

American Medical Women's Association



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I. Physician Division



The Vision and Voice of **Women** in Medicine

Awareness of women about uterine cervical cancer in southern Maharashtra region of India

Authors: Joshi R

Institution: Yashomangal Clinic

Presenter(s): Joshi, Radhika (drnandujoshi@yahoo.com)

Presentation Time: Saturday, 8:54 - 9:03am; Solano Room

ABSTRACT

Introduction –

Cervical cancer is a preventable disease. For control of cervical cancer we need to screen as many women as possible. Mass screening is not possible in India. For high risk screening and opportunistic screening the woman has to reach the screening place. We decided to increase awareness in women about cervical cancer screening so that they volunteer for screening.

Objectives –

1. To know about basic awareness of cancer of uterine cervix in women
2. To assess impact of education on the knowledge of awareness
3. Response to screening
4. How many benefited

Study design-

Period of study - 10 months.

1. Preparation - 2 months
 - Preparation of Questioner
 - Educational material
 - Book in regional language
 - Volunteer training
2. Data collection – 6 months
 - Filling up Questioner
 - Educating women with awareness programme
 - Filling up same form after getting information
 - Screening side by side
3. Data Analysis and Management of cases – 2 months

The questioner designed by us had women's socio-demographic data like age , education , marital status , occupation , socioeconomic status .The questioner about cervical cancer information included etiology , signs , symptoms , screening , vaccine , willingness for screening.

The awareness was given to women by trained volunteers.

Awareness was also done through slide shows, audio clips , videos and public talks for big groups.

The data analysis was done on socio-demographic data, risk factors, prevention, Detection of strong and weak knowledge areas.

Discussion –

- The findings in our study are explained.
- Shortcomings in the study noted.
- Future action and recommendation.

Digital Dementia Female Caregivers: Challenges, Feedback, and Opportunities

Authors: Rao A, Manteau-Rao M, Bouroukas A, Volgman A, Aggarwal NT

Institution: Neurocern, Inc.

Presenter(s): Rao, Anitha MD, MA (anitha@neurocern.com)

Presentation Time: Saturday, 9:03 - 9:12am; Solano Room

ABSTRACT

Author affiliations:

AR, MMR- Neurocern Inc

AB- Rush Medical College

AV- Rush Heart Center for Women, Department of IM, Division of Cardiology

NA- Rush Heart Center for Women, Rush Alzheimer's Disease Center, Department of Neurological Sciences

Background: More than 15 million individuals care for someone with Alzheimer's Disease Related Dementia (ADRD) in the US. Women comprise more than 60% of these caregivers (CG), with one-third being in the "sandwich generation" who care for an older adult and minor children. Caregiving, however, has come with a health cost. Many female CG have multiple medical co-morbidities, including hypertension and increased risk of heart disease, when compared to female non-CG. In addition, women who provide care for 9+ hours/day have an increased risk of coronary heart disease. This risk rises to 65% when considering ADRD CG. These issues affect women specifically, as there are 2.5 women for every man who lives with and cares for an individual in need.

Methods: Qualitative interviews were performed on 50 female ADRD CG. Open-ended questioning on main challenges of caregiving, general experience of the healthcare system, means of gathering information online, and short feedback from a demo experience of a web-based CG screener tool (Neurocern) was collected and main themes were identified.

Results:

Main challenges of caregiving included understanding, anticipating and meeting needs of the patient's dynamic ADRD symptoms. Most CG wanted care recommendations that were relevant to the patient's stage and type of ADRD. Lack of guidance and communication from healthcare provider networks was reported by most CG. More than 60% of CG were unaware of dementia or disease-specific advocacy organizations.

After the web-based CG screener tool demo, CG reported feeling "more informed to communicate ADRD symptoms to the patient's doctor" and receptive to "receiving personalized ADRD care recommendations online".

Conclusions

Targeting female CG with relevant disease and care information using web-based technology may be a worthwhile digital population health initiative, and offering this technology to female ADRD CG with heart disease may lead to improved CG heart health.

Telephonic single breath count test administered by nurses in diagnosing Myasthenia Gravis Exacerbation

Authors: Sampathkumar V, Govindarajan R

Institution: University of Missouri

Presenter(s): Veena Sampathkumar, MD (veenaasampatkumar@gmail.com)

Presentation Time: Saturday, 5:15 - 5:24pm; Diplomat B Room

ABSTRACT

Background:

There are no definite tests to diagnose MG exacerbation, and in some cases the symptoms can be confusing especially for allied healthcare personnel thereby leading to delay in its diagnosis. Further it is not uncommon for patients to call about MG exacerbation. As nurses triage patient phone calls regarding MG exacerbation, we need to better educate nurses to identify an exacerbation.

Objective:

To assess the usefulness of single breath count test (SBCT) administered by nurses over telephone in triaging Myasthenia Gravis (MG) exacerbation.

Methods:

This was a retrospective chart review of telephone records and clinic/hospital notes of patients who telephoned with suspected symptoms of MG exacerbation. Following evaluation of the patient at admission, the treating neurologist diagnosed MG exacerbation. Nurses received MG education and were trained on SBCT. Patient charts from January to December 2015, with specific information of SBCT to diagnose MG exacerbation were chosen. MG exacerbation event was defined when telephonic SBCT < 25. We also collected age, sex, number of calls and treatment plans. ANOVA was used to test statistical significance with $p < 0.05$ as significant.

Results:

Total of 25 patients (10 male, 15 female; age: 16-75 years; 12 seropositive) were included of which, 5 were on IVIg, 1 on IVIg and steroids, and rest on steroids. 45 (unique+repeat) patient calls fit the criteria for exacerbation. 20 had SBCT < 25 with true exacerbation on clinical exam. 8 had SBCT < 25 and did not have an exacerbation. 5 had SBCT > 25 and were deemed to not have an exacerbation, but were diagnosed as having one after patients came to ER on their own. The positive predictive value of SBCT was 71% ($p < 0.05$).

Conclusion:

SBCT is a good telephonic quantitative biomarker, and allied healthcare professionals can safely administer it to identify many cases of MG exacerbation.

Gender Differences in Medical Students Expectations of Hours Worked

Authors: Miller L

Institution: Western Michigan University School of Medicine

Presenter(s): Lisa Miller, MD (lisa.miller@med.wmich.edu)

Presentation Time: Saturday, 8:45 - 8:54am; Solano Room

ABSTRACT

Purpose

A study of dissatisfaction with the medical profession encourages medical students to have realistic expectations of the medical profession. Research reports the increase of women in the workplace has placed an increased emphasis on lifestyle consideration, including domestic tasks, when medical students contemplate specialties. Academic Medicine (2005) reported that “balance” and “controllable lifestyle” influenced male and female students’ specialty selection to accommodate new family and household structures. This exploratory study examines differences in student perceptions of time physicians spend on domestic tasks.

Methods

During their transition to clerkship course, 16 males and 9 females third year medical students completed the survey. Students were asked the number of hours a week a [specialty] physician spends doing domestic tasks such as laundry, cooking, or picking up the children for each of the following specialties: general surgery, internal medicine, psychiatry, pediatric and adolescent medicine, family medicine, radiology, and emergency medicine.

Results

The mean results indicate students believe surgeons (M= 9.72 hours) have the least number of hours to spend on domestic tasks compared to pediatricians (M=14.72 hours) who have the most time to spend on domestic tasks. The Wilcoxon Rank Sum test was used to analyze if a significant difference exists between responses across gender. A significance level of .05 was used for all tests. Findings indicate a significant difference between male and female perception of hours spent on domestic tasks for pediatric, emergency medicine and radiology physicians.

Conclusion

Changes in physician careers bring new demands requiring medical students to have realistic expectations of time requirements. This study indicates male and female students may have different expectations of time allotted for domestic tasks in some specialties. Future research is needed to promote realistic expectations and future career satisfaction.

II. Resident Division



The Vision and Voice of **Women** in Medicine

Assessing maternal mental health in rural Ghana

Authors: Pham A, Rickard D, Evans L, Donkor C, Obeng A, Dudovitz R

Institution: CHLA

Presenter(s): An Pham, MD (apham@chla.usc.edu)

Presentation Time: Saturday, 5:10 - 5:20pm; Diplomat A Room

ABSTRACT

Maternal stress is associated with low birth weight, decreased mother to child interaction, and increased risk of poor development. Ghana Health and Education Initiative (GHEI) is an NGO within the Bibiani-Anhwiaso-Bekwai (BAB) District that aims to improve child health and education, in part, through interventions to support mental health. We sought to adapt evidence-based, culturally appropriate tools to measure maternal stress and mood for a low-literacy, Twi-speaking community in rural Ghana

We modified the self-reporting questionnaire (SRQ-20) an evidence-based questionnaire developed by WHO to assess psychological stress in developing countries. We used key informant interviews to adapt SRQ-20 for use in a Twi-speaking, low-literacy community. Comparisons between the SRQ-20 scores and self-assessed placement on a mental health ladder were used to validate this tool. In-person questionnaires were administered to a population-based sample of 499 women aged 18-49 from a community in the BAB District of Ghana. Results were analyzed in STATA to determine population mean, distributions, and correlations between modified SRQ-20, mental health ladder, and child health outcomes.

Key informant interviews back-translation suggested difficulties with 3 items that were modified based on feedback. Cognitive interviews with 6 participants selected for a range of mental health and socio-demographic risk factors revealed correlation between modified SRQ-20 and ladder score of 0.73, higher scores corresponding to worse self-described mental health. Higher modified SRQ-20 scores were associated with a higher odds of maternal diarrhea ($p < 0.0001$), having a child with diarrhea ($p = 0.0123$), and having a child with fever ($p = 0.0001$). Neither the SRQ-20 nor ladder was significantly associated with the number of children under age 5 nor exclusive breastfeeding.

The modified SRQ-20 demonstrates good construct, internal, and external validity in this population. This tool might be used to track maternal stress in low-literacy populations in rural Ghana to identify mothers in need of additional support.

Refeeding a young and healthy mother

Authors: Chiang N, Ratelle J

Institution: Mayo Clinic

Presenter(s): Nian-En Chiang, MD (Chiang.Nian-en@mayo.edu)

Presentation Time: Saturday, 5:00 - 5:10pm; Diplomat A Room

ABSTRACT

CASE: A 25-year-old female with class I obesity (BMI 33) presented with a 2 day history of nausea and vomiting. She was breastfeeding her 6-month-old child while simultaneously trying to lose weight by restricting caloric intake to 1000 calories per day for the past 3 weeks. Her weight had decreased from 210 pounds to 200 pounds (4.7% weight loss). She had mild sinus tachycardia but other vital signs were normal. Her laboratory evaluation revealed metabolic acidosis with a pH of 7.11, anion gap of 30, bicarbonate of 8, and elevated beta hydroxybutyrate of 8.1. Her initial potassium, magnesium, calcium, and phosphate, were all within normal limits. A drug screen was negative for blood alcohol content, aspirin and acetaminophen toxicities. She was diagnosed with starvation ketoacidosis given the normal osmolar gap, glucose, lactate, and renal function. She was admitted for management.

Overnight, her nausea, tachycardia and acidosis all resolved after intravenous hydration and a meal consisting of pizza. However, she developed generalized weakness and was found to have electrolyte abnormalities including an extremely low phosphorous level of 1, potassium of 3, and magnesium of 1. Calcium was normal. She required replacement of phosphorus, potassium, and magnesium for 2 days before she was discharged from the hospital.

CONCLUSIONS: This case demonstrates starvation ketoacidosis and refeeding syndrome due to the combination of caloric restriction and breastfeeding in a young and obese, but otherwise healthy mother.

CLINICAL SIGNIFICANCE: Caloric requirements increase by 400 to 500 kcal per day for lactating mothers during first 12 months postpartum. The increased caloric expenditure from lactation in combination with dieting can lead to starvation ketoacidosis and risk for refeeding syndrome, even in mothers with a normal or elevated BMI and minimal weight loss. To prevent these complications, mothers should be counseled on approaches to weight loss while lactating.

A Review of Epidural Blood Patch for Postdural Puncture Headache in Obstetric Patients

Authors: Xi AS, Khan RF, Albrecht M

Institution: Massachusetts General Hospital

Presenter(s): Amanda Xi, MD (amandasxi@gmail.com)

Presentation Time: Saturday, 5:20 - 5:30pm; Diplomat A Room

ABSTRACT

Case: A 34 year old G2P1 with no significant past medical history presented at 39w3d with spontaneous rupture of membranes. She requested an epidural for labor analgesia. During the procedure, the dura was punctured and cerebrospinal fluid return was noted. The needle was removed and an epidural was subsequently placed in a different interspace. She had an uneventful spontaneous vaginal delivery. Less than 48 hours post-dural puncture, the patient noted a worsening positional headache that was resistant to conservative measures. She was offered an epidural blood patch for symptomatic relief. 24 hours post-procedure, she had resolution of her headache.

Conclusions: Postdural puncture headache is the most common and feared side effect of unintended dural puncture. Prevention and treatment options are limited, making this debilitating complication difficult to manage. Epidural blood patch is the gold standard treatment for moderate to severe postdural puncture headache.

Clinical Significance: Unintended dural puncture during labor epidural placement occurs in 0.5-4% of procedures. Headache occurs in 45-80% of patients with witnessed dural puncture and is thought to be due to leakage of cerebrospinal fluid out of the intrathecal space. An epidural blood patch has been shown to provide superior relief when compared to conservative treatment or sham procedure. This presentation aims to review the pathophysiology of postdural puncture headache and current treatment modalities with a focus on the epidural blood patch procedure.

Accuracy of Blood Loss Measurement During Cesarean Section

Authors: Doctorvaladan S, Jelks A

Institution: Santa Clara Valley Medical Center

Presenter(s): Sahar Doctorvaladan, MD (sahar.doctorvaladan@hhs.sccgov.org)

Presentation Time: Saturday, 8:00 - 8:09am; Solano Room

ABSTRACT

Sponsored by: Gauss Surgical

Objective: To compare the accuracy of visual, quantitative gravimetric and colorimetric methods used to determine blood loss during Cesarean section procedures employing a hemoglobin extraction assay as the reference standard.

Study Design: In fifty patients having Cesarean deliveries blood loss determined by assays of hemoglobin content on surgical sponges and in suction canisters was compared to obstetricians' visual estimates, a quantitative gravimetric method and the blood loss determined by a novel colorimetric system. Agreement between the assay and other measures was evaluated by the Bland-Altman method.

Results: Compared to the blood loss measured by the assay (470 ± 296 mL), the colorimetric system (572 ± 334 mL) was more accurate than either visual estimation (928 ± 261 mL) or gravimetric measurement (822 ± 489 mL). The correlation between the assay method and the colorimetric system was more predictive (standardized coefficient = 0.951, adjusted R² = 0.904) than either visual estimation (standardized coefficient = 0.700, adjusted R² = 0.490) or the gravimetric determination (standardized coefficient = 0.564, adjusted R² = 0.318).

Conclusion: During Cesarean section, measuring blood loss using colorimetric image analysis is superior to visual estimation and a gravimetric method. Implementation of colorimetric analysis may enhance the ability of management protocols to improve clinical outcomes.

Utility of Diverse Cardiac Testing in Low Risk Patients Presenting to the Emergency Department with Chest Pain

Authors: Howell SJ, Bui J, Thevakumar B, Amsterdam EA

Institution: University of California Davis Medical Center

Presenter(s): Stacey Howell (sjhowell@ucdavis.edu)

Presentation Time: Saturday, 9:21 - 9:30am; Diplomat B Room

ABSTRACT

Hypothesis: Diverse cardiac tests or no test in low risk patients presenting to the emergency department (ED) with chest pain can identify patients suitable for early discharge.

Methods: We analyzed a prospectively collected database of all low risk patients admitted to the ED-based chest pain unit (CPU) of the University of California, Davis, Medical Center between January 1, 2012, to January 1, 2014. Low risk was based on clinical stability, normal initial electrocardiogram and negative serum troponin. Early discharge was defined as discharge directly from the ED without inpatient admission.

Results: The study group comprised 719 patients with 52% women, mean age 58 ± 12 yr (27 to 92 yr), 63% with ≥ 2 cardiac risk factors and 15% with a history of coronary artery disease. The following cardiac testing was utilized: 40% (290) no test; 26% (187) myocardial perfusion scintigraphy; 26% (185) exercise treadmill test; 6% (44) exercise stress echocardiography; 2% (14) coronary angiography. In patients receiving cardiac testing, results were positive in 4% (17/430), negative in 88% (377/430) and non-diagnostic in 8% (36/430). Nearly all patients with no test, a negative test, and selected non-diagnostic tests had early discharge, of which 87% occurred at 700 consecutive low risk patients representing a broad and varied cohort presenting to the ED with chest pain demonstrate that a strategy of diverse cardiac testing, including no test in selected patients, can identify those suitable for safe, early discharge.

Oh, That Rings a Bell!: An Unusual Case of CNVII Palsy

Authors: Bagwell S, Booker KS, Willett L

Institution: UAB

Presenter(s): Sarah Bagwell, MD (sarahbagwell@uabmc.edu); K. Shannon Booker (Kbooker@uabmc.edu)

Presentation Time: Friday, 8:15 - 8:24pm; Diplomat A Room

ABSTRACT

Case:

A 68 year-old man was found to have acute onset of right cranial nerve seven (CNVII) palsy on morning rounds. Two weeks prior, he was admitted to the hospital for recurrent hemoptysis. He was treated for pneumonia and pleural effusion, eventually undergoing embolization and decortication. Days prior to presentation of CN VII palsy, he had developed acute unilateral hearing loss, persistent right ear bleeding, and severe right-sided headaches.

Exam revealed dried blood on right external ear, decreased gross hearing, and perforated bilateral tympanic membranes. Labs demonstrated normocytic anemia, thrombocytopenia, and abnormalities consistent with disseminated intravascular coagulation (DIC).

Although initial head imaging was negative, repeat CT showed a soft tissue lesion along the inferior skull base near the right jugular foramen, with extension into the middle ear and encasement of the internal jugular vein. Bone marrow biopsy revealed non-Langerhans malignant histiocytosis, and skull base biopsy showed sarcoma. The hemoptysis was thought to be due to coagulopathy, as he had no pulmonary involvement. Due to the patient's performance status and limited efficacy of chemotherapy, he proceeded with hospice.

Conclusions:

Histiocytic sarcoma (HS) is a rare aggressive hematological malignancy, with only a few hundred cases reported. It can be isolated or occur with another hematological neoplasm. No predisposing factors have been identified. The majority of presentations are due to compression of surrounding organs or a palpable mass; a third present with cytopenias. DIC has also been reported. Due to the rarity of this disease, there is no standardized treatment. Cytotoxic chemotherapy has limited efficacy. Some harbor the BRAF mutation, therefore BRAF inhibitors are being used in trials.

Clinical Significance:

Upon reviewing the literature, we believe this is the first documented case of HS presenting as a facial nerve palsy. This case reminds us of the importance of building a differential diagnosis.

Brain Pain: a symptom of iron drain?**Authors:** Bauer M, Coleman D, Gambill L**Institution:** UC Davis Children's Hospital**Presenter(s):** Maya Bauer, MD (maya.wolpert@gmail.com)**Presentation Time:** Friday, 12:36 - 12:45pm; Diplomat B Room

ABSTRACT

A 10 year old African American girl with history of alpha thalassemia presents with one week of left-sided headaches and visual changes. On admission, patient is well-appearing with normal vital signs and weight at the 42nd percentile for age. Ophthalmologic exam significant for disc edema and left peripapillary hemorrhage. Neurologic exam significant for mild impairment in left lower visual field, otherwise negative. Head CT and MRI/MRV – performed to evaluate for intracranial bleed, mass, or venous thrombosis – both negative for intracranial abnormality. Lumbar puncture significant for elevated opening pressure (41). CSF studies normal, and cultures with no growth. Initial labs show severe anemia (Hgb 3.6, Hct 14.0) and thrombocytosis (840). Patient is subsequently found to be severely iron deficient, with positive FOBT.

Idiopathic intracranial hypertension (IIH) is a rare but documented presentation of iron deficiency anemia. The relationship between IIH and anemia remains unclear, but numerous hypotheses have been proposed. Hyperviscosity in iron deficiency anemia may increase venous pressure, decreasing the rate of CSF resorption and leading to elevated ICP. Alternatively, cerebral hypoxia and edema secondary to low hemoglobin and inadequate oxygen-carrying capacity may raise the ICP. Iron deficiency anemia is considered a hypercoagulable state and has been associated with venous and arterial cerebral thrombosis, though in many patients with iron deficiency anemia and IIH, MRI/MRV is negative for thrombosis. It is recommended that all patients presenting with IIH, (particularly those without other risk factors such as obesity) be evaluated for anemia.

While the relationship between IIH and anemia remains ambiguous, it is suggested that correction of the patient's anemia corrects the increased ICP without the need for other interventions. Indeed in our patient, following pRBC transfusion, her hemoglobin rose to 9.4 and within a couple of days, she consistently denied headaches and visual symptoms. During her hospital stay, our patient underwent GI workup for her severe iron-deficiency anemia. EGD and colonoscopy biopsy results are pending.

A 37 Year Old Woman with Preeclampsia and Respiratory Failure

Authors: Berger JA, Juarez M

Institution: Johns Hopkins Hospital

Presenter(s): Jessica Berger, MD (jberge34@jhmi.edu); Michelle Juarez, BS (mjuarez4@jhmi.edu)

Presentation Time: Saturday, 8:09 - 8:18am; Diplomat B Room

ABSTRACT

Case:

A 37-year-old multiparous woman with obstructive sleep apnea, morbid obesity, and gestational hypertension presented at 35+1/7 weeks gestation for respiratory distress and preeclampsia. Recent history is notable for ICU admission at 31 weeks for acute-on-chronic respiratory failure managed with continuous positive airway pressure (CPAP) and diuresis. Echocardiogram showed mild left ventricular hypertrophy with normal biventricular function. CT-angiogram was negative for embolus.

On arrival, the patient's blood pressures measured 160-170/80-90 mm Hg, consistent with preeclampsia with severe features. On CPAP 5 mm Hg, her exam was concerning for tachypnea to 50 breaths per minute, crackles and 2+ pitting edema to the abdominal wall. Her cervix was 4 cm dilated with 70% effacement. She did not meet criteria for HELLP syndrome. Initial chest X-ray showed cardiomegaly and moderate pulmonary edema. An arterial blood gas showed pH 7.26, pCO₂ 65. Despite diuresis and oxytocin, hypoventilation persisted and her cervical exam remained unchanged. Her mental status waned, suggesting CO₂ narcosis. Our anesthesia team was consulted for urgent cesarean delivery.

We chose general anesthesia with intubation to improve ventilation and protect the airway given her anasarca. She could not maintain adequate tidal volumes while supine and breathing spontaneously. This was a deterrent to neuraxial anesthesia. She was positioned with a ramp, induced by rapid sequence with ketamine and rocuronium, and intubated with a video laryngoscope. Her post-intubation blood gas showed pH 7.35, pCO₂ 48. Post-operatively, she remained intubated in the ICU for 24 hours.

Conclusions:

General anesthesia can be used to optimize conditions for patients with cardiopulmonary comorbidities undergoing high-risk cesarean sections.

Clinical Significance:

Obesity and obstructive sleep apnea are common. Edema associated with preeclampsia can exacerbate chronic respiratory failure. Impaired ventilation while supine and/or thrombocytopenia, as in HELLP syndrome, pose contraindications to neuraxial anesthesia. Careful planning can facilitate safe general anesthetic care of this population of pregnant women.

An unusual cause of cold-induced rash**Authors:** Chen JCY, Cho J, Chowdhary V**Institution:** Mayo Clinic**Presenter(s):** Joy C. Y. Chen, MD (chen.chieh-yu@mayo.edu)**Presentation Time:** Friday, 12:09 - 12:18pm; Diplomat A Room

ABSTRACT

CASE

A 67-year-old male with a history of pulmonary embolism presented with a 2 week history of lower extremity rash and pain worse with cold exposure. He had a purpuric rash with ruptured bullae over his legs, livedo reticularis over his upper thighs and an ischemic ulcer at his distal left third finger. An immunological work-up showed low complement levels (C3 and C4), a negative anti-nuclear antibody test, and Type 1 cryoglobulins were detected, with a cryocrit of 50%. Hepatitis serology and HIV screen were negative. Immunofixation showed a monoclonal IgG kappa with elevated kappa free light chains of 58.9 (0.33 to 1.94) and elevated kappa to lambda ratio of 72.6 (0.26 to 1.65). Bone marrow biopsy showed plasma cell myeloma with 20% kappa light chain-restricted plasma cells. Skin biopsy revealed epidermal necrosis from intraluminal occlusion. Based on bone marrow biopsy, he was diagnosed with IgG-kappa smoldering multiple myeloma, and symptoms were attributed to type 1 cryoglobulinemia. He was started on cyclophosphamide, dexamethasone, and lenalidomide for treatment of his myeloma. His lower extremity rash and pain improved with treatment.

CONCLUSION

Cryoglobulins are immunoglobulins that precipitate at temperatures less than 37°C. Type 1 cryoglobulinemia consists of monoclonal immunoglobulins and is typically associated with B-cell proliferative disorders. Type 1 cryoglobulinemia causes symptoms related to hyperviscosity, such as digital ischemia, livedo reticularis, and purpura.

SIGNIFICANCE

The prevalence of cryoglobulinemic vasculitis is estimated at 1 in 100,000. Type 1 cryoglobulinemia is the least common, accounting for 10-15 % of cases. The presence of cryoglobulins is essential for making the diagnosis. With type 1 cryoglobulinemia, biopsy of the affected organ shows noninflammatory thrombosis. Type 1 cryoglobulinemia is always associated with a B cell proliferative disorder; moreover, the treatment and prognosis depend on the underlying hematologic malignancy.

Bilateral ear swelling in the setting of myelodysplastic syndrome

Authors: Cho J, Chen JCY, Chowdhary V

Institution: Mayo Clinic

Presenter(s): Janice Cho, MD (cho.janice@mayo.edu)

Presentation Time: Friday, 7:30 - 7:39pm; Diplomat A Room

ABSTRACT

CASE

A 65-year-old male with a history of high-grade myelodysplastic syndrome (MDS) presented with head and neck pain, bilateral ear pain and swelling with hearing loss and left cranial nerve VII palsy. In the last three to four months, he had a 50 pound unintentional weight loss, night sweats, and chills. His sedimentation rate and C-reactive protein were elevated at 47 mm/hr and 161 mg/L respectively. ANA and ANCA panel were negative. There was significant swelling over the bilateral pinna with sparing of the lobule with exquisite tenderness to palpation. There was also tenderness of the tracheal cartilage upon palpation. With this constellation of symptoms and his MDS history, relapsing polychondritis (RP) was subsequently diagnosed. He was given a three-day course of Solu-Medrol and a one month course of high-dose prednisone with slow taper. His hearing loss improved with significant decrease in the pinna swelling. His RP was managed by treating the underlying condition, MDS, with azacitidine.

CONCLUSIONS

Relapsing polychondritis is characterized by inflammation and destruction of cartilage. It can affect the cartilage in ears, nose, and respiratory tract. It may also affect eyes, cardiac valves, blood vessels, joints, and skin. Hearing loss, vestibular dysfunction, and arthritis may also be seen. RP is often associated with autoimmune disease, vasculitis, and hematologic disorders or malignancies.

SIGNIFICANCE

The annual incidence of relapsing polychondritis is 3.5 cases per million. It is a rare disorder with multiple etiologies. Along with starting treatment with anti-inflammatory medications, it is important to identify the underlying etiology and initiate treatment as soon as possible. It is necessary to rule out vision, vascular, or airway involvement. It may be prudent to consider pulmonary function tests to quantify RP involvement of the airway.

Acute symptomatic seizure in the setting of severe hypomagnesemia and hypercalcemia: An uncommon association provides therapeutic target

Authors: Coffee E, Clarkson S

Institution: University of Alabama Birmingham

Presenter(s): Elizabeth Coffee, MD (eacoffee@uabmc.edu)

Presentation Time: Friday, 8:15 - 8:24pm; Diplomat B Room

ABSTRACT

Case

A 65-year-old African American woman with stage III pancreatic adenocarcinoma, obstructive jaundice status post biliary drain placement, diabetes mellitus II, and primary hyperparathyroidism presented septic secondary to drain site infection. She was febrile and jaundiced; labs revealed leukocytosis, hyperbilirubinemia, corrected calcium 10.1mg/dl. She responded well to antibiotics, however on day six became combative and confused and subsequently had a generalized tonic-clonic seizure. On antiepileptic therapy, altered mentation and EEG abnormalities persisted. Labs revealed magnesium 0.8mg/dl, ionized calcium 1.39mmol/L, PTH 230pg/ml, vitamin D 8.76ng/ml, and fractional excretion of magnesium 27%. Despite aggressive repletion, magnesium continued fluctuating and altered mentation persisted until initiation of cinacalcet with subsequent stabilization of electrolytes and neurologic status.

Conclusions

We present a case of acute symptomatic seizure in the setting of severe hypomagnesemia and hyperparathyroidism. After ruling out other causes, severe hypomagnesemia was deemed the etiology of her seizures. The above patient had multiple risk factors for hypomagnesemia, including advanced cancer, DM, and impaired GI absorption and renal wasting as indicated by the fractional excretion of magnesium. Importantly, hypercalcemia proved the crucial contributing factor suggested by stabilization of her clinical status only after initiation of a calcimimetic.

Clinical Significance

Despite known associations, the incidence of adult seizures attributed to electrolyte imbalances has not been ascertained. Available reports of seizures due to hypomagnesemia are largely in patients with gastrointestinal abnormalities or neonates. However, this patient developed severe hypomagnesemia largely owing to renal wasting exacerbated by hypercalcemia. Along with the importance of metabolic investigation in patients with altered mentation, this case illustrates the less known association of hypomagnesemia with hypercalcemia. Hypercalcemia can reduce renal magnesium reabsorption via the basolateral calcium sensing-receptor (CaSR) in the thick ascending limb. This association provided the successful therapeutic target in this patient, suggesting a more influential role than previously suggested in the literature.

Mother or Monitor: Who is to be Trusted?

Authors: DeLuna P, Tran