare hematologic disorder with formation of disseminated microvascular platelet thrombi because of loss of regulation of von Willebrand factor multimers essential for tethering platelets together. We present a unique encounter of a patient with COVID-19 induced acquired TTP.

Case Description: 58-year-old unvaccinated Latino male, presented with flu-like symptoms, icterus, and a large hematoma over his left arm. Physical exam showed pallor and icterus. Investigations revealed anemia (Hb 6.6g/dl), thrombocytopenia (Platelet 9000), hyperbilirubinemia (TB 2.9 mg/dL), haptoglobin <10, and elevated lactate dehydrogenase at 998 U/L, with normal coagulation profile. Autoimmune workup, hepatitis panel, HIV, and direct coombs test were negative. Peripheral blood smear showed 2+ schistocytes in each high-power field. ADAMTS13 inhibitor was 6.9 Bethesda unit (BU) (reference <0.4 BU), and ADAMTS13 activity was less than 5 % (reference > 61 %), confirming the diagnosis of TTP. Prompt treatment with prednisone 80 mg daily, plasmapheresis, and Rituximab. As TTP relapsed within a day of stopping plasmapheresis, patient was treated with Caplacizumab. Over the following ten days, he recovered both symptomatically as well as on lab work-up.

Conclusion: Acquired TTP is a medical emergency that is highly fatal if untreated. Studies have shown that COVID-19 induces a hypercoagulable state with raised factor VIII levels, perturbation of the endothelium with elevated VWF, and a mild to moderate reduction of ADAMTS13 activity. It may also provoke IgG-type autoantibody against ADAMTS13. Since a causal relationship between covid-19 and TTP has not yet been defined, this is an interesting presentation prompting clinician awareness.

24. Chronic Idiopathic Cough – Could Iron Deficiency Be the Culprit?

Background: Chronic cough affects 14–23% of the adult population often causing considerable distress and morbidity. The differentials includes postnasal drip, asthma, postnasal drip along with asthma, chronic bronchitis, gastroesophageal reflux, and miscellaneous disorders. We report a peculiar case of woman with chronic idiopathic cough, which resolved with correction of severe iron-deficiency anemia(IDA).

Case Description: 53-year-old female with no significant medical history presented with long-standing chronic dry cough that progressively worsened over the past 10 days along-with new-onset exertional shortness of breath, prompting her ED arrival. Further history revealed 7 weeks of significant ice craving, excessive fatigue and one-year history of irregular and heavy menstrual periods. On examination, she was tachypneic and tachycardiac with mild respiratory distress from coughing. Conjunctival pallor noted. Oxygen saturations were above 90% and normal peak expiratory flow rate, with no sinus tenderness, postnasal drip, or signs of oropharyngeal mucosal inflammation. Extensive laboratory work-up negative except microcytic hypochromic anemia with hemoglobin of 6.9 g/dL (range 12-16 g/dL). Iron profile consistent with IDA. Treatment with one unit of packed red-blood cell transfusion initiated in addition to out-patient ferrous sulfate 325mg twice daily. At two-month follow-up, she reported complete resolution of cough with improvement in hemoglobin to 11 g/dL.

Conclusion: Studies have proposed that iron deficiency can impair the airway mucosal defense mechanism causing airway inflammation and hyperresponsive cough receptors. A female preponderance is observed in both IDA and idiopathic cough. Hence, IDA should be considered as a differential for chronic Idiopathic cough in women.

25. Incidental Circumvallate Placenta without Clinical Complications in a Young Primigravid: A Case Report

Background: Circumvallate placenta is an abnormally shaped placenta with a marginal fold of the chorion that projects villous tissue beyond the chorion plate edge. Circumvallate placenta has clinical relevance, as the current literature shows associations of circumvallate placenta with prenatal bleeding, and placental abruption, among others. Little literature notes this pathology generating normal obstetric outcomes.

