

B1

Mary Valmont Ph.D.

Advisor(s): Marilyn Fraser M.D.

Co-author(s): Kavya Collingwood, Meagan Vanzie, Janelle Addison , Safiya Bell , Caden Charles , Sarai Noel , Alexander Villalba , Alany Marcellus , Jeemonda Richards , Roudjessie Charles , Taskin Khan , Kirabo Nanyanzi, Dong Zhen, Janille Williams , Mary Valmont, Marilyn Fraser

The association between race/ethnicity and the use of birth control among adolescents in the United States

Abstract:

Background: Birth control, including barrier and hormonal methods, significantly lowers the risk of teen pregnancies and sexually transmitted infections (STIs), with barrier methods also helping reduce STI transmission. Despite a dramatic decline in teen birth rates over recent decades, rates among minority groups remain higher due to disparities in access and education about contraception. Research into how race influences contraceptive use is essential for developing targeted public health strategies to address these disparities and further reduce teen pregnancy rates.

Methods: An analysis of the 2021 Youth Risk Behavior Survey (n=17,232) examined the relationship between race/ethnicity and birth control use among adolescents. Descriptive statistics summarized demographic data, and chi-square tests explored these associations.

Results: About 32% of adolescents were sexually active and 22% had intercourse for the first time at age 13 or younger. American Indian/Alaskan Natives (63.0%) and Blacks (55.0%) did not use condoms during their last sexual encounter compared to their White counterparts (48.0%), $\chi^2 = 20.49$, $p=0.009$. The use of birth control pills before adolescents' last sexual intercourse encounter was the lowest among Blacks (11.9%) and Hispanic/Latinos (15.1%) compared to White adolescents (26.3%), $\chi^2 = 51.28$, $p<0.001$.

Conclusion: The low rates of birth control pills and condom use, especially among Black adolescents, highlight potential barriers to accessing contraceptives. These findings emphasize the need for sexual education initiatives within schools, and community-based clinics.

B2

Mary Valmont Ph.D.

Advisor(s): Marilyn Fraser M.D.

Co-author(s): Alany Marcellus , Jeemonda Richards , Ibrahim Barry , Joanna Clarke, Fayonna Jean-Philippe, Mali Joseph, Robert King , Kavya Collingwood, Meagan Vanzie, Roudjessie Charles , Taskin Khan , Kirabo Nanyanzi, Dong Zhen, Janille Williams , Mary Valmont, Marilyn Fraser

Examining the Relationship between Marijuana Use and Participating in Physical Fights among Adolescents in the United States

Abstract:

Background: Marijuana use among adolescents has been linked to negative behavioral outcomes, such as aggression and physical violence. With the rising prevalence of marijuana consumption, particularly after legalization in some states, concerns about its impact on adolescent behavior have grown. This study explores the relationship between marijuana use and physical fighting among adolescents aged 12-19, focusing on altercations occurring on school grounds.

Methods: An analysis of the 2021 Youth Risk Behavior Survey (n=17,232) examined the relationship between marijuana use and physical fighting among adolescents. Descriptive statistics summarized demographic data, and chi-square tests explored these associations.

Results: Among adolescents who reported ever using marijuana, 32.7% were involved in a physical fight, compared to 13.2% of non-users ($\chi^2 = 523.8$, $p < 0.001$). Additionally, 14.2% of marijuana users fought on school property, compared to 4.6% of non-users ($\chi^2 = 219.7$, $p < 0.001$). Marijuana users were 3.2 times more likely to engage in physical fights (OR=3.2, $p < 0.001$) and 2.9 times more likely to fight on school grounds (OR=2.9, $p < 0.001$). Current users had even higher odds of involvement in fights (OR=3.7, $p < 0.001$).

Conclusion: The study found a significant association between marijuana use and increased physical fighting, particularly on school grounds. These findings highlight the need for targeted prevention and intervention programs addressing marijuana use and its potential to escalate aggressive behaviors in adolescents. Further research is necessary to establish causal relationships and understand the long-term effects on aggression.

B3

Sally Zhou B.S.

Advisor(s): Dmitry Kuzmin D.O

Co-author(s): Michael Goldberg, Matt Hanna, Matthew Becker, Juan Miguel Mejia Sierra, Dmitry Kuzmin

Intraoperative Blood Pressure Target in a High Risk Patient undergoing Superior Mesenteric Artery Embolectomy

Current guidelines recommend maintaining intraoperative mean arterial pressure (MAP) above 65 mmHg for non-cardiac surgery patients to ensure adequate end-organ perfusion. Studies show that low MAP during non-cardiac surgery is associated with acute kidney injury, myocardial injury, increased mortality, and overall morbidity. Here, we present the case of a 65 year old male found to have a long-segment occlusion of the superior mesenteric artery. The patient had severe comorbidities, including atrial fibrillation, coronary artery disease (CAD), heart failure with reduced ejection fraction (HFrEF) of 25%, cerebrovascular accident (CVA) with residual right-sided weakness, and peripheral artery disease complicated by acute limb ischemia. He also had poor medication compliance and inadequate follow-up with his primary care physician. A superior mesenteric artery embolectomy was planned and performed with a high blood pressure (BP) goal—maintaining systolic BP in the 170s—to stay within 20% of his baseline BP. Due to his complex comorbidities, anesthetic management was particularly challenging. His poor ejection fraction required a lower BP goal to avoid increase in myocardial oxygen demand, while his poorly managed CAD and PVD necessitated high BP targets to sustain end-organ perfusion. This case highlights the frequent clinical equipoise associated with blood pressure management and the importance of tailoring individualized anesthetic plans.

B4

Ginamarie Gioia B.S.

Advisor(s): Michael Mahla M.D.

Co-author(s): Dr. Michael Goldberg, Dr. Andrew Chuang

Propofol Frenzy Syndrome in a Pediatric Patient

Propofol Frenzy Syndrome in a Pediatric Patient

Introduction

Propofol frenzy syndrome is marked by acute, seizure-like activity, including tonic-clonic and involuntary jerking movements, typically of the hands and neck, during or after anesthesia. The pathophysiology and duration of these symptoms are poorly understood. The syndrome is thought to be more common in females and typically occurs in younger patients, although no large-scale studies exist to confirm incidence rates. Diagnosis is based on patient symptoms, propofol use during anesthesia, and exclusion of other neurological disorders.

Case

F.B., a 16-year-old female, presented with tenesmus, fever, and perirectal pain, diagnosed with a large pre-sacral fluid collection, suspected of being an abscess or neoplasm. She underwent an exploratory laparotomy, revealing a loculated mass with adhesions and 1L of purulent drainage, followed by antibiotic treatment in the PICU with no adverse events. F.B. underwent five additional incision and drainage procedures without complications.

In the 6th procedure, F.B. received monitored anesthesia care with a continuous infusion of 380mg propofol, 100 mcg fentanyl, and 1000mg acetaminophen. She remained hemodynamically stable. Upon arrival at the PACU, she exhibited rhythmic movement of her right upper extremity and appeared confused. The symptoms progressed to tonic jerking, suggestive of a seizure. F.B. was given 2mg of midazolam, partially alleviating symptoms, followed by 50mg ketamine, which stopped the jerking. She returned to baseline mentation.

EEG showed irregular motor movements without epileptic activity, and brain MRI, autoimmune, and anti-NMDA antibody tests were all negative. No other neurological or psychological causes were found.

Conclusion

Propofol frenzy syndrome is a rare but serious side effect of propofol. Limited research exists on its pathogenesis and incidence. Early detection and improved diagnostic criteria could improve patient outcomes.

B5

Jack Flanagan B.S.

Advisor(s): Mohammad Salam M.D.

Co-author(s): Jack Flanagan BS, Michael Goldberg MD, Samar Mikhaeil DO, Bilal Siddiqui MD, Rohan Sharma MD, Mohammad Salam MD

Lobectomy in a 58-day-old: A Case Report of Cystic Pulmonary Adenomatoid Malformation

Introduction: Cystic pulmonary adenomatoid malformation (CCAM) is a rare developmental cystic space occupying lung anomaly which has the potential for significant morbidity. CCAM is the most common congenital lung lesion and is associated with postnatal respiratory distress. Currently, standard of practice is surgical excision of the malformation within the first year of life.

Case: A male with a CCAM diagnosed on antenatal ultrasound at 21 weeks was born via vaginal delivery and required a three day stay in the neonatal intensive care unit for respiratory distress. Once stable, the patient was discharged and operative planning ensued. At 58-days-old the patient presented for open left lung lobectomy under general anesthesia. Care was taken to ensure the amount of functional lung tissue was adequate for inhaled anesthetics to be efficacious, low peak airway pressures were maintained to protect against barotrauma, and minimal intraoperative resuscitation was performed to maintain hemodynamic stability. The patient emerged from surgery with an uneventful course, was transported to the pediatric intensive care unit for observation, and discharged home after three days. Follow-up visits yielded a well healed surgical site and benign physical findings in an asymptomatic patient.

Discussion: Surgery is indicated for most CCAM within the first year of life, with data suggesting that earlier surgical treatment yields more favorable outcomes as it allows for more lung tissue development during a period of maximal growth. Resection is recommended even in asymptomatic patients due to the high likelihood of symptom evolution and potential for malignant transformation. CCAM raises important anesthetic considerations, given the presence of bronchopulmonary sequestration and ratio of healthy lung tissue to dysmorphic tissue. Though the clinical implications of CCAM are well understood, little is known about its etiology and merits further investigation.

B6

Ranjitha Vasa M.D.

Advisor(s): Ozgul Muneyyirci-Delale M.D.

Co-author(s): Maryam Choudhary, Natalia Catala, Lea Sarmiento, Amber Khemlani, Asta Kaba, Cleophina Raymond, Mareiz Gobran, Raquel Jimenez, Ozgul Muneyyirci-Delale, Dr. Mudar Dalloul

Spices, oils, and teas: A comprehensive review exploring impact on female fertility

Background

For generations, various ingredients have been incorporated into diets to improve health. While numerous studies have examined their effects on diseases, research on their impact on female fertility is limited. This review evaluates the relationship between specific spices, oils, and teas and female fertility.

Methods

A literature search was conducted using PubMed, Cochrane, Embase, and Google Scholar. Search terms targeted dietary items relevant to fertility. Of 15,909 initial articles, only 30 met inclusion criteria: English-language studies from January 2012–May 2024, including randomized controlled trials, case controls, cohorts, case series, case reports, systematic reviews, and meta-analyses. Studies before 2012, non-English, or non-relevant were excluded.

Results

Among the dietary items studied, 18.6% (11/59) of spices, 22.2% (4/18) of oils, and 6.7% (1/15) of teas were examined for effects on female fertility. Some spices negatively affected fertility in a dose-dependent manner, including mugwort, coriander, white wormwood, monosodium glutamate, and ginkgo biloba. Conversely, dong quai, clove, cinnamon, turmeric, sage, and aloe vera showed positive effects. Among oils, evening primrose oil, extra virgin olive oil, and sesame oil demonstrated benefits, while coconut oil showed a dose-dependent negative effect. Green tea had a beneficial impact on reproductive health.

Conclusion

Though human studies are limited, animal models suggest that some spices, oils, and teas may negatively affect female fertility by disrupting the hypothalamic-pituitary-gonadal axis or altering reproductive organ structure. Conversely, certain dietary items may enhance fertility. Awareness of consumption patterns is essential, as specific ingredients may either hinder or support reproductive health.

B7

Amber Khemlani

Advisor(s): Ketan Shevde

Co-author(s): Joshua Appelbaum, Emily Yang, Varsha Talanki, Joshua Singavarapu, Dr. Ketan Shevde

Identifying Causative Factors that Lead to Delays in OR Efficiency and Impact OR Utilization

Background: The purpose of this project is to address the operating room efficiency at SUNY Downstate. Operating room costs contribute significantly to the hospital's finances. Factors known to impact operating room efficiency include teams being unavailable, missing equipment, patient tardiness, operating room turnover time, and missing medical clearance.

Methods: The data was collected between 8/2024 to 10/2024 and was compared with previously collected data from 4/2023 - 6/2023. Data parameters collected included start and end time of surgical cases, factors that delayed start time, and the number of delayed and cancelled cases. Data collection involved communicating with the operating room staff to determine causes of delay.

Results: We found that the most significant factors leading to delays of cases were the surgery team being unavailable, operating room turnover, and patient tardiness. We also found that the operating rooms were being utilized significantly less in 2024 compared to the previously analyzed data from 2023.

Limitations: Limitations to this study include only a subset of the dataset being analyzed due to limitations with collection. Specifically, on certain dates, no operating room staff was available to discuss the causes of the delays. In addition, not all cases were reported with start and end times, making approximating the total operating room time for the day difficult.

Discussion: The results of this study can be used to increase efficient utilization of SUNY Downstate's operating rooms and specifically address the top causes of operating room delay.

B8

Joshua Appelbaum

Advisor(s): Ketan Shevde M.D.

Co-author(s): Emily Yang, Roy Li, Amber Khemlani, Zu Zheng

Prevalence of intra-operative hypotensive episodes at SUNY Downstate Medical Center: a retrospective observational study.

Authors: Emily Yang, Joshua Appelbaum, Roy Li, Amber Khemlani, Zu Jie Zheng, Ketan Shevde MD

Background: Intraoperative hypotension (IOH) is a key surgical quality measure, impacting patient safety and outcomes. IOH is linked to ischemia, organ dysfunction, and complications like myocardial infarction, stroke, and acute kidney injury. Repeated episodes increase perioperative mortality and long-term risks. Accurate measurement in hypertensive populations remains challenging. This study aims to gather the prevalence of IOH in the SUNY Downstate community while considering the population's high prevalence of hypertension.

Methods: This retrospective study analyzed surgical cases at SUNY Downstate (March–September 2023) using electronic medical records. IOH was defined as (1) MAP <20% below preoperative MAP or (2) MAP <65 mmHg. Exclusions: missing MAP data, age <18, emergent procedures, ASA status <3, or no IOH episodes. Data analysis was conducted using Excel.

Results: Of 3,751 patients, 2,410 were excluded—886 had no IOH episodes, 296 were under 18, 291 had emergency procedures, 216 had ASA <3, and 721 had missing data. Among 624 patients with IOH, 54% were hypertensive preoperatively. IOH affected 42% of eligible patients. Of these, 616 had MAP drops >20% (avg. 1.6 episodes, 51 min duration), and 59 had MAP <65 mmHg (1.2 episodes, 26 min duration). IOH cases: 89.2% African American, 6.3% White, 1.8% Asian, 2.7% undisclosed.

Conclusion: Most IOH patients were hypertensive preoperatively. The racial distribution reflects SUNY Downstate's demographics, limiting conclusions on disparities. Compared to studies showing 29%–94% IOH incidence, Downstate had a lower rate. IOH tracking is crucial for risk assessment and management. Findings suggest most IOH episodes occurred in hypertensive patients. Further research is needed to examine IOH incidence across ethnicities.

B9

Emily Dai B.S.

Advisor(s): Joseph Gallombardo M.D.

Co-author(s): Emily Dai, Michael Goldberg, John Gerges, Jack Flannagan, Idan Boussani, Matthew Becker, Joseph Gallombardo

Anesthetic Management of Aortic Hemiarch Replacement: A Case Report

Aortic hemiarch replacement is a surgical procedure aimed to address pathologies of the ascending aorta and the proximal aortic arch. The optimal cerebral perfusion technique for the procedure remains a subject of ongoing debate.

A 58-year male with a history of hypertension, bicuspid aortic valve, and pulmonary embolism underwent elective aortic hemiarch replacement due to a 5.1 cm ascending aortic aneurysm with moderate aortic regurgitation extending into the proximal aortic arch. Preoperative transthoracic echocardiography (TTE) revealed preserved LV function and moderate aortic insufficiency. Anesthetic management requires hemodynamic stability, coagulation control, and organ protection. Pre-operative management included standard ASA monitoring, arterial and central venous access, pulmonary artery catheter placement, and bilateral cerebral oximetry. Anesthesia was induced with propofol, fentanyl, and rocuronium, then maintained with isoflurane. Intraoperatively, TTE guided continuous hemodynamic monitoring, and cardiopulmonary bypass was initiated with moderate hypothermia (28°C). Unilateral antegrade cerebral perfusion (ACP) via the innominate artery provided continuous cerebral perfusion to the right hemisphere with collateral flow to the left hemisphere via the Circle of Willis during the 25-minute circulatory arrest. Cerebral oximetry values remained stable throughout. An estimated 1,200mL of blood loss was managed with cell salvage, transfusion of 2 units of PRBCs, 2 units of FFP, and cryoprecipitate for coagulopathy. The patient was transferred to the ICU on low-dose vasopressors, extubated after 12 hours with no neurological deficits, and discharged on day 7.

This case demonstrates that unilateral ACP via the innominate artery, combined with careful intraoperative monitoring and coordinated multidisciplinary care, provided reliable cerebral protection during circulatory arrest and should be considered for cases involving aortic arch repair.

B10

John Lee M.S.

Advisor(s): Scott Holmes Ph.D.

Co-author(s): Laura Simons, David Zurakowski, Michael O'Brien, Christine Sieberg, David Borsook, Scott Holmes

A longitudinal analysis of post-traumatic headache recovery: Use of cross sectional structural brain analysis and cosine similarity to evaluate brain metric stability

Rationale:

Post traumatic headache (PTH) is a common, debilitating clinical consequence of traumatic brain injury (TBI) which can become chronic in certain patients. The identification and treatment of this condition is challenging due to the lack of knowledge surrounding the exact physiological processes that cause PTH and the difficulty that comes with understanding why symptoms persist in some and not others. This longitudinal investigation aimed to understand structural brain changes in the one-year post-injury period in persons with post-traumatic headache.

Methods:

The sample included 15 acutely resolved (within 3 months), 11 persistent (headaches persisting beyond 3 months) and 18 healthy control participants. Behavioral data and psychological questionnaires were extracted and analyzed.

Results/Discussion:

For the right hemisphere, times 1 and 4 revealed the precentral gyrus to be the region with the most frequent group differences in cortical thickness changes. Cosine similarity was calculated for each of the brain regions to understand metric stability that was compared between time points. Correlational analysis of demographic, behavioral, and brain imaging data was completed for Time 1 to identify relationships between them. We show differences in persons with post-traumatic headache based on symptom trajectory that occurred both cross-sectionally, and between time points. Stability of brain regions should be incorporated in future longitudinal research.

Significance:

The differences in cortical thickness amongst the different groups suggest an organic basis to post-traumatic headache, which is a step towards an objective way to accurately diagnose and treat the condition.

B11

Tasmia Promi BA

Advisor(s): Jason Lazar M.D., MPH

Co-author(s):

Relation between Blood Pressure Indices and Nocturia Severity in Adolescents

Nocturia, defined as waking to void during sleep hours, is common in adolescents and may indicate underlying cardiovascular risk. Our group found that nocturia is strongly associated with hypertension in adolescents. It is widely accepted that elevated diastolic blood pressure (DBP) is more strongly associated with cardiovascular risk in young adults. Previous studies have linked nocturia to systolic blood pressure (SBP) elevation in adults. It remains unclear which blood pressure (BP) indices are most strongly correlated with nocturia severity in adolescents. This study addresses this issue while also characterizing the association between nocturia and BP elevation. We recruited 100 adolescents, ages 10–18 years with mean age of 14 years, from pediatric clinics. Peripheral and central BP, using non-invasive applanation tonometry, were obtained. Nocturnal-only voiding diaries were collected. Spearman's rank correlation coefficient was used to assess the relationship between BP and nocturia indices. Amongst all subjects, 45 reported nocturia. Peripheral SBP and central BP showed moderate positive correlations with nocturia frequency (highest SBP of both arms $r = 0.331$, $p = 0.001$; central SBP $r = 0.267$, $p = 0.007$). The highest SBP was significantly correlated with nocturnal urine volume (NUV) ($r = 0.31$, $p = 0.001$) and nocturnal urine production (NUP) ($r = 0.32$, $p = 0.001$). Highest SBP of both arms did not correlate with maximum voided volume (MVV) ($r = 0.11$, $p = 0.25$). DBP showed no significant correlation. After adjusting for BMI and sex, SBP remained a significant predictor of nocturia severity. These findings suggest that SBP is strongly associated with nocturia frequency, NUV, NUP, but not MVV. Therefore, higher SBP is associated with nocturia severity and increased NUP but not lower bladder capacity.

B12

Alana Kosches B.A.

Advisor(s): Jason Lazar M.D., MPH

Co-author(s): Louis Saliccioli, MD, Thomas Monaghan, MD, PhD, Jeffrey Weiss, MD, PhD

Is Nocturia Associated with an Abnormal Valsalva Maneuver Blood Pressure Response?

Background

Nocturia is a urological symptom increasingly recognized as a manifestation of cardiovascular disorders such as hypertension, vascular disease and heart failure. The mechanisms underpinning these associations are not well understood. We postulated fluid overload as a unifying hypothesis and used the Valsalva maneuver to assess volume status by measuring changes in arterial blood pressure (BP) during forced expiration across a closed glottis to examine potential relations between nocturia and blunted BP responses during the Valsalva maneuver.

Methods

We prospectively enrolled 100 patients from Downstate's outpatient cardiology clinics. Subjects performed the Valsalva maneuver, and associated BP changes were analyzed. Subjects then completed a single nighttime only frequency volume chart of measured urine volumes. Urinary indices included #voids, nocturnal urinary production rate (NUP, ml/hour), and the modified nocturia index (MNI), calculated as nocturnal urine volume divided by the maximum voided volume, which reflects the balance between urine production and bladder storage. Pulse oximetry waveforms were continuously recorded during Valsalva, and the pulse amplitude ratio (PAR) was calculated from systolic (S)BP during Valsalva phase 2 divided by baseline SBP.

Results

Among 100 patients, mean age 67 years, 73% female, 45% had edema. For the entire group, blunted PAR was associated with the presence of edema, BMI, and higher SBP, but not with #voids, NUP, or MNI. In subjects without edema, the PAR was correlated with MNI ($r=.37$, $p=.013$), NUP ($r=.34$, $p=.02$), and trend towards #voids ($r=.28$, $p=.08$). On multivariate analysis, PAR was an independent predictor of NUP ($p=.026$).

Conclusion

Nocturia is associated with fluid overload, as evidenced by the presence of edema or, in patients without obvious edema, a blunted Valsalva response. A nocturia history may be a simple inexpensive screening tool for early detection of mild degrees of fluid overload.

B13

Moshe Weber

Advisor(s): Elliot Koschitzki DDS

Co-author(s):

Orbital Complications of Dental Implants

Dental implants are a common procedure to create support for prosthetic teeth. Implants are typically placed in the maxilla; however, anchors in the zygomatic bone can be used for cases of maxillary atrophy. Due to their location, these zygomatic dental implants have increased risk for complications to the eye and orbit. Current research of the topic is limited to case reports and incidental discussion, with no known review article dedicated to the topic. This systematic review looked at ophthalmological complications of dental implants to familiarize ophthalmologists with the potential complications and their treatment options. The review was conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Various searches using PubMed, Elsevier, and Google Scholar were used to search for articles using search terms including 'dental,' 'implant,' 'complication,' 'eye,' and 'orbit.' Exclusion criteria included articles that were unavailable in English or written before 1980. 26 articles were included in this review: eleven case reports, one case series, nine cohort studies, one randomized controlled trial, and four review articles. Most orbital complications resulted from zygomatic implants. The most common of which was infraorbital paresthesia, followed by intraoperative orbital penetration. Other complications of zygomatic implants included implants placed into the orbit, orbital hematomas, extraocular muscle damage, diplopia, subconjunctival hemorrhage, periorbital fistulae, infraorbital rim infections, and orbital emphysema. Direct orbital complications of maxillary implants included paresthesia, and implant migration into the orbit. Of 43 cases, which included outcomes, 11 patients required further procedures, and five patients had irreversible damage. It is important for both oral and maxillofacial surgeons and ophthalmologists to recognize these complications for proper coordination of care and treatment.

B14

Alexia Collins B.S.

Advisor(s): Sharon Glick M.D.,M.S.

Co-author(s): Elisha M. Myers, BS, Kristina M. Derrick, MD, ScM, Sharon A. Glick, MD, MS

Real world case series: Filsuvez efficacy in 2 patients with Junctional Epidermolysis Bullosa

Junctional Epidermolysis Bullosa (JEB) is a rare and severe genetic skin disorder characterized by fragile skin that forms blisters in the lamina lucida with minimal trauma. Filsuvez (birch triterpenes gel), is FDA-approved for JEB and dystrophic EB (DEB), and it is the only FDA-approved option for JEB. Data on Filsuvez efficacy in JEB are limited compared to DEB because only 26/223 subjects in the pivotal trial had JEB. JEB subgroup analysis showed no significant difference in proportion of patients achieving first complete wound closure with 45 days or 90 days for Filsuvez versus placebo, showing the challenge of interpreting subgroup data with small sample sizes.

We report two female pediatric patients under 21-years-old with refractory JEB and LAMB3 gene mutations treated with Filsuvez. They showed significant improvements in wound healing, pain reduction, and overall quality of life. Notably, Filsuvez allowed for less frequent dressing changes and analgesic dosing, reducing the overall treatment burden for patients and caregivers. The application of Filsuvez was well-tolerated, with no serious adverse effects observed. One patient even used the medication during an active purulent cellulitis of a small chronic wound with no reported complications, despite FDA-label directions to discontinue Filsuvez until a wound infection resolves.

These cases demonstrate real-world efficacy and safety of Filsuvez in JEB. Further studies are warranted to confirm these findings, explore the long-term efficacy and safety of Filsuvez in managing JEB, and work with insurance providers to ensure access to this treatment which remains the only approved therapy.

B15

Margaret Kabakova B.S.

Advisor(s): Jared Jagdeo M.D.,M.S.

Co-author(s): Jennifer Wang, Julia Stolyar, Evan Austin, Jared Jagdeo

Visible blue light does not induce DNA damage in human dermal fibroblasts

Photobiomodulation (PBM) is a non-invasive treatment modality that utilizes light to influence cellular activity. PBM has applications in various dermatological conditions. As blue light (BL, 400-500 nm) therapy gains popularity, concerns about its potential to induce DNA damage remain. This study investigates the effects of fluorescent BL ($417 \text{ nm} \pm 5 \text{ nm}$) on human dermal fibroblast DNA, specifically examining the formation of cyclobutane pyrimidine dimers (CPD) and 6-4 photoproducts (6-4PPs) at fluences of 10 J/cm^2 , 30 J/cm^2 , and 45 J/cm^2 . The measurement techniques employed to perform these analyses were ELISA tests and dot blot assays. Our results demonstrate that BL exposure does not induce detectable DNA damage, in contrast to the well-documented effects of ultraviolet light, which is known to cause such damage. These findings support the safety of fluorescent BL therapy and align with prior research on LED-red and LED-near-infrared wavelengths. Continued clinical investigation of the effects of BL on skin will add to the understanding of the safety profile.

B16

Ugwumsinachi Nwaubani M.S.

Advisor(s): Sharon Glick M.D.

Co-author(s):

Unveiling the Influence of Artificial Intelligence on Informational and Diagnostic Proficiency in Dermatology

Introduction: Artificial Intelligence (AI) is a discipline of computer science aimed at automating intelligent tasks. Machine learning, a branch of AI, utilizes data-based techniques to detect regularities and make predictions. Within dermatology, there is a growing interest in exploring the capabilities of machine learning to accurately classify skin lesions. This study aims to scrutinize the application of AI in dermatology, specifically assessing its effectiveness in diverse skin types as well as detecting areas for future research and improvement.

Methods: The authors analyzed posts via PubMed; keyword searches included: (Artificial Intelligence dermatology). 1434 articles were identified. 1273 articles were excluded due to being out of scope and/or being reviews. 161 articles were found to be relevant to artificial intelligence and dermatology, and 16 were included in the review.

Results: AI demonstrated diagnostic accuracy comparable to dermatologists in four studies, while two studies reported AI outperformed dermatologists. However, AI models consistently underperformed on diagnosing malignancies on darker skin tones, with average specificity and sensitivity ratings being lower than those of lighter skin tones in comparison. Models trained with diverse datasets showed improved performance, particularly through the use of image-to-image translation techniques. The informational capabilities of AI displays a promising potential in clinical practice; however, limitations such as the lack of real-time data and the non-representative nature of online forums accentuate the necessity for further development before wider adoption in healthcare environments.

Conclusion: AI has the potential to enhance dermatology diagnostics, but diverse and inclusive datasets are essential for ensuring equitable diagnostic accuracy. AI should be adopted into dermatology cautiously, recognizing its current limitations and the need for ongoing validation and improvement.

B17

Nicole Schiraldi B.S.

Advisor(s): David Ciocon M.D.

Co-author(s):

Single-Center Practices of Non-Ablative Fractional Resurfacing Lasers for Scarring After Mohs Micrographic Surgery

Non-ablative fractional resurfacing lasers (NAFLs) promote scar remodeling by inducing thermal damage through fractional photothermolysis while preserving the epidermis. Recent studies support NAFLs as a safe and effective post-Mohs micrographic surgery (MMS) scar revision method, but small sample sizes and incomplete data limit practical guidance. This single-center retrospective study analyzed NAFL use for post-MMS scarring at Montefiore Medical Center, evaluating treatment settings and sessions for 1540-nm erbium:glass, 1550-nm erbium:glass, and 1927-nm thulium lasers by anatomical location. Of 788 charts reviewed, 107 patients met inclusion criteria, contributing 115 scars.

The cohort's mean age was 65, with 58% female and 91% Fitzpatrick skin types I-III. Scars were most frequently located on the nose (55%), cheek (20%), and forehead (10%). Most patients (79%) received at least one 1550-nm laser treatment, while 20% and 10% underwent 1540-nm and 1927-nm treatments, respectively. Treatment settings included spot tip size, fluence, pulse duration, passes, and treatment level, stratified by location. For the 1540-nm laser, the average final treatment settings across all anatomical locations were a 10 mm spot tip, 60 mJ/cm² fluence, 15 ms pulse duration, and 3 passes. For the 1550-nm laser, the average final treatment settings across all anatomical locations were a 15 mm spot tip, 60 mJ/cm² fluence, 6 treatment level, and 5 passes. For the 1927-nm laser, the average final treatment settings across all anatomical locations were a 15 mm spot tip, 5 mJ/cm² fluence, 6 treatment level, and 4 passes. Mean treatment sessions ranged from 1-8 (1540-nm), 1-13 (1550-nm), and 1-3 (1927-nm).

This study is among the first to provide detailed NAFL settings for post-MMS scars with a robust sample size. Findings from a high-volume medical center offer practical insights for clinicians utilizing NAFLs for scar revision following Mohs surgery.

B18

Domenick Raphael B.S.

Advisor(s): Utpal Pajvani Ph.D.,M.D.

Co-author(s): Jonathan Steinman, MD, PhD

Opposing Roles of Notch1 and Notch2 in Metabolic Dysfunction-Associated Steatohepatitis

Background: With the rising prevalence of obesity, understanding the molecular pathogenesis of obesity-associated metabolic disease is critical in order to better stratify risk as well as to devise treatment approaches. Metabolic dysfunction-associated steatotic liver disease (MASLD) is an obesity-associated disease that is now the most common chronic liver disease and its more progressive form, Metabolic dysfunction-associated steatohepatitis (MASH), is frequently encountered in patients with obesity seen by endocrinologists. Reactivation of the quiescent Notch pathway has been identified as a driver of disease progression and to the critical outcome of fibrosis in MASH, however it is not clear which nodes within the Notch signaling cascade cause this deleterious effect.

Methods: Mice exposed to MASH-inducing diets were treated with antisense oligonucleotides (ASO) directed at Notch1 or Notch2 and analyzed after sacrifice for Notch protein and activity, as well as key readouts of MASH: hepatocyte steatosis and injury, and liver inflammation and fibrosis.

Results: Notch2 ASO treatment decreased Notch pathway activity and fibrosis while Notch1 ASO treatment caused unexpected increased hepatocyte Notch2 protein, leading to higher Notch pathway activity, liver injury, inflammation, and fibrosis.

Conclusions: Our data highlight the critical role of Notch2 activity in MASH pathogenesis and suggest post-translational level cross-regulation by Notch1 of Notch2. These findings suggest unexpected regulatory circuits in the Notch pathway that may dampen the maladaptive response to obesity and caloric excess intrinsic to MASH.

B19

Abiha Kazmi B.A.

Advisor(s): Marco Stillo MPH

Co-author(s): Melissa D'Alessio M.S., Sameah Algharazi B.S., Teena Roy B.S.

Lifestyle Behaviors among Adolescents: assessing the impact of COVID-19 using the Youth Risk Behavior Survey 2019 and 2023

Introduction: Disease prevention through healthy lifestyle behavior promotion continues to be an area of public health focus in the adolescent population. The coronavirus pandemic (COVID-19) affected individual health behaviors in many ways, presenting challenges to continuing health-preserving behaviors. Adolescents were particularly affected by the pandemic, as lockdowns and social distancing measures limited in person participation in school and afterschool activities. We aim to examine changes in diet and physical activity prior to and after the pandemic to identify how youth health behaviors have been affected by the pandemic.

Methods: The Centers for Disease Control and Prevention's Youth Risk Behavior Survey (YRBS) is a national, biannual survey used to assess adolescent lifestyle behaviors. The 2019 and 2023 YRBS datasets were used to compare adolescent diet and physical activity behaviors prior to and after the COVID-19 pandemic. Our cohort (n=33,780) included high school students from 9-12th grade from 180 schools across the United States. Chi-square analysis was performed to compare pre- and post-pandemic activity levels, involvement in sports, and fruit and soda consumption.

Results: There is a statistically significant difference in fruit consumption ($p=0.005$), soda consumption ($p<0.001$), daily physical activity ($p<0.001$), attendance of physical education class ($p<0.001$) and participation in sports ($p<0.001$) between pre-pandemic and post-pandemic.

Conclusions: Our work identifies the current state of adolescent health behaviors as compared to pre-pandemic levels. The results provide opportunities for adolescent re-engagement in healthy behaviors through public health strategies and initiatives.

B20

Nicole Onatsko

Advisor(s): Mohan Preet M.D.

Co-author(s): Imad Karam, Aye Thida, Hagar Attia , Dedipya Bhamidipati , Rachelle Hamadi, Raavi Gupta

Pleural Marginal Zone Lymphoma Masquerading as Metastatic Adenocarcinoma of the Lung

Extranodal marginal zone lymphoma (EMZL) is a rare subtype of non-Hodgkin's lymphoma characterized by the malignant transformation of lymphoid tissue at sites affected by chronic inflammation. Pleural marginal zone lymphoma (PMZL) is an infrequent manifestation of this condition. We report a case of PMZL co-occurring with primary lung adenocarcinoma.

This case involves an 88-year-old female patient who presented to the emergency department with recurrent pleural effusions and symptoms suggestive of decompensated heart failure. Thoracentesis of the effusion revealed an aspergillus population. Throughout her hospitalization, the patient underwent multiple evaluations for malignancy; however, no conclusive findings emerged. Ultimately, PMZL and poorly differentiated primary adenocarcinoma of the lung were confirmed through random biopsies of the parietal pleura and lung opacities, respectively. Unfortunately, due to deconditioning from multiple hospitalizations and a pulmonary embolism, the patient chose comfort measures and subsequently passed away.

Diagnosing PMZL can be challenging due to the absence of identifiable nodules. Reported cases have similarly required extensive investigations to reach a final diagnosis. While a direct correlation between chronic inflammation, frequent infectious pathogens, and the development of PMZL has yet to be established, a known association exists between EMZL and pathogens such as *Helicobacter pylori* in gastric involvement and *Chlamydia psittaci* in ocular adnexa.

This report highlights the difficulties in obtaining a diagnosis for PMZL and examines the various mechanisms that may have contributed to this unusual finding. Closer inspection of the few existing case reports, as well as the patient's own medical history, reveals that chronic inflammation from heart failure and possibly aspergillosis may have fostered the right conditions for this rare development.

B21

Madeline Fudala B.A.

Advisor(s): Mohan Preet M.D.

Co-author(s): Imad Karam, Aye Thida, Imran Khan, Rachelle Hamadi, Natasha Macapagal-Brown, Raavi Gupta, Mohan Preet

Rare Case of Primary Bone Lymphoma

Primary bone lymphoma (PBL) is a rare entity defined as a lymphoid neoplasm of bone that occurs in the bone without involvement of lymph nodes or other extranodal sites. In this report, we present a case of an elderly female with PBL who presented with regional lymphadenopathy and cutaneous lesions mimicking the primary cutaneous diffuse B cell lymphoma (PCDBCL), leg type.

This review describes the case of a 73-year-old female with primary bone lymphoma who presented with cutaneous lesions and regional lymphadenopathy. She was initially diagnosed with Paget's disease of bone but ultimately presented to the emergency room with a pathologic fracture of the left tibia and painful overlying cutaneous lesions. Imaging studies, including X-ray and computed tomography (CT) scans, along with a tibial biopsy, revealed findings consistent with PBL, characterized by large lymphoid cells that were positive for CD10, CD20, and Bcl6, with a high Ki-67 index. The diagnosis was confirmed despite the atypical cutaneous involvement. Due to her age, low-performance status, and extranodal disease, the patient was classified as high-intermediate risk according to the NCCN-IPI criteria. The presence of extranodal involvement also placed her at intermediate risk for central nervous system (CNS) disease.

The clinical presentation of PBLs is often nonspecific, and diagnostic criteria noted in the literature vary, making for a difficult diagnosis in clinical practice. To our knowledge, this patient is the first documented case of PBL with concurrent cutaneous manifestations and regional lymph node involvement.

This case report and literature review investigate the possibility of PBLs presenting with lesions extending beyond the initial area of bony involvement.

B22

James Noyes B.S.

Advisor(s): Mohammad Zaidi M.D.

Co-author(s): Elliot Paimany, Michael Kozlov, Mohammad Shah

A Bibliometric Analysis of the Top 100 Most-Cited Papers On Slipped Capital Femoral Epiphyses (SCFE)

Introduction:

Slipped capital femoral epiphysis (SCFE) is a common adolescent hip disorder characterized by the displacement of the femoral head due to an unstable growth plate. As SCFE remains one of the leading hip disorders in this age group, understanding its risk factors, pathology, and treatment is crucial for effective patient care. We conducted a bibliometric analysis of the top 100 most-cited articles (T100) in the field to highlight the most influential research on SCFE.

Methods:

Using the Web of Science Core Collection, we searched for articles published between 1970 to 2024 using the search terms “Slipped capital femoral epiphysis OR Slipped upper femoral epiphysis OR coxa vara adolescentium”. From the results of our search, we identified those articles relevant to SCFE and selected the T100 most cited articles. A bibliometric analysis was performed using data from the articles regarding authorship, publication year, citation number, journal, country and institution, and study type. Bibliometric analysis and visualization was performed using the Bibliometrix R package and VOSviewer.

Results:

Our search yielded 1568 results. T100 articles were published between 1970- 2015 in 14 countries, by 119 institutions, and in 13 journals. The USA was the most productive country and Journal of Pediatric Orthopedics published the most articles [Figure 1]. The mean number of citations per article was 93.37. The most common study category was observational. Some of the most common topics in our keyword co-occurrence visualization included SCFE, avascular necrosis, and femoroacetabular impingement [Figure 2].

Conclusion:

Bibliometric analyses can aid academic providers by encapsulating a wide body of research surrounding a diagnosis and reporting it succinctly. In performing this research, we hope that our findings can be a useful starting point for any researcher looking to widen the body of knowledge we currently have on SCFE.

B23

Daniel Kamyab MPH

Advisor(s): Satit Cheerasarn M.D.

Co-author(s): Daniel Kamyab, Michael Goldberg, Theodoro Beck Neto, Mauren Frazon Carbonar, Rohan Sharma, Sittha Cheerasarn, Satit Cheerasarn

Case Report: Discrepancies in Pneumothorax Detection in a 61-Year-Old Patient with Traumatic Chest Injuries Following Erector Spinae Plane Block

A 61-year-old patient was admitted to the hospital with possible pulmonary contusion and multiple rib fractures following a fall and assault. Initial CT scan of the chest showed left-sided pneumothorax and rib fractures. A repeat chest X-ray on day 2 did not identify a pneumothorax, and an ultrasound-guided erector spinae plane block was performed for pain management. The erector spinae block was performed using ultrasound guidance at the T5 level with an injection of 20 mLs of bupivacaine and repeated bilaterally. Following the procedure, a subsequent repeat chest x-ray showed a small left apical pneumothorax and was later determined to be consistent with the initial CT. This case highlights the inherent limitations of various imaging modalities and the imprecision of imaging-based diagnoses in traumatic chest injuries. Anesthesiologists should also consider bedside ultrasound exams, considering its often superior sensitivity to x-ray, to determine if the patient is a good candidate for regional blocks, especially in the case of conflicting imaging reads.

B24

Aaron Lavi B.S.

Advisor(s):

Co-author(s):

Evaluation of Postoperative Complications, Length of Stay, and Discharge Disposition Following Single-Level Anterior Lumbar Interbody Fusion in Elderly and Octogenarian Patients

Purpose: This study aims to evaluate postoperative complications, length of stay (LOS), and discharge disposition

following ALIF across different age groups.

Methods: A total of 92,800 weighted cases of patients aged 50 and older who underwent single-level ALIF in the

National Inpatient Sample (NIS) from 2016 to 2020. Patients were stratified into age cohorts (50-64, 65-79, 80+).

Exclusions were made for non-elective cases and missing data on key variables. Primary outcomes included postoperative complications (anemia, DVT, myocardial infarction, stroke, acute kidney injury, sepsis, anesthesia-

related complications), LOS, and discharge disposition. Statistical analyses were conducted using chi-square tests,

with a Bonferroni correction applied, and a level of statistical significance set at 0.005.

Results: The study identified significant variations in outcomes across age groups. The mean age differed significantly ($P < 0.001$). Older patients had higher rates of comorbidities and complications, with acute post-

hemorrhagic anemia being most prevalent in the 65-79 group (16.78%) and sepsis more common in the 80+ group

(0.90%). The LOS increased with age ($P < 0.001$), and total admission charges were highest in the 65-79 age group

($P = 0.004$). Routine discharge rates decreased significantly with age, while non-routine discharges increased ($P <$

0.001).

Conclusion: Age significantly influences postoperative outcomes following ALIF. Patients aged 65 and older are at

increased risk for various complications, longer hospital stays, and non-routine discharges. These findings highlight

the need for tailored perioperative care and robust discharge planning to improve outcomes for elderly patients

undergoing ALIF.

B25

Lucy Wei B.S.

Advisor(s): David Otterburn M.D.

Co-author(s):

Impact of Topical Tacrolimus and DMSO on Ischemic Flaps: A Gross and Histological Study in a Rodent Model

Purpose: Flap necrosis is a common surgical complication. Our prior studies in rodent models have shown that topical tacrolimus significantly improves ischemic flap survival. Topical dimethyl sulfoxide (DMSO) has recently been highlighted for its potential to reduce ischemia in mastectomy flap patients. This study aims to directly compare the efficacy of topical tacrolimus versus DMSO in the treatment of ischemic flaps. **Methods:** A 3 × 10-cm cranially based dorsal skin flap was raised and reinset on 24 Sprague Dawley rats. Rats were randomized to the tacrolimus or DMSO group, 0.2 g of either topical was applied after flap surgery and then twice daily. On postoperative day 7, rats were sacrificed, and two blinded reviewers marked each flap for areas of healthy, reversible ischemic and necrotic tissue. Biopsies from six rats (three per group) were stained with H&E, and analyzed by a blinded dermatopathologist.

Results: Average area and percentages of healthy, ischemic, and necrotic tissue in the tacrolimus group were 20.80cm (64.89%), 5.02 cm (15.93%) and 6.15cm (19.27%) respectively, versus 15.37cm (51.82%), 4.86cm (16.27%) and 9.53cm (32.71%) in the DMSO group. The tacrolimus group had a significantly greater area of healthy tissue compared to the DMSO group ($p=0.026$), and a lower percentage of necrotic tissue ($p=0.043$). Histological analysis showed that the tacrolimus group had a higher density of viable microvessels per mm² in reversible areas and demonstrated increased neovascularization and granulation tissue formation compared to the DMSO group.

Conclusions: Topical tacrolimus significantly increased healthy tissue and reduced necrosis compared to DMSO, with histology showing greater microvessel density and neovascularization. This study continues to reinforce that topical tacrolimus leads to improved outcomes in postoperative ischemic flaps.

B26

Ezanna Mesfin B.S.

Advisor(s): Inci Dersu M.D.

Co-author(s):

Evaluating ChatGPT-4o's Reasoning in Ocular Injury Triage Using NEISS Data

This study evaluates ChatGPT-4o's reasoning process and effectiveness in triaging ocular injury cases by classifying them as emergent, urgent, or routine using data from the National Electronic Injury Surveillance System (NEISS). The goal is to analyze the reasoning types used by the model and their accuracies to enhance AI-assisted triage systems. We analyzed 2,145 ocular injury cases randomly sampled from the NEISS database, categorized into three triage levels: emergent, urgent, and routine. ChatGPT-4o was tasked to assign triage levels, recommend interventions, and provide reasoning for each decision. The model's reasoning was categorized into four types: 1) "Blunt trauma may cause delayed complications like retinal detachment," 2) "Chemical injuries can cause severe ocular damage and require immediate attention," 3) "Foreign body cases can cause vision-threatening complications if not treated urgently," and 4) "The injury appears non-urgent based on provided details." We evaluated the frequency and accuracy of each reasoning type and analyzed their association with triage categories. ChatGPT-4o predominantly used the reasoning "The injury appears non-urgent," in 1,395 cases with an accuracy of 51.1%. The "Foreign body" reasoning was used in 741 cases with a 76.7% accuracy rate, effectively identifying emergent cases but causing errors in urgent cases. The "Chemical injuries" reasoning achieved 100% accuracy but was underutilized, appearing in only three cases. The "Blunt trauma" reasoning appeared six times with a 50% accuracy rate. Overall, ChatGPT-4o demonstrated a 60% accuracy in triage classification, showing a bias toward routine classifications and underrepresentation of urgent cases. ChatGPT-4o shows potential for triaging ocular injuries, especially in identifying emergent cases. However, it struggles with nuanced reasoning for urgent classifications. Targeted retraining and data balancing could improve its reliability in clinical settings.

B27

Ethan Abizadeh B.A.

Advisor(s): John Laudi M.D.

Co-author(s):

Analyzing the Research Publications of Successful Ophthalmology Residency Matches in 2024: Trends, Impact, and Outcomes

Objective

To analyze the quantity and quality of research publications of medical students who matched into the top 25 ophthalmology programs in the 2024 cycle and compare these results to previous match cycles.

Participants

Study participants included 147 matriculating ophthalmology residents attending the top 25 programs as determined by Doximity.

Methods

This study used the Doximity Residency Navigator website to determine which programs were ranked in the top 25 in the country. Several websites were used to determine which students matched at the top 25 residencies. Once these students were identified, their research publications were collected via Pubmed and analyzed through various criteria. This data was then compared to that of previous ophthalmology match cycles.

Main Outcome Measures

The total number of publications were retrieved for each student; Publication-specific data such as journal name, authorship rank, date of publication, relation to ophthalmology (Yes/No), study type, h-5 index score, and citation count were obtained for each publication.

Results

The mean number of publications was 6.79 ± 7.65 , median = 5 and the most frequent number of publications was 3 (N = 24). The mean number of first-author publications was ($M = 2.35 \pm 2.91$) while second author was ($M = 1.42 \pm 1.72$), and third author was ($M = 0.92 \pm 1.30$). A two-tailed independent samples t-test showed no significant difference in total publications between students entering programs ranked in the top 10 (N = 66) ($M = 8.20 \pm 9.97$) vs students entering programs ranked from 11-25 (N = 81) ($M = 5.74 \pm 4.96$), $t(145) = 1.94$, $p = 0.054$, Cohen's d estimate = 0.323. There was a significant increase in publications compared to 2021 ($M = 2.7 [2] \pm 3.1$) ($p < 0.01$) and 2022 ($M = 3.04 [3] \pm 0.35$) ($p = 0.018$).

Conclusion

Within matched applicants of the top 25 ophthalmology programs, there has been a significant increase in the number of research publications compared to that of the last 3 years.

B28

Nicholas Stratigakis B.S.

Advisor(s): Ilya Leskov M.D.

Co-author(s):

Use of Optical Coherence Tomography Angiography in Hypertensive Patients of African and Afro-Caribbean Descent: A Systematic Review

Systemic hypertension poses significant risks for ophthalmologic pathologies through its impact on microvasculature. Optical Coherence Tomography-Angiography (OCT-A) has emerged in recent years as a noninvasive tool capable of detecting microvascular abnormalities associated with hypertension, offering potential for early diagnosis and management. Despite extensive research on OCT-A's applications, there seems to be a critical gap in its use for hypertensive individuals of African descent, a population with disproportionately high prevalence and severity of microvascular disease. This study aims to address this health equity gap by surveying the existing research for such studies.

A systematic literature search was conducted across PubMed, Scopus and Web of Science using keywords related to OCT-A and hypertension. Three blinded reviewers assessed eligibility of studies and performed data extraction. Data on study design, OCT-A parameters, and participant demographics were extracted and analyzed.

Out of 1,412 identified reports, 930 were screened by title and abstract after duplicate removal. Of these, 48 articles were further assessed for eligibility via full-text review and 29 met the criteria for qualitative analysis. Two of the 29 studies included patients of African or Afro-Caribbean descent. Both studies featured small sample sizes and limited analysis of racial differences in OCT-A findings, highlighting a critical underrepresentation of these populations in OCT-A research.

While OCT-A shows great promise as a noninvasive tool for evaluating retinal microvascular changes, this review highlights a critical gap in representation of patients of African or Afro-Caribbean descent. Studies on these populations remain limited, with small cohorts and incomplete analysis of racial or ethnic differences. Future research must aim to broaden the scope of OCT-A studies to ensure equitable application of this technology in identifying and managing at-risk populations.

B29

James Samson B.S.

Advisor(s): Eric Shrier M.D.

Co-author(s):

Utility of Intravitreal Dexamethasone implant (Ozurdex) in anti-VEGF Resistant Diffuse Diabetic Macular Edema

Objectives: IVI Dexamethasone (Ozurdex) may be effective in the treatment of anti-VEGF refractory Diabetic Macular Edema (DME).

Methods: A retrospective chart review was conducted on 10 eyes from 9 patients with suboptimal response to prior anti-VEGF injections. Inclusion required at least one prior anti-VEGF injection and recorded central macular thickness (CMT) values. CMT was measured using Optovue Avanti SD-OCT, and Snellen visual acuity (VA) was converted to LogMAR. Pre- and post-Ozurdex CMT and LogMAR VA were compared using paired two-tailed t-tests.

Results: Of the 10 eyes, the average number of Anti-VEGF injections prior to Ozurdex was 5.6 injections (sd = 5.87, range = 1-17). The average pre-Ozurdex CMT was 528 μ m (sd = 173.8, range = 326-748). The average number of weeks between the first Ozurdex injection and the following appointment where CMT was measured was 19 weeks (sd = 21, range 4.6-62.9). The average Post-Ozurdex CMT was 361.4 μ m (sd = 76.1, range 219-490). The average change in CMT was -201 μ m with a standard deviation of 117 μ m. There was a significant difference ($p=.001$) when comparing pre-to-post Ozurdex CMT. Average LogMAR VA was 0.60 (sd = 0.35, range 0.1-1.4) before Ozurdex treatment vs. 0.58 (sd = 0.31, range 0.1-1.2) post-treatment. The VA difference was not statistically significant ($p=0.38$).

Discussion: With the p value being $< .05$, there is significant decrease in CMT levels with Ozurdex treatment in patients with previous Anti-VEGF injections. There was no significant change in visual acuities measured through Logmar changes.

Conclusions: Ozurdex was effective in reducing CMT in DME patients. VA did not benefit from Ozurdex, although the follow-up was short. Reduced treatment burden with Ozurdex further supports its use vs. anti-VEGF.

B30

Adriana Kaganovski B.A.

Advisor(s): Roland Theodore Smith Ph.D.,M.D.

Co-author(s): Alauddin Bhuiyan , Anisha Kasi, Sofie Chen, Robert Thomson, Tasin Bhuiyan, Arun Govindaiah, Avnish Deobhakta, Gareth Lema , Katy Tai, Matthew A. Weissman, Leonard Amoruso

Elevated Prevalence of Age-Related Macular Degeneration in Urban Primary Care Setting

Purpose: Age-related macular degeneration (AMD) is the most common cause of vision loss in individuals over age 50. Given the disease's insidious onset and the current gap in the literature on the prevalence of AMD in primary care medical practices, it is imperative to characterize disease prevalence in diverse, urban, and primary care settings. We performed a post hoc analysis of a cross-sectional study to determine the prevalence of AMD among a diverse cohort of urban primary care patients.

Methods: 312 patients were recruited when obtaining routine health services from their primary care physician at a busy hospital-based primary care practice, Mount Sinai Hospital-Union Square (MSH), in lower Manhattan near one of the busiest subway stations in New York City, attracting a diverse group of patients. Participants were not selected on the basis of existing ocular pathologies. After obtaining informed consent, color fundus photographs were acquired for each recruited patient and read by two physicians and, as needed, an adjudicator, who categorized each patient as referable or non-referable with regards to AMD. Patients included in this post hoc analysis were limited to those aged 50-89.

Results: The prevalence of AMD within this cohort was significantly greater than the projected stratified values reported by the CDC at all age stratification levels. The most significant difference in AMD prevalence between the MSH cohort and the CDC values were found in the 50-54 age range, with the MSH prevalence of 39.47% being over five times greater than the CDC reported value of 7.84% for the same age group.

Conclusions: This study found higher prevalence of referable AMD at an urban primary care center, compared to CDC-published national averages. This underscores the need for improved screening and early detection to prevent irreversible vision loss in at-risk populations.

B31

Philip Branigan J.D., M.S.

Advisor(s): Crystal Marquez M.D.

Co-author(s): Sophia Zweig, Sarah Jadoo, Elana Cohen, Joya Ahmad, Philip Branigan, Francesca Kabemba, & Godstime Nwatu-Ugwu, Crystal Marquez MD

Myocardial Infarction in Women: Incorporating Health Disparities into Medical School Curricula

Cardiovascular disease (CVD) is the leading cause of death among women in the US. Compared to men, women with myocardial infarction (MI) experience more atypical symptoms, misdiagnosis, delayed treatment, morbidity, and mortality. Yet fewer than 1/3 of primary care providers feel equipped to assess CVD in women or educate them on CVD. This represents an important opportunity to increase health equity. We made changes to our second-year medical student curriculum focused on recognizing atypical MI symptoms and disparities in women's diagnosis, treatment, and mortality. This was informed by a literature review of MI in women and medical education focused on CVD in women. We incorporated this into 3 modalities: a lecture, a case study in a small-group problem solving class, and a lecture from a female MI survivor and advocate. These curriculum additions will be retained in the second-year student curriculum going forward.

We conducted pre- and post-surveys among students, with the post-survey limited to those who completed all three modules. The survey questions, consisting of both yes/no responses and a 5-point Likert scale, were designed based on the literature review. The pre-survey received 80 responses and the post-survey received 35. A descriptive analysis was performed in Excel. After attending these modules, students reported increased confidence in recognizing gender-specific MI symptoms and CVD risk factors as well as educating and advocating for women MI patients. A limitation of the project was the large discrepancy in pre- and post- survey responses, which may be due to the tendency of students to skip optional classes. This investigation demonstrated the methods through which training medical students in gender disparities can lead to a notable improvement in medical students' knowledge. This emphasizes the importance and effectiveness of incorporating health disparities in medical school curricula.

B32

Michael Woo B.S.

Advisor(s): Isabel McFarlane M.D.

Co-author(s): Zu Jie Zheng

Reactive Infectious Mucocutaneous Eruption: A Case Presentation

Reactive Infectious Mucocutaneous Eruption (RIME) represents a distinct clinical entity characterized by severe mucositis with variable cutaneous involvement, typically occurring in response to infectious triggers such as mycoplasma pneumoniae and Epstein-barr virus infections. This condition manifests with erosive mucocutaneous lesions of oral, ocular, and genital sites, often accompanied by systemic symptoms like fever and malaise. While this condition generally follows a self-limited course with spontaneous resolution occurring within several weeks, this disease remains a challenging and under-recognized clinical diagnosis. Here, we report a case of a 36-year-old healthy male who presented to University Hospital with a 2 week history of fever, generalized weakness, myalgias, and dermatologic manifestations including erythematous targetoid skin lesions of the trunk and extremities as well as painful mucosal erosions involving the oral cavity, conjunctiva, and genital mucosa. Laboratory testing revealed positive Mycoplasma pneumoniae IgM and elevated EBV IgG, suggesting potential infectious triggers to his current symptomatology. No medication exposures or alternative etiologies (autoimmune, malignancy, tick-borne, STI) were identified despite an extensive clinical workup over a period of weeks. Accordingly, this patient was diagnosed with RIME secondary to a recent mycoplasma pneumoniae or Epstein Barr infection. The patient was treated with supportive care, including intravenous fluids, pain management, and topical corticosteroids for mucosal inflammation. Symptoms subsequently improved over two weeks without long-term sequelae. RIME remains an underrecognized entity, and early diagnosis is crucial for appropriate management. Increased awareness of RIME can facilitate prompt identification and optimal treatment, leading to favorable outcomes.

B33

Sophia Zweig M.S.

Advisor(s): Crystal Marquez M.D.

Co-author(s): Philip Branigan, Sarah Jadoo, Elana Cohen, Joya Ahmad, Francesca Kabemba, & Godstime Nwatu-Ugwu

Myocardial Infarction in Women: Incorporating Health Disparities into Medical School Curricula

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B34

Monique Leinen B.S.

Advisor(s): Justin Dolin M.D.

Co-author(s):

I Prefer to Be Alone: Explaining social isolation among people with Schizophrenia

Social isolation is a global concern that is linked to worse health outcomes and increased mortality, especially in people with schizophrenia. Numerous studies have linked social impairment with neurocognitive deficits. Other studies have implicated social factors such as stigma that impact social functioning. We aim to provide a broader view that social isolation in people with schizophrenia is affected by both neurocognitive deficits and heightened social stigma. A non-systematic literature review was conducted utilizing PubMed and EBSCO with key terms “schizophrenia,” “social motivation,” “loneliness,” “stigma”. Inclusion criteria consist of studies published in the last 5 years that provide a meaningful theory. We excluded animal, pharmaceutical, and non-English studies. A total of 16 studies were selected. Eight studies focused on neurocognitive impairments that increased social isolation, highlighting deficits in the social reward process system. People with schizophrenia show a blunted neuronal response when anticipating social interaction but not when experiencing it. Eight studies focused on how stigma is associated with social isolation and decreased social functioning, reporting that self-stigma leads to impaired self-esteem, well-being, and autonomy, resulting in increased isolation. These studies suggest that at least a subsection of people with schizophrenia do desire increased social connection but that their efforts to obtain this are hampered by the stigmatization of people with mental illness in society. An approach that synthesizes neurocognitive and stigma theories may explain the social deficits of people with schizophrenia. While people with schizophrenia do have neuronal deficits in how they process social interactions, their experiences of stigma also influence how they interpret social interactions. A combined perspective can provide a more comprehensive approach to treatment that addresses both the biological and social factors.

B35

Sabina Kubayeva B.A

Advisor(s): Lina Jandorf M.A

Co-author(s):

Development of an Advanced Care Planning Pilot Module for New York City Community Members

Advanced care planning (ACP) is the process of planning for future medical decisions in the event that an individual is unable to do so independently. This process includes completing advanced directives (AD), legal documents that detail patients' medical and financial wishes. The lack of knowledge around ACP and AD was identified as a community-need by the Tisch Cancer Institute Community Outreach and Engagement (COE) Department at Mount Sinai. In response, we developed a community-based educational module to address this gap in knowledge. Curriculum development was guided by an in-depth literature review and collaboration with an interdisciplinary team of health educators, social workers, and palliative care experts. The workshop comprised three elements: a 30-minute slideshow presentation, a 2-page glossary and resource handout, and a healthcare proxy AD form. It was presented at five community organizations (n=50) selected based on existing relationships with the COE program. The presentation addressed the importance of ACP and ADs, debunked myths, and included interactive questions and reflective exercises to engage participants. To evaluate the workshop's impact, acceptability, and gather feedback, we used a previously validated, standardized survey tool that included a 5-point Likert scale and two open-ended questions. Pilot results suggest that our novel ACP workshop is effective in enhancing participants' understanding and self-efficacy in ACP.

B36

Joshua Singavarapu

Advisor(s): Abdo Kabarriti M.D.

Co-author(s): Amber Khemlani, Menachem Jacobs, Eli Berglas, David Musheyev, Jason Lazar, Abdo Kabarriti, Dr. Jason Lazar
Dr. Abdo Kabarriti

Evaluating the Quality of Cardiovascular Disease Information from AI Chatbots: A Comparative Study

Artificial intelligence (AI) is an informational resource, with a high volume of users attracted to its instantaneous results. The objective of this study is to assess the quality of medical information provided by four prominent chatbots — Bard, ChatGPT 3.5 Claude 2.0, and Perplexity — focusing on three prevalent cardiovascular diseases (CVD): myocardial infarction, heart failure, and arrhythmia. The evaluation assesses understandability, actionability, readability, the quality of chatbot responses, and the presence of misinformation. These criteria were analyzed using DISCERN, PEMAT5, and Flesch-Kincaid reading scores. Bard produced responses with a statistically lower Flesch-Kincaid readings score compared to the three other chatbots, and Bard and ChatGPT 3.5 produced statistically significant actionable responses. Among the CVD evaluated, it is important to note that “heart attack” produced lower grade level responses than “arrhythmia” and more actionable responses than both “arrhythmia” and “heart failure.” This would be one of the first, if not the first, studies to assess AI credibility for the future of the dissemination of cardiovascular information for patients. As artificial intelligence advances, ongoing research and collaboration between healthcare professionals, researchers, and technology developers will ensure the safe and effective use of AI in empowering patients and improving public health outcomes.

B37

Julia Glatman B.S.

Advisor(s): Lennox Ksido B.S.

Co-author(s):

Comparative Outcomes of Spinal vs. General Anesthesia across Various Urological Procedures

Introduction

Due to the anatomical location and short duration of many urological procedures, spinal anesthesia (SA) is a viable alternative to general anesthesia (GA). While GA is often preferred for its controlled airway management and stable surgical conditions, SA has potential benefits, including reduced postoperative pain, fewer complications, and faster recovery. This study aims to compare surgical efficiency, complication rates, and postoperative recovery between the two anesthetic methods.

Methods

We conducted a comprehensive literature search using PubMed from 2015 to 2025 to compare SA and GA across multiple urological procedures. A total of 177 articles were screened, with 20 selected based on an inclusion of spinal anesthesia, general anesthesia, and outcomes data.

Results

SA demonstrated several similarities and advantages over GA in various perioperative metrics. Complication rates were similar, as seen in RIRS (14.5% vs. 19%, $p=0.15$) and HoLEP (17.7% vs. 16.4%, $p=0.749$). Procedure duration varied slightly, with SA offering significantly shorter times in HoLEP (89 min vs. 101 min, $p<0.001$), while RIRS showed no meaningful difference (54.3 vs. 57.65 min, $p=0.29$). A major advantage of SA was its impact on postoperative recovery, with reduced pain scores and fewer analgesic requirements. Patients receiving SA experienced faster PACU discharge and lower ICU admission rates, particularly in high-risk populations. Lastly, SA provided superior hemodynamic stability and minimized postoperative complications associated with prolonged anesthesia exposure.

Conclusion

This study highlights spinal anesthesia as a strong alternative to general anesthesia in urological procedures. SA has comparable surgical outcomes while providing better hemodynamic stability, less postoperative pain, and quicker recovery, making it an especially attractive option for high-risk patients.

B38

Lennox Ksido B.A.

Advisor(s): Jeffrey Weiss M.D.

Co-author(s):

Ultrasound in Renal Cancer Screening - A Review of The Literature

Introduction: Renal cell carcinoma (RCC) is the seventh most prevalent neoplasm in the Western world with an increasing burden worldwide. Early-stage RCC is often asymptomatic and incidentally diagnosed using cross-sectional imaging. Given its low cost, lack of radiation or contrast exposure, and widespread accessibility, this review sought to examine ultrasound as a potential tool for early-stage RCC screening.

Methods: We conducted a comprehensive literature search using PubMed and Embase from 1982 to 2023. 177 articles pertaining to ultrasonography screening of RCC were identified. The title and abstract of each article were analyzed. 3 authors then examined full-text versions of articles marked for further review to determine if they met the inclusion criteria. Studies conducted on symptomatic populations or utilizing CT as the primary imaging modality were excluded.

Results: 9 studies satisfied our inclusion criteria. Key findings from these studies highlighted ultrasound as an effective tool for screening, suggested screening in high-risk asymptomatic patients, and identified a need to optimize screening guidelines to minimize costs and lower overdiagnosis of benign conditions.

Conclusions: Ultrasound, due to its accessibility, affordability, and effectiveness in detecting renal cancer stands as the optimal tool for a kidney cancer screening program although its effectiveness can depend on operator experience. Such a program can particularly benefit from screening patients with known risk factors including older age, male gender, smoking history, and immunosuppression. Integrating kidney screening into existing abdominal ultrasound screening guidelines could enhance both feasibility and cost-effectiveness.

B39

Kirabo Nanyanzi MPH

Advisor(s): Rose Calixte Ph.D.

Co-author(s):

Smartphone Ownership and Health-Related Internet Use Among Internet Users: An Analysis of the Health Information National Trends Survey 6 (HINTS 6).

This study explores the relationship between smartphone ownership and internet-based health information-seeking behaviors among adults who use the internet in the United States. With internet usage increasingly becoming a primary means of accessing health-related information, understanding the factors that influence online health information-seeking behaviors is crucial. Using data from the Health Information National Trends Survey (HINTS) 2022 cycle, this study examines the association between smartphone ownership and using the internet for health or medical needs, while considering demographic and socioeconomic factors as potential confounders. Logistic regression models were employed to analyze the data, revealing significant associations between smartphone ownership and internet health information-seeking behaviors, after adjusting for covariates such as age, race/ethnicity, birth gender, and language (OR: 2.6, 95% CI: 1.3-5.2). Additionally, females, those with higher incomes, and individuals with greater confidence in using the internet for health purposes are more likely to engage in online health information seeking. Further research using longitudinal approaches and qualitative methods could offer deeper insights into the dynamics of digital health behavior and literacy over time.

B40

Jasmine Carcamo M.A.

Advisor(s): Roseann Peterson Ph.D.

Co-author(s):

Advancing Depression Genomics in Latin America: Phenotypic Insights from Latin American Genomics Consortium Major Depressive Disorder (LAGC-MDD) Working Group

Objectives: Despite advancements in understanding the etiology of Major Depressive Disorder (MDD), key challenges remain, including the underrepresentation of diverse ancestry in study cohorts and the notable heterogeneity among depression phenotypes. The LAGC-MDD Working Group is actively working to address these limitations. This presentation will discuss the group's efforts in depression phenotype assessment, data harmonization, and genomic analysis.

Methods: The LAGC MDD Working Group has aggregated datasets to conduct the first large-scale genome-wide association study (GWAS) meta-analysis of depression phenotypes in participants of admixed Latin American ancestry. As an initial approach, we conducted a qualitative analysis to evaluate the heterogeneity of MDD phenotypes.

Results: Data from 33 datasets across six countries (e.g., Brazil, Colombia) were aggregated for a large-scale meta-analysis of depression phenotypes (n=135,000 cases; 240,000 controls). Preliminary findings demonstrate substantial variability in phenotype assessment methods, ranging from single-item self-reports to structural clinical interviews. Medical records classified using ICD codes were the most frequently utilized assessment tool, followed by the CESD self-report depression scale.

Discussion: While large data sets are important for conducting well-powered analyses, they also introduce variability that warrants careful examination. Our planned analyses aim to quantify and model heterogeneity in depression phenotypes by integrating psychometric and genomic approaches, which will refine the accuracy of our findings. The LAGC MDD Working Group remains dedicated to enhancing data collection and capacity building within Latin American communities. Given that MDD is one of the most prevalent mental health disorders in Latin America, mobilizing large-scale, collaborative efforts is critical for deepening our understanding of MDD and addressing disparities in under-represented population

B41

Valerie Chateau B.S.

Advisor(s): Carla Boutin-Foster M.D.

Co-author(s):

Brooklyn Scholars with Athletic Goals (BK-SWAG): A High School STEM Program that Blends Sports with Sciences.

Background: Recent data shows a decline in high school students' interest in pursuing Science, Technology, Engineering, and Mathematics (STEM) careers, while interest in sports has increased. Recognizing these trends, Brooklyn Scholars with Athletic Goals (BK-SWAG) was developed to introduce STEM and biomedical careers to high school students through sports. The objective is to assess BK-SWAG's early outcomes.

Methods: Student-athletes or those involved in sports management were recruited from high schools in NYC's low socioeconomic communities. The 4-week curriculum included health education, clinical shadowing with physical therapists, CPR certification, and peer mentorship. Students researched and presented health conditions affecting famous athletes. The program evaluation used a mixed method of quantitative and qualitative interviews. Descriptive statistics characterized the student population and standard qualitative approaches analyzed qualitative feedback.

Results: 76 student-athletes from 21 high schools across the tri-state area participated in BK-SWAG, with 58% female, 82% African-American, 20% Latino, and 6% Asian. Students were able to select more than one race and ethnicity. Seventy-two participants contributed to the evaluation data, including a sub-group (n=21) who completed qualitative exit surveys. Most respondents found the following aspects of BK-SWAG to be helpful or very helpful: exposure to health professional fields, life skills workshops, and discussions on balancing sports and academics. The most enjoyable aspect was shadowing clinicians. The majority were very likely (61.90%) or likely (33.33%) to recommend BK-SWAG to their peers. Respondents also provided feedback on program delivery and group activities.

Conclusion: BK-SWAG introduces STEM education through sports, raising awareness of health and science careers among student-athletes. The program offers a framework for future STEM exposure initiatives for high school students.

B42

Ezie Nguyen M.D.

Advisor(s): Janet Rosenbaum Ph.D.

Co-author(s):

Modifiable Factors Associated with Suicide Risk Behavior Among Trans and Gender-Diverse Youth: A case-control study in the Youth Risk Behavior Survey 2023

Background: Trans and gender-diverse (TGD) youth experience higher rates of suicide ideation (SI) and attempts (SA). Nationally representative data has only recently included measurements of gender identity. This study identified modifiable factors among TGD youth experiencing SI and SA to inform prevention targets.

Methods: This case-control study used data from the Youth Risk Behavior Survey 2023 from self-identified TGD youth (n=612), a national study of high school students. The outcomes were SI and SA in the past 12 months with exposures of interest being substance use, sexual/dating violence, poor subjective mental health, peer connectedness, guardian monitoring, and basic-needs fulfillment. Survey-weighted Poisson regression identified factors associated with increased odds of SI and SA.

Results: Within the sample, 53.8% reported SI and 25.7% SA in the past year. SI and SA were associated with poor subjective mental health ($p<.0001$; $p=.012$) and a history of forced sex ($p<.001$). SA, but not SI, was linked to guardian neglect ($p=.02$), sexual violence ($p<.001$), and past 30-day substance use (alcohol, marijuana, and nicotine; $p<.001$). SI, but not SA, was associated with low school attachment ($p=0.49$). Forced sex significantly increased odds of SI (IRR=1.64, $p<.001$) and SA (IRR=2.95, $p<.001$).

Discussion: The sample SI and SA prevalence align with previous literature. The Interpersonal Theory of Suicide posits suicide capability (lowered fearlessness of death and increased pain tolerance) facilitates ideation to action. Our results reinforce this, as SA was associated with previous sexual violence and substance use which habituate self-injurious behavior and lower fear, respectively. Given the high prevalence, we recommend regular assessments for suicidality and risk factors in TGD youth during care visits and school. Future surveys should include histories of self-injurious behavior and prior SA, as these are known to increase risk through increased capability.

B43

Charlie Spell M.D.

Advisor(s): Melissa Lee M.D.

Co-author(s): Rabab Abdalla, Nawshin Jamil, Mahtab Zangui

Steady Steps: Enhancing Fall Screening For Older Adults

Falls are a leading cause of both fatal and non-fatal injury among patients over 65 years of age. Though 96% of physicians believe that fall assessments should be performed on elderly patients, only 52% believe they have the expertise to perform them. In a study by Eckstrom et al in 2016, a 4-hour educational intervention focused on evidence-based guidelines increased fall screening from 12.3% to 44.5% among interprofessional providers. The Sit-To-Stand (STS) and Timed Up and Go (TUG) tests are validated fall screens promoted by the CDC STEADI Initiative (Stopping Elderly Accidents, Death and Injuries). We sought to address the gap in fall risk assessment in our Central Brooklyn resident practice using a hands-on educational intervention. Our study targeted on improving resident beliefs, knowledge, procedural comfort. 52 charts were reviewed for patients aged 65 years and above obtaining care in our resident-run, urban safety-net primary care practice to determine whether residents were screening for falls in their practice. 32 residents were surveyed to assess their beliefs, knowledge, and training in this area. A multimodal educational intervention occurred during residents' didactics. Residents were provided handouts including instructions on how to perform TUG and STS with age-related thresholds. An unpaired random chart review of 61 patients aged 65 years and above was conducted after the educational intervention to evaluate resident clinical practice. From our data analysis, we were able to demonstrate an increase in knowledge of associated fall risk factors, statistically significant improvement w/ learning and comfortability w/ performing TUG/STS, and an increase in screening, documentation, and utilization after receiving proper education.

B44

Rebhi Rabah M.D.,M.S.

Advisor(s): Melissa Lee M.D.,M.S.

Co-author(s): Qianjun Pan, MD, Afroza Sultana, MD, Gemonique Bowen, MD, Nadia A. Williams, MPH, Melissa S. Lee, MD MS

BP Basics: Enhancing Hypertension Control Through Population Health Outreach in a Resident Primary Care Practice

Introduction: Hypertension (HTN) is a leading cause of stroke and heart disease. 30% of New Yorkers live with HTN; 44% are Black. Common treatment includes lifestyle modifications and medications. Yet 21% of patients living with HTN in our resident-run safety-net primary care practice in Central Brooklyn have uncontrolled blood pressure (BP).

Methods: 24 patients with HTN completed a telephone survey. 83.3% of patients believe they are managing their BP “well” or “very well.” The most common barriers to BP control were too many medications (n=3, 13.6%), side effects (n=6, 27%), and difficulty picking up medications (n=4, 18.2%). A standardized phone script focused on assessing and improving patient understanding of HTN was developed. Patient beliefs and behaviors were measured using a Likert scale and compared pre- and post-intervention. BP readings were compared before and 3 months after the educational intervention.

Results: 45 patients were contacted (60% women, mean age 59.2 years). Knowledge of end organ damage ($t(44)=-8.438$, $p<0.001$), and complications ($t(44) = -3.330$, $p<0.002$) improved post-educational intervention. Wilcoxon signed-ranks test demonstrated a significant increase in patients' perception of the importance of BP control and medication adherence ($Z = -5.142$, $p<.001$ and $Z=-5.475$, $p<.001$, respectively). BP was evaluated at 3 months post-intervention in 31 patients. An exact McNemar's test determined that there was a statistically significant difference in the proportion of patients with controlled BP pre- and post-intervention, $p < 0.001$.

Discussion: In our primarily Afro-Caribbean safety-net practice, barriers to BP control include gaps in knowledge, beliefs, and behaviors around potential complications, access to healthcare, cost of medications, and concerns about side effects. Our data shows that patients' knowledge of HTN and motivation for medication adherence can be effectively improved through cost-effective 5-minute teaching sessions.

B45

Ekenedilichukwu Nnadi M.D.

Advisor(s): Melissa Lee M.D.

Co-author(s): Hazela-Ann Prince, Anwesha Chaudhuri, Ryan Gheevargheese, Melissa Lee

What Note to Do?

Description

We surveyed 43 residents (PGY-1,2,3) in the primary care program to assess baseline measures of confidence and satisfaction with note writing, burden of time writing, and work after-hours using a Likert Scale.

Residents engaged in a 1-hour note workshop and subsequently were trained using a standardized curriculum. Post-intervention, we surveyed residents and analyzed results using a Wilcoxon signed-rank test.

43 pre-intervention clinical notes were randomly assigned to 1 of 4 resident evaluators for review using the QNOTE tool; 43 post-intervention notes were similarly reviewed. Reviewers rated 12 elements per note as fully, partially, or unacceptable. Ratings were compared using a paired samples t-test.

Discussion

QNOTE scores for many elements improved significantly after the intervention: CC ($p=0.033$); HPI ($p=0.009$); PMHx ($p=0.010$); Soc/Fam Hx ($p=0.010$), Problem List ($p=0.014$); Physical Findings ($p=0.026$) and Plan of Care ($p=0.004$).

Documentation of the Medication list, Allergies, ROS, Assessment, and Follow Up Information were not statistically different after the intervention.

Resident surveys demonstrated increased satisfaction ($z=-3.946$, $p=0.000$) and confidence ($z=-3.640$, $p=0.000$) with note writing. More residents felt note writing matters ($z=-3.207$, $p=0.001$). Note writing felt faster ($z=-2.437$, $p=0.015$) and was more often completed within an hour of the last patient visit ($z=-1.993$, $p=0.046$). Residents continued to complete notes at home ($z=-1.190$, $p=0.234$); motivation to change lagged ($z=-1.830$, $p=0.067$).

Evaluation

Our curriculum improved note quality, increased satisfaction, and reduced documentation time. Reducing this burden may help mitigate burnout. Structured documentation and EMR tools enhanced residents' ability to organize and prioritize clinical information, improved confidence, and may support the development of clinical reasoning skills. Improving quality while reducing burden may significantly benefit resident well-being.

B46

Meenakshi Kurup M.D.

Advisor(s): Neda Valizadeh M.D.

Co-author(s): Elina Shtridler, Aye Mon Thida

Hemophagocytic Lymphohistiocytosis in an HIV-Negative Adult with *Penicillium Non-Marneffei* Infection

Background: Hemophagocytic Lymphohistiocytosis (HLH) is a life-threatening syndrome characterized by excessive immune activation. Diagnosing HLH is challenging due to its variable presentation and crucial due to the high mortality rate. This report presents a unique case of HLH secondary to *Penicillium non-marneffei* in an HIV-negative patient.

Case Presentation: An 85-year-old Haitian male presented with presyncope and fever. Extensive workup ruled out infectious, rheumatological, and malignancy causes. His fever persisted despite antibiotics. Computed tomography of the chest and abdomen (CT) showed mediastinal lymphadenopathy with varying stages of calcifications. An erythematous, nontender, nonpruritic nodule developed on his right arm, which spread to his extremities. A punch biopsy showed non-necrotizing granulomatous changes, without evidence of microorganisms. As such he was diagnosed with Sarcoidosis and treated with steroids for defervescence and transaminitis and was discharged. Three days post-discharge, he was readmitted for *Enterococcus faecalis* bacteremia. Recurrent fevers, with worsening transaminitis, elevated inflammatory markers, and cytopenia, persisted and deteriorated despite the resolution of bacteremia. His calculated H-score was 157. A 5-day course of IVIG 2g/kg was initiated. He continued to deteriorate, with multiorgan dysfunction and a rising H-score (233, corresponding to a 98-99% likelihood of HLH). Soluble interleukin-2 receptor was elevated at 11609 U/mL. A prolonged incubation of fungal cultures from the previous punch biopsy grew *Talaromyces* species *non-marneffei*. Amphotericin B, Voriconazole, and high-dose dexamethasone were initiated. Etoposide and Rituximab were withheld due to infectious etiology. Amphotericin-B was stopped after one dose due to hepatotoxicity. Despite treatments, he deteriorated and expired.

Conclusion: HLH demands early recognition and prompt treatment to prevent significant mortality.

B47

Joseph Boroda M.D.

Advisor(s): Jeffrey Weiss Ph.D.,M.D.

Co-author(s): Dr. Jeffrey Weiss, Dr. Jason Lazar, Dr. Alla Akivis

Differences in Water and Solute Excretion in Patients with Nocturia

Prior research has shown that patients with nocturia who adhered to dietary sodium restriction had a significant decrease in their number of nighttime voids. This study aims to characterize nighttime and 24h urine production and solute excretion in patients with nocturia.

Methods : Subjects with hypertension completed 24 hour voiding diaries and urine collection in three aliquots: first nighttime void, all subsequent nighttime plus first morning void, and daytime voids. The mild nocturia group had 0-2 nighttime voids (n=18) and the severe nocturia group had 3+ nighttime voids (n=12). Results: Groups were comparable in age (M=62 (sd=11) y), gender (21 females), systolic (139 (16) mmHg) and diastolic (80 (9) mmHg) BP, serum creatinine (0.9 (0.2) mg/dL), HbA1c (6.6 (1.5) %), and maximum void volume (347 (125) mL). Compared to the mild group, the severe group had greater nighttime excretion of sodium (1.06 (0.82) vs 2.05 (0.17) g, p=.02), potassium (0.60 (0.34) vs 0.93 (0.58) g, p=.03), and urea (3.07 (1.91) vs 4.35 (1.45) g, p=.03), as well as 24h sodium excretion (2.11 (1.26) vs (3.20 (1.98) g, p=.04), nighttime urine volume (524 (298) vs 1058 (304) mL, p<.001), and 24h urine volume (1150 (427) vs 1713 (510), p=.001). The severe group excreted significantly more sodium, potassium, urea, and creatinine in the subsequent nighttime plus first morning void aliquot compared to the first nighttime void, while no significant differences were observed in the mild group.

Discussion: Those with severe nocturia excreted 52% more sodium in 24h than those with mild nocturia and surpassed the maximum daily sodium intake of 2.3 g recommended by the AHA. Further, in contrast to those with mild nocturia, those with severe nocturia excreted more solutes later in the night compared to the first nighttime void, suggesting increased late-night natriuresis may play a role in the pathophysiology of nocturia and provides a simple dietary approach to initial treatment of nocturia.

B48

Joseph Boroda M.D.

Advisor(s): Jeffrey Weiss Ph.D.,M.D.

Co-author(s): Dr. Jason Lazar, Dr. Jeffrey Weiss, Dr. Alla Akivis

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B49

Juhi Vora M.S.

Advisor(s): Mohammad Faysel Ph.D.

Co-author(s):

**The Impact of the COVID-19 Pandemic on Medicaid Prescription Trends for Type 2 Diabetes
(2018-2024)**

Objective: This study evaluates Glucagon-like peptide-1 receptor agonists (GLP-1 RAs) drug utilization patterns and Medicaid reimbursement patterns by comparing pre-pandemic, post pandemic drug utilization data from 2018 and 2024. The study focuses on if COVID-19 pandemic had an impact on the utilization trends, reimbursement costs, and the adoption of new drug formulations.

Method: Study data were extracted from the Medicaid State Drug Utilization Dataset for the years 2018 and 2024 from Medicaid.gov website. Descriptive statistics and several SAS procedures like PROC FREQ, PROC MEAN, and PROC GLM were used to study pandemic influence to understand utilization, reimbursement trends and statistical significance. The analysis also examined geographic variations by comparing trends across major U.S. states.

Results: Post-data cleaning, 22,455 observations of GLP-1 drugs were analyzed, year, number of prescriptions and Medicaid amount reimbursed were key variables. Overall GLP-1 prescriptions increased 5.5 folds from 2,650 in pre-pandemic period to 14,649 in post-pandemic period. Ozempic remained highest prescribed drug among all GLP-1's across all phases. Additionally, newer drugs such as Wegovy, Mounjaro showed significant increase in post-pandemic utilization, particularly in NY, CA, and NJ. Medicaid spending on GLP-1 drugs reached \$22.70 billion post pandemic compared to \$1.94 billion in pre-pandemic period. The ANOVA results from GLM procedure showed significant differences in Medicaid reimbursement based on both pandemic period and drug family ($p < 0.0001$ for both), confirming the observed increase in spending and utilization.

Conclusion: The study explains a substantial rise in GLP-1 prescriptions and Medicaid reimbursements post-pandemic. Geographic disparities were seen in usage of different drugs with the adoption of newer formulation. The study lacks data granularity which is needed to assess disparities and future cost trends in drug access & usage.

B50

Muhammad Yaseen B.S.

Advisor(s):

Co-author(s):

Advancements in Treating Vascular Dysfunction in Pro-Inflammatory States: The Promising Efficacy of PCSK9 Inhibitors

Background:

Vascular dysfunction is exacerbated in pro-inflammatory states, causing CVD. This study explores the efficacy of proprotein convertase subtilisin/kexin type 9 (PCSK9) inhibitors vs. traditional lipid-lowering agents in improving vascular function in these conditions.

Methods:

A systematic review and meta-analysis were conducted using a comprehensive search in PubMed, ScienceDirect, and Cochrane from the last five years. Randomized controlled trials and cohort studies were included, with the primary outcome being improvement in vascular dysfunction assessed by endothelial tests and markers.

Results:

Across 24 studies involving ~61,000 participants, PCSK9 inhibitors alirocumab and evolocumab showed efficacy. The EVOLVE and EVACS trials showed evolocumab's endothelial benefits in dyslipidemia and HIV, with treatment reducing LDL-C by 60%.

Alirocumab/evolocumab cut CVD risk by 2% and mortality by 1% vs. placebo, while evolocumab also cut down MI (myocardial infarction) risk by 1%.

Against ezetimibe and statins, PCSK9 inhibitors lowered LDL-C more; over 95% of evolocumab recipients met LDL-C targets at 8 weeks, starkly outperforming the 38% in the placebo group.

Conclusion:

PCSK9 inhibitors, particularly alirocumab and evolocumab, have exhibited significant potential in improving vascular function, especially in pro-inflammatory states such as HIV and dyslipidemia. Their potency in reducing LDL-C levels by 60% and achieving LDL-C targets in over 95% of evolocumab recipients at 8 weeks underscores their therapeutic value. Despite high evidence grading versus placebo, comparisons with ezetimibe and statins require further long-term studies.

Future Work:

Further studies on PCSK9 inhibitors are essential to evaluate long-term outcomes, comparative effectiveness with existing lipid-lowering therapies, and their economic viability. Expanding research to diverse patient groups and exploring novel administration methods could broaden their clinical utility.

B51

Isha Malik B.S.

Advisor(s): Elizabeth Helzner Ph.D.

Co-author(s):

Bridging the Gap in Lung Cancer Awareness: A Cross-Sectional Study of Risk Perception and Early Detection Willingness in Pakistan with Global Implications

Lung cancer remains the leading cause of cancer-related mortality globally, with late-stage diagnoses significantly reducing survival rates. In Pakistan, limited awareness and misconceptions about risk factors and screening may contribute to delayed detection. Understanding how knowledge influences screening willingness is critical to developing effective screening programs locally and globally. This novel study involves a cross-sectional survey conducted among 364 adults in urban Pakistan to assess their awareness of lung cancer risk factors, symptoms, and early detection methods. The primary outcome—willingness to undergo screening—was assessed based on urgency to seek medical care and prior screening history. The primary exposure was a composite knowledge score reflecting correct identification of risk factors. Chi-square tests examined associations between knowledge and screening willingness, while logistic regression adjusted for demographic covariates (gender, smoking status, and age). Preliminary results show that greater awareness of lung cancer risk factors significantly increases screening willingness ($\chi^2(3) = 10.5950$, $p = 0.014$), with belief in early detection benefits mediating this effect. Screening willingness also increased with age ($p = 0.042$). These findings highlight the urgent need for targeted public health campaigns particularly in countries where screening programs remain underutilized. Pakistan serves as a case study for similar regions facing barriers to early detection, demonstrating the broader global need for culturally tailored interventions. Strengthening education on lung cancer risk factors and screening accessibility could have profound implications for reducing late-stage diagnoses worldwide. Expanding screening awareness beyond high-risk populations may contribute to improved survival rates and global lung cancer prevention efforts.

B52

Difaa Majrud MPH

Advisor(s): Simone Reynolds Ph.D.

Co-author(s):

The barriers and factors associated with low rates of Hepatitis B vaccination among non-US born NYC residents.

Hepatitis B is a chronic liver infection caused by hepatitis B virus (HBV) affecting 350 million people and causing 600,000 deaths yearly. However, it is a preventable disease with proper care and vaccinations. About 2.4 million Americans are infected with hepatitis of which 50% are Asian Americans. As of 2019, 70% of 243,000 chronic hepatitis B infected persons in NYC are non-US born, non-Hispanic Asians. Non-US born, non-Hispanic Asians face many challenges such as language barriers preventing them from vaccinations which can eliminate the disparities of hepatitis B within the community. This is a major public health concern given no known studies directly examine the association between language barrier and vaccinations rates for hepatitis B.

Methods: Using the New York City Health and Nutritional Survey (NYCHANES) 2013-2014, 1,459 participants were included in the finale analysis. A bivariate analysis of Chi Square was used to look at demographic categorical variables such as vaccination status, race, gender, insurance, education, hep B diagnosis and language. A t-test was used for age. A Chi-square test was conducted to observe the difference between vaccinated and non-vaccinated, and a logistic regression OR examined at the relationship between the outcome and predictors.

Results: There was a statistical significance in US-born, age, education, and language. A p-value of <0.05 is considered statistically different. Those with a high school education had a lower odd of 37.9% being vaccinated. Those who identified as Black had 61% higher odds of being vaccinated. Those who identified as Hispanic had 64% higher odds of being vaccinated.

Conclusion: The impact of language, education and race on vaccination rates needs to be researched more to understand how we can increase vaccination rates. There are gaps in research for non-US born Asians and vaccinations rates of hepatitis B. More research is needed.

B53

Difaa Majrud MPH

Advisor(s): Simone Reynolds Ph.D.

Co-author(s):

The barriers and factors associated with low rates of Hepatitis B vaccination among non-US born NYC residents.

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Conclusion: The impact of language, education and race on vaccination rates needs to be researched more to understand how we can increase vaccination rates. There are gaps in research for non-US born Asians and vaccinations rates of hepatitis B. More research is needed.

B54

Dhruti Patel M.D.,MPHc

Advisor(s): Janet Rosenbaum Ph.D.

Co-author(s):

The association between smoking and the 10-year incidence of diabetes among midlife women in the US: Analysis of Study of Women's Health Across the Nation data

Background: Diabetes mellitus is a serious public health concern, with smoking being an independent but understudied risk factor. This study examines whether women in the US who are current or former smokers are more likely to develop diabetes within 10 years compared with never smokers.

Methods: We test this hypothesis using 10 years of longitudinal data from SWAN, a longitudinal study of pre and perimenopausal women aged 42-52 years of age from 5 US states (n=1676 women) from years 1995-2008. Current smoking status was assessed through a self-reported questionnaire at baseline (1995-97), and diagnosis of diabetes was an aggregate of self-reported diabetes diagnosis since last visit every year for 10 years. All potential confounding variables like socio-demographics, behavioral factors and health status like BP were considered. We used chi-square test for bivariate analysis, and multivariate Poisson regression adjusting for potential confounding variables to examine the association between smoking status and diabetes.

Results: Diabetes incidence over 10 years was 29.87% for current smokers, 15.18% for former smokers, and 13.5% for never smokers. Compared with non-smokers, current smokers had twice the risk of diabetes in unadjusted regression (IRR 2.22, 95% CI (1.66-2.94), $P<0.001$) and 52% greater risk of in multivariate Poisson regression after controlling for other variables. Former smokers did not have higher diabetes risks than non-smokers.

Conclusion: These results finding an association with current but not former smoking with the 10-year incidence of diabetes, may provide further benefits to smoking cessation programs. Policy makers and workplaces should target smoking cessation interventions like pharmacotherapy & behavioral interventions among high risk individuals. Experiments of smoking cessation interventions & tobacco tax increase should evaluate wider health outcomes including diabetes prevention.

B55

Aliye Mosaad MPH

Advisor(s): Elizabeth Helzner Ph.D.

Co-author(s): Dr. Laura Geer, Dr. Peter Barr, Dr. Jacquelyn Meyers, Dr. Elizabeth Helzner

Thermoregulatory Stress and the Ageing Mind: Investigating Environmental High Heat Exposure as a Risk Factor for Dementia

As populations age globally, the health impacts of high heat exposure are a growing public health concern. This study explored the association between high heat exposure and the prevalence of Alzheimer's Disease and Related Dementias (ADRD) and Mild Cognitive Impairment (MCI) among U.S. adults in the All of Us Research Program (n=286,767). Heat data from the CDC's National Environmental Public Health Tracking Network was mapped to 3-digit ZIP codes. High heat exposure was defined as number of days within a multi-day heat event (≥ 2 consecutive days with a maximum heat index above the 90th percentile for May–September). ADRD/MCI diagnosis and medical comorbidities (CVD, cerebrovascular disease, type 2 diabetes, COPD, hearing impairment, depression) were identified in EHR data based on ICD codes. Demographics, smoking, alcoholism, and social isolation were measured via survey. Community-level SES was quantified using the Area Deprivation Index (ADI). Logistic regression evaluated associations between high heat days and ADRD/MCI. Mediation analysis by SES and social isolation was also examined. In multivariable-adjusted models, each additional high heat day was associated with a 0.39% increase in ADRD/MCI odds (95% CI: 1.0026–1.0051). Every 10 days of exposure to a high heat event corresponded to ~4% higher odds of ADRD/MCI, reinforcing concerns about prolonged environmental stressors. Mediation analysis found that the ADI partially mediated this relationship, explaining 8.6% of the association ($p < 0.001$). However, neither education nor social isolation significantly mediated or moderated effects. Findings highlight the need for climate adaptation policies to protect ageing populations, especially in disadvantaged communities. The urban heat island effect may also exacerbate health risks for this group. Addressing these disparities requires strengthened public health policies and targeted adaptation strategies to reduce vulnerability and safeguard cognitive health.

B56

Merium Naqvi MPH

Advisor(s): Marlene Camacho-Rivera ScD, MS, MPH

Co-author(s): Ana J. Schaefer, Cleveranne Julce, Thomas I. Mackie

Factors influencing the well-being of perinatal individuals who are economically marginalized: A qualitative study.

Intro

Public health crises, such as COVID-19, disproportionately impact economically marginalized individuals. This study aims to understand factors that influenced the wellbeing of economically marginalized perinatal individuals amidst a public health crisis to inform responsive interventions.

Methods

Semi-structured qualitative interviews were conducted with 24 individuals receiving pregnancy-related care from 11/08/2021-2/28/2022. Interdisciplinary team reviewed transcripts developing a codebook consisting of a priori & emergent codes. Transcripts were coded by 2 investigators through coding consensus.

Results

Findings suggest that policies implemented at federal & state levels amidst a public health crisis also impact organizational policies & structures, interpersonal relations, clinician-patient encounters, & individual well-being. For example, an individual suggests that COVID-19 risk mitigation policies implemented in her healthcare setting heightened her anxiety levels surrounding access to care, her individual decision-making capacity with healthcare seeking behavior, her partner being able to accompany her & her decision to not have any more children. Other individuals reported similar disruptions in social support systems, difficulties accessing healthcare services, and challenges in managing family responsibilities due to pandemic-related stressors.

Conclusion

By tracing the impact of policies & shifting social contexts amidst a public health crisis, our analyses identify how policies at the federal, state, & organizational levels impact the wellbeing of economically marginalized perinatal individuals. Attention to the ways within which these policies exacerbate inequities is critical to inform public health interventions, target resources, identify key areas for support, & build resilient healthcare systems.

B57

David Inzerillo M.S.

Advisor(s): Thomas Wallach M.D.

Co-author(s): Dr. Simon Rabinowitz, Dr. Shahzaib Khan

Inpatient Feeding Program for a Vulnerable, Underserved, Pediatric Population: A Pilot Study

Background: Pediatric feeding disorders (PFD) encompass a variety of conditions that interfere with a child's ability to consume a developmentally appropriate diet essential for growth. These disorders, clustered in complex care patients, lead to nutritional deficiencies, social/behavioral delays and poor physical growth. Unfortunately, services such as intensive, multidisciplinary feeding programs have traditionally been limited for underserved populations. Our study describes a multidisciplinary pilot program highlighted by one week of comprehensive inpatient stay in an inner-city medical center. Methods: We describe 11 children between ages 8 months to 9 years with a diagnosis of failure to thrive or avoidant restrictive food intake disorder (ARFID) who underwent 1-week intensive in-patient feeding therapy. Each patient was assessed by a pediatric gastroenterologist and had baseline laboratory testing as part of the initial intake. Intensive feeding therapy sessions were conducted twice a day with a trained pediatric speech language pathologist who assessed barriers to oral feeding. Sensory and behavioral techniques were employed such as desensitization, texture fading, portion fading, demand fading, allowing choices and providing preferred foods to improve acceptance of age-appropriate foods. Outcomes were assessed as increased acceptance to variety of foods, increased intake during mealtimes and caregiver carry-over of feeding strategies. Patients were also monitored for changes in weight, caloric intake and subjective reporting by caregiver of improved oral intake. Behavioral and Development team was utilized to assess current developmental needs and optimize service provision. Results: Out of the eleven patients, five patients demonstrated weight gain during the in-patient admission week with only one patient having a documented weight loss. Ten out of eleven patients had acceptance to an increased variety of foods and successful carry-over of strategies

B58

Daana Bajnauth

Advisor(s): Yolanda Bryce M.D.

Co-author(s): Amy Deipolyi, MD, PhD and Frank Annie

Impact of Genetic Mutations on Response and Time to Progression After Radioembolization of Breast Cancer Liver Metastasis

Purpose

To evaluate the association between genetic mutations and clinical outcomes, including response rate and time to progression, in patients with breast cancer liver metastasis treated with Y-90 radioembolization.

Methods

This is a retrospective, single-institution study. 110 patients with biopsy-proven breast cancer liver metastasis who underwent Y-90 radioembolization were included. Genomic profiling was conducted using MSK-IMPACT. Data was collected from electronic medical records (EMR) and Picture Archiving and Communication System (PACS) for patient demographics and treatment response. Treatment responses were categorized as complete, partial, none, or progression. For patients with an initial treatment response, complete and partial, statistical analysis was used to assess the correlation between genetic mutations and time to progression. Median survival using Kaplan Meier estimation was performed and correlated to genetic mutations. 17 patients died before progression was assessed, and 6 patients were not yet evaluated post-procedure.

Results

The overall median survival was 32.8 months. Patients with the ERBB2 mutation had the longest median survival (70.2 months) while those with the RAD21 mutation had the shortest median survival (25.5 months). KDM5C and CBFB mutations had the highest response rates (100%, $p=0.00346$ and $p=0.01462$, respectively) while the H3C13 mutation had the lowest response rate (0%, $p=0.00222$). Of patients with an initial response to therapy, median time to progression was 32.8 months. The H3F3B mutation had the longest time to progression (105 months) while the RUNX1 mutation had the shortest time to progression (1.4 months).

Conclusion

Specific genetic mutations are associated with response and time to progression in patients with breast cancer liver metastasis treated with Y-90 radioembolization. This study underscores the impact genetic profiling can have in individualizing treatment plans and improving patient outcomes.

B59

Wefag Ahmed, M.D.

Advisor(s): Marcus Lambert, Ph.D.

Co-author(s):

Neonatal Sepsis Due to *Eikenella corrodens*: Case Report

Eikenella corrodens, a Gram-negative rod commonly colonizing the oral cavity and gastrointestinal tract, has rarely been implicated as an etiological agent in neonatal and perinatal sepsis. We describe a case of neonatal sepsis caused by *E. corrodens* in a premature infant.