Case Description: We present a 22 year old G1P0 with a history of chronic anemia refractory to maximal iron and folic acid supplementation presenting with a history of spotting beginning in the first trimester. The spotting recurred throughout the pregnancy. Maternal Fetal Medicine conducted an ultrasound, identifying no cause for the bleeding. The patient had a premature rupture of membranes (PROM) at 36 weeks and 3 days and delivered vaginally. The child was female with APGAR scores of 6 and 9 at 1 and 5 minutes, respectively. With the manual extraction of the placenta post-baby delivery, there was an estimated blood loss (EBL) of 850mL. Blood products were offered due to her history and EBL, but the patient declined due to religious beliefs. Her hemoglobin post-partum was 8.6 µg/L, however, she was tolerating well without significant symptoms. The patient and neonate were discharged from the hospital on hospital day 3. The diagnosis of the circumvallate placenta was made upon delivery and inspection, and additional complications presented on routine follow up.

Conclusion: We report a case of circumvallate placenta with benign clinical outcomes, a deviation from its usual association with perinatal morbidity and mortality.

26. Orbital Lymphoma Masquerading as Thyroid Ophthalmopathy

Background: Graves' orbitopathy (GO) is the most common cause of orbital tissue inflammation, accounting for ~ 60% of all orbital inflammatory conditions in the population aged 21-60 years. GO is observed in 25-30% of patients with Graves' hyperthyroidism, a small proportion of GO patients (1-2%) do not have a clinically overt thyroid dysfunction. Between 5 and 10% of orbitopathies can be attributed to neoplasms, half of which are lymphomas. According to, Journal of Endocrinological Investigation 40% of orbital lymphomas derive from the mucosa-associated lymphoid tissue (MALT). In ~25% of the cases, the presentation is bilateral. At the time of the diagnosis ~ 40% of patients have a systemic involvement, whereas ~60% have a localized form, which usually develops into a systemic lymphoma within 5 years. Orbital lymphoma should always be suspected and excluded in all cases of orbital inflammation. We are presenting a case of a delayed diagnosis of orbital MALT Lymphoma in a young patient who was initially diagnosed with euthyroid ophthalmopathy .

Case Description: A 27-year-old female with uncontrolled diabetes type 2, endometriosis , PCOS and ophthalmopathy, legally blind in left eye with blurring of vision in the right eye presented to our inpatient service for two episodes of tonic-clonic seizures. Ophthalmic examination showed bilateral proptosis, conjunctival chemosis and deviation of the gaze in the right eye.

In 2019, the patient presented with the same ophthalmopathy. Due to classic ocular features of Graves' disease ophthalmopathy and negative thyroid function tests T3, T4, and thyroid-stimulating hormone (TSH) including serological tests like anti-TSHR, thyroid peroxidase antibody, thyroid-stimulating antibody, and thyroglobulin antibodies, diagnosis of Euthyroid Graves ophthalmopathy was made. Results of orbital MRI showed bilateral enlargement of the medial recti muscles compressing both the optic nerves along with orbital fat edema. Her proptosis, eye swelling, and visual acuity improved by the second day of steroid administration. Upon discharge, the patient was transitioned to oral steroids and treatment targeted for thyroid orbitopathy, i.e. immunotherapy with teprotumumab.

After the initial improvement , over the past two years, her visual acuity started to deteriorate again. At the start of 2021, she was declared legally blind in left eye. In October 2021 , biopsy of the left extraocular muscle was done which came out to be positive for Extranodal marginal zone B-cell lymphoma (mild-type) with plasmacytic differentiation associated with increased IgG4 (plasma cells average 82% IgG4/IgG) histologically suggestive of IgG4 related disease. There was fibroconnective tissue with striated muscle mostly infiltrated and dissected by lymphocytic infiltrate, with a few plasma cells and rare histiocytes. R-CHOP chemotherapy was started, the first session she got in Houston. Her blurring of the vision in the right eye got better and in the interim she was started on intrathecal chemotherapy for better penetration. During the second outpatient intrathecal chemotherapy session, she had two witnessed tonic clonic seizure episodes and was admitted to hospital for further evaluation.

CT scan was done in ED which revealed fusiform infiltrating a left orbital conal mass infiltrating the left rectus muscle and a wrapping around the optic nerve sheaths. Less severe diffuse fusiform enlargement of the right medial rectus muscle with a cluster of extra coronal nodules wrapping around the scleral insertion of the medial rectus muscle and partially extruding

into the conjunctiva was found along with B/L severe exophthalmos. Lumbar puncture was done for CSF fluid analysis to rule out malignant infiltration ,flow cytometry was negative. Patient was observed for 24 hours. She didn't have any episodes of seizures and had a clear clinical improvement in vision in right eye. She was discharged home with Keppra 500 mg BID with provisional diagnosis of seizures 2/2 meningeal irritation from cytarabine intrathecal infusion. She will undergo 6 chemotherapy sessions , 1 session every 3rd week, ? sessions are done, we will follow up on her regarding clinical improvement.

Conclusion: The most frequent cause of the bilateral proptosis is Graves' ophthalmopathy. Between 5 and 10% of orbitopathies can be attributed to neoplasms, half of which are lymphomas. This case emphasizes the need to include space-occupying lesions in the differential diagnosis of proptosis and gaze restrictions. It should remind physicians that bilateral orbital lymphoma, although uncommon, may mimic Graves' ophthalmopathy.

27. Hip Pain and Dysphagia, What is the Connection?

Background: We discussed an interesting case of hip pain due to esophageal mets.

Case Description: A 61-year-old male with DM1 and asthma came to the ER with worsening right hip pain and weakness for one month. Pain radiating to knee and exacerbated with movement /walking and no relieving factors limiting lower extremity movement. Pt had a fall 3 months back. He also had difficulty swallowing liquids and solids and lost about 40 pounds in the last 4 months. He smoked 2 packs of cigarettes for 14 years and quit 2 years back.

On exam vitals were T:97.6 F, BP:133/68, HR:107, RR:16, Sat:92%. Patient was in mild distress due to pain. Positive findings include decreased range of motion of the right lower extremity with tenderness and swelling of the right hip. Labs of significance were alkaline phosphatase of 181, GGT 260 and HbA1c of 7.1

X-ray pelvis / femur showed acute sub capital fracture of the right femoral neck with impaction and angulation. MRI pelvis shows infiltrative malignant process involving the right femoral head and neck and CT thorax showed malignant mediastinal lymphadenopathy. CT abdomen / pelvis showed large metastatic lesion to the right lobe of the liver and a large area of permeative bone destruction involving the right femoral head and neck.

EGD revealed a large partially obstructing esophageal mass with pathology showing necrotizing moderate-poorly differentiated adenocarcinoma arising in GE junction.

Conclusion: Only about 7 % of esophageal cancer will metastasis to bone. This makes this a rare case of hip pain, highlighting the need for clinicians to be vigilant about rare etiologies.

28. Conn's Syndrome Presenting with Tetany

Background: While we are familiar with classic presentation of Conn's syndrome including hypertension, hypokalemia and metabolic alkalosis, its effects on fluid, electrolyte and acid-base balance are more complex. We present a unique case of a young male with primary hyperaldosteronism presenting with preelectrolyte imbalance and tetany.

Case Description: A 40-year-old hispanic male with history of hypertension and chronic hypokalemia presented with complaints of generalized weakness and diffuse cramps. He had stable vitals upon presentation and labs were significant for hypokalemia 1.4mmol/L, creatinine 1.8mg/dL, bicarbonate 31mEq/L, hypomagnesemia 1.6mg/dL and hypophosphatemia 1.7mg/dL. CT abdomen showed 2.7x3.7 cm right lipid rich adrenal adenoma. He was managed with aggressive IV fluids and potassium supplements, however, he had persistent hypokalemia. He also developed hypertensive urgency (maximum BP 240/121) and symptomatic hypocalcemia 6.2mg/dL with generalized painful spasms along with positive Chvostek's and Trousseau's signs. Nephrology and endocrinology were consulted. Further workups revealed plasma aldosterone >134ng/dL, renin activity <0.1ng/mL/hr, PTH 366.6. Workup for pheochromocytoma and Cushing's syndrome were negative. Together with aggressive electrolyte correction, he was started on eplerenone due to history of gynecomastia with spironolactone. He was subsequently discharged on stable condition with plans for close outpatient monitoring, adrenal venous sampling, and possible adrenalectomy.

Conclusion: Primary hyperaldosteronism occurs mostly due to unilateral adenoma or bilateral hyperplasia and is increasingly identified as a common cause for secondary hypertension. Timely diagnosis is essential for adequate BP and electrolyte management acutely and to prevent adverse cardiovascular outcomes in future.

29. Epistaxis as an Initial Presentation of Multiple Myeloma

Background: Multiple myeloma (MM) is a neoplastic proliferation of plasma cells producing monoclonal immunoglobulins and commonly presents with hypercalcemia, renal failure, normocytic anemia, and bone disease. We report an atypical case of recurrent epistaxis in a MM patient, which is otherwise common in Waldenstrom's macroglobulinemia secondary to hyperviscosity.

Case Description: A 79-year-old female with history of chronic atrial fibrillation not on anticoagulants, COPD, hypertension, hyperlipidemia was admitted for recurrent epistaxis. Vitals were stable and dried blood was noted around nostrils. Admission labs were significant for hemoglobin 6g/dl, creatinine 12mg/dl, hyponatremia 123mmol/l, hyperproteinemia 17.1g/ dl (globulin fraction 9.32), positive FOBT. Nephrology, gastroenterology, ENT and hemato-oncology were consulted. Further workups were significant for low c3 43mg/dl, c4 6mg/dl, elevated serum kappa chains 1311mg/L with kappa/lambda ratio 163. She underwent bilateral cauterization of aberrant vessels and nasal septal perforation biopsy were negative for granuloma, vasculitis, or malignancy. Renal biopsy revealed kappa light chain cast nephropathy and immunoglobulin electrophoresis was consistent with IgG light chain myeloma. Bone marrow biopsy of right iliac crest with flowcytometry revealed monoclonal plasma cells with 8.9% kappa light chain restriction and FISH report was normal. She was planned for inpatient evidence-based therapy for MM with outpatient PET scan, however, her condition rapidly deteriorated and she eventually succumbed to cardiac arrest.

Conclusion: 20% of MM patients can present with atypical symptoms. Patients with recurrent epistaxis with no obvious cause should be investigated for MM, especially in the presence of other constellation of symptoms and lab abnormalities typical for myeloma.

30. A Case of Munchausen Syndrome Masquerading as Non-Suicidal Self Injurious Behavior

Background: We present a case of Munchausen syndrome (now called as Factitious disorder) which initially presented as a case of repeated Non Suicidal Injurious Behavior in the form of repeated ingestion of objects including toothbrush and battery. Unnecessary burden on healthcare was avoided by timely soliciting collateral information which ruled out the presumptive diagnosis of Non Suicidal Injurious Behavior and highlighted the existence of the Munchhausen syndrome in the patient.

Case Description: A 29 year old female presents to the Emergency Room via EMS secondary to swallowing a toothbrush. Patient reportedly had two more attempts in the past week when she ingested a battery and toothbrush, among other things. Imaging studies in the form of CT abdomen and pelvis w/o contrast, and chest X-ray confirmed the presence of Ingested foreign body in the region of the stomach. Once the foreign body was successfully removed by Esophagogastroduodenoscopy, Consult Liaison team from Psychiatry was consulted to further assess the patient's psyche and provide recommendations on appropriate care. The patient's chief complaints and other narrative gave the initial impression that patient might be suffering from either Suicidal ideation or Non Suicidal Self Injurious Behavioral urges, diagnoses warranting immediate and intense inpatient psychiatric care to ensure patient's safety. However, upon reaching out to the patient's father with the intention of gaining more collateral information, it was discovered that the patient has a history of manipulative behavior where the patient had been in and out of hospital under false pretexts including falsifications of pregnancy tests, and use of Heroin to benefit from intensive medical and psychiatric care for prolonged periods. Patient has a history of being diagnosed with Munchhausen syndrome, PTSD and Anxiety disorders.

Conclusion: Though the presentation of Munchausen disorder can vary widely, some of the most common presentations include chest pain, abdominal pain, vomiting and/or diarrhea, anemia, hypoglycemia, infections, seizures, weakness, headaches, vision loss, skin wounds, and arthralgias.

Our case report highlights a rare form of presentation, i.e. ingestion of objects, as well as the importance of soliciting collateral information in time to make the most appropriate diagnosis and treatment plan.

31. Allopurinol Induced Diffuse Erythroderma with Concomitant Plaque Psoriasis

Background: Allopurinol has frequently been reported to cause delayed hypersensitivity reactions, known as allopurinol hypersensitivity syndrome(AHS). This risk is higher in patients with HLA-B*5801, commonly seen in Koreans(12.2%). We report a rare case of diffuse exfoliative erythroderma with renal involvement after allopurinol use.

Case Presentation: 37-year-old Korean male with medical-history significant for hypertension, gout and stage-IV-chronic kidney disease presented with progressively worsening diffuse, pruritic rash and diarrhea for 2 weeks. 5 weeks prior he had a gout-flare, treated with allopurinol and colchicine. Examination revealed generalized exfoliative erythematous macules and oral ulcers. Laboratory values of concern included GFR 11.9; BUN/Creatinine 78/6.9; CK 5,374; Lactic acid 3.3; AST/ALT 167/229 and urine RBC's. He was initially treated with dexamethasone and four days of empiric-antibiotics with vancomycin and piperacillin-tazobactam for possible sepsis. The rash was progressively desquamating; he was diagnosed with allopurinol-induced diffuse erythroderma and treated with 1mg/kg oral-prednisone for one-week, followed by a taper. Punch biopsy of skin revealed spongiosis, acanthosis and few necrotic keratinocytes. Renal biopsy showed acute-on-chronic tubulointerstitial nephritis with acute tubular injury/atrophy; diffuse focal segmental glomerulosclerosis. He was given temporary hemodialysis. Complement levels were normal. HLA-B*5801 was positive. He improved significantly on steroids over the following 2 weeks. On outpatient follow-up, he was found to relapse with silvery scaly plaques while on steroids, that was treated with Adalimumab 40mg sc/q2wks for plaque-psoriasis. He was back to baseline within one-month of treatment.

Conclusion: Allopurinol induced diffuse erythroderma with concomitant plaque psoriasis has not been reported frequently and should be considered within the spectrum of AHS.

32. Schistocytosis in Vitamin B12 Deficiency Mimicking Thrombotic Thrombocytopenia Purpura: A Rare Complication

Background: Pseudothrombotic microangiopathy (PTM) is a rare presentation of Vitamin B12 deficiency. It can present as a diagnostic challenge due to similar laboratory abnormalities as thrombotic thrombocytopenic purpura (TTP) such as microangiopathic hemolytic anemia (MAHA), thrombocytopenia, schistocytosis. Here, we present a rare case of PTM due to severe Vitamin B12 deficiency.

Case Description: 75 year old female with hypertension, hypothyroidism, asthma presented to hospital with generalized weakness, numbness of her hands and feet since one month. Vitals were all stable. Lab work showed anemia with hemoglobin of 5 gm/dl, MCV of 99.2 fl, reticulocyte count of 0.83% and platelet count of 77,000 cells/mm³. Peripheral smear showed anisocytosis 2+, teardrop cells, schistocytes. Anemia work-up revealed normal iron studies, mild elevated serum folate 37.1 ng/mL, severely decreased vitamin B12 <60 pg/mL (range 239-931). Anemia, thrombocytopenia and schistocytosis prompted concern for MAHA. The lactate dehydrogenase was elevated at 1165 units/L and decreased haptoglobin of <10 mg/dL. Serum methylmalonic acid level was elevated 27,218 nmol/L. Antiparietal and anti-intrinsic factor antibodies were positive concluding pernicious anemia as the cause for vitamin B12 deficiency. Intramuscular replacement of vit B12 1000mcg/dl was initiated with remarkable clinical and bone marrow response with normalization of hemoglobin, and platelet count.

Conclusion: Vitamin B12 deficiency can lead to PTM due to intramedullary destruction of erythrocytes in bone marrow. Differentiating between PTM and a true MAHA, such as TTP, is important since an inappropriate diagnosis of TTP can lead to numerous expensive treatments, such as intensive care unit admission and plasmapheresis.

Basic Science Research

Quality Improvement Projects

1. 30 Day Hospital Readmission Rate Reduction in Geriatric Patients with Strict Outpatient Follow-up

Background: Acute hospital services account for the largest portion of health care system budgets and the geriatric population, 65 year and older represents nearly 19-67% of hospitalized adults. The elderly population, especially the vulnerable patient population, is at high risk for hospital readmission. A readmission is defined as when a patient is discharged from an acute care hospital and is admitted back to an acute care hospital in a set amount of days. The national standard time-span for this is 30-days. A reduction in hospital re-admission among the geriatric population may serve as a dual benefit of improving care for them and reducing the use of monetary cost of specialist health care. This project aims to reduce hospital readmissions of geriatric patients by implementing stricter outpatient follow up in clinics and more frequent home visits with primary care physicians.

Materials and Methods:

We collected the admitting diagnosis, gender, and PCP information of 62 patients who were admitted to Medical Center Hospital in 2020-2021. Patients were discharged with a scheduled outpatient follow-up appointment at Texas Tech clinic. We chart reviewed using clinic and hospital EMR to determine PCP follow-up, Home Health care and readmission status post-discharge. Thirty-day readmission rate was compared in patients with or without timely PCP follow up and with or without Home Health care on discharge.

Results: Submitted a table

Conclusion: There is no significant difference in readmission rates in patients that were discharged home with home health care to those discharged without home health, or in patients with timely PCP follow up to those without timely PCP follow up. However, in the readmitted group for home health, readmission rates at 30 days were significantly lower in patients with home health care vs in those without home health care post-discharge. There is mild to moderate evidence that in the readmitted group for PCP follow-up, patients who had a timely follow up with PCP post- discharge had lower readmission rate compared to those that did not. We performed subgroup analysis with a breakdown by gender and admitting diagnosis in which no significant differences in readmission rates based on gender or admitting diagnosis were noted. Further research is needed for more conclusive evidence on the impact of strict outpatient follow up and home health care on hospital readmission rates in the geriatric population.

2. Tummy Time for Your Career: Building a Stronger Core with a Departmental Personal Development Book Club

Background: Given the high rates of physician burnout syndrome in obstetrics and gynecology, physician well-being has become a core focus area. While academic departments commonly institute activities like wellness days and resident retreats, these events do little to develop the individual physician and their abilities to deal with the rigors of daily life in a stressful career.

Materials and Methods: We developed a curriculum from a best-selling personal development book, *The Success Principles*, written for an audience outside of medicine that focuses on the individual's personal goals. Six monthly sessions were organized that drew interest from faculty and residents alike. Participants responded to a survey evaluating perceptions of their own success and the 5-item World Health Organization Well-Being Index (WHO-5) before starting the sessions and after the last session. A final survey will be done three months after completing the program.

Results: We saw a statistically significant ($F=1877$, $P=0.009$) improvement in the mean survey score between the pre program ($M=3.7$, 95% CI= 3.4 - 4) and post-program survey ($M=4.2$, 95% CI= 4 - 4.6). The significant improvements seen in the pre and post program scores were not seen at the 3 month follow up.

Conclusion: Residents and faculty developed personal definitions of success in terms of personal and career goals. This focus, and the book-club setting, fostered intimate conversations that helped define work-life balance and helped both residents and faculty take steps toward their visions of success. Additionally, the book club format proved useful in delivering non-clinical curriculum to our department.

3. Improving Providers' Attitudes and Knowledge of Lesbian, Gay, Bisexual, Transgender, Queer, Intersex, and Asexual and/or Ally (LGBTQIA+) Health

Background: LGBTQIA+ individuals are a rapidly growing segment of the population with unique health and healthcare needs. They frequently face significant health disparities, stigmatization, discrimination and bias in the healthcare setting and face barriers when accessing care. Provider lack of knowledge is one of the key barriers to culturally responsive and clinically competent care. Healthcare providers continue to receive little or no training to prepare them to work with this vulnerable population.

Materials and Methods: Pre- and post-intervention surveys were used for this quality improvement (QI) project. The intervention included two one-hour power point presentations delivered on the Zoom platform. The lectures focused on the description of different LGBTQIA+ identities, health disparities and their root causes, creating an inclusive environment through language and behavior, and population specific health issues. The QI project target population included third and fourth-year medical students (MS) and residents and faculty members from the various on-campus departments. Statistical analyses used the exact McNemar test to evaluate pre to post-intervention changes.

Results: A total of 24 participants were identified to have completed both the pre- and post-QI survey. 70.8% identified as females and 29.2% identified as males. 91.66% were residents, 4.16% were MS, and 4.16% were IM faculty. Comparing pre- and post QI results respectively, 37.5% vs 87.5% reported ability to describe the different LGBTQIA identities (p-value < 0.05), 25.0% vs 75.0% reported having adequate knowledge to address this population comfortably with the correct terminology (p-value < 0.05), 37.5% vs 91.7% reported being able to describe health disparities faced by the LGBTQIA populations (p-value < 0.05), and 20.8% vs 75.0% reported ability to provide competent health care (p-value < 0.05). Regardless of the intervention, participants had a positive attitude towards the LGBTQIA population with interest to learn about them, reported a lack of adequate education, and believed that they have ethical and professional responsibility to provide competent medical care to all patients regardless of gender identity, gender expression or sexual orientation.

Conclusion: LGBTQIA+ individuals face significant stigmatization and healthcare disparities. Healthcare professionals currently lack adequate knowledge and training in understanding this population and their healthcare needs. Healthcare professionals acknowledge this shortcoming and have high interest in learning more about this population. Education during medical school and residency is important to promoting LGBTQIA+ centered care.

4. Internal Medicine Resident's Wellness and Burnout Pre-Intervention Assessment

Background: Burnout among medical residents is a national concern. Our program's resident wellness committee developed a QI project to improve resident wellbeing, and prevent burnout. Plan- Do- Study- Act approach was used. The project goal was to improve variables related to resident wellbeing, measured by the annual ACGME survey, for parameters that are currently below the national average by the end of a 10-month period. A pre-intervention survey was applied to learn more about resident wellness needs.

Materials and Methods: A pre-intervention survey was applied to all IM Residents in December of 2021. Survey was uploaded, delivered, and data was collected online using Qualtrics. Completion took an average 6 minutes using a personal device (phone or computer). Categories included demographics, self-care, work satisfaction, well-being, burnout and resilience. Reports were exported into excel sheets. Proportions and central tendency measures were calculated.

Results: Survey was completed by 85% of IM residents, the majority between ages 31 to 35 years-old, of all 3 residency years. At least 62% had never had basic wellness checkups. Participants reported rarely or seldom doing self-care activities. Average work hours per week were 60 to 70 during active and 40 to 50 during non-active rotations. Majority agree that the department provides the resources and support to achieve personal goals. More than 30% feel burnout, physically, and emotionally exhausted, because of their work because of their work.

Conclusion: Findings resemble the national average. This data was used by GME Wellness Committee to develop an action plan for all residency programs in the Permian Basin.

5. Effect of Reflective Thinking Format of Note-Writing on the Clinical Decision Making of Third or Fourth-Year Medical Students: A Pilot Study

Background: Clinical Decision Making (CDM) errors are an important cause of morbidity and mortality in healthcare. Reflective thinking can help students develop CDM skills. This study investigated if incorporating Reflective Thinking Format (RTF) into history and physical documentation (H&P) templates improves student's CDM skills.

Materials and Methods: We developed RTF, a series of reflective questions, to aid in development of the H&P assessment and plan section. A randomized, crossover, interventional, in-person clinical simulation study was planned. For the pilot study, nine 3rd and 4th-year medical students from TTUHSC were recruited. Each student underwent two different clinical encounters; randomly assigned to use their format of choice (FOC) for one H&P and the RTF for the other. De-identified H&Ps were exported into an anonymized data sheet and reviewed by three expert clinicians for IDEAS-score and CDM-score. Time taken and search frequency for each note were also captured in this sheet.

Results: The mean CDM-scores were higher for RTF 8.67(SD 4.33) compared to 5.89(2.80) for FOC($p=0.11$). Mean IDEAS-score were also higher at 6.00(2.12) for RTF versus 5.11(1.36) for FOC($p=0.25$). Average time taken was expectedly higher for RTF 46.4(25.4) versus 31.2(13.5) for FOC($p=0.11$). Search frequencies were comparable for RTF 9.00(0.8836) and 8.44(10.9) for FOC($p=0.88$).

Conclusion: The response variables, CDM and IDEAS-score, showed positive but statistically insignificant effects for RTF. Interpreted within the context of a small sample size($n = 9$), the p -value is indicative of a potentially significant effect. This signals the need for a larger sample size to effectively determine the utility of RTF for student CDM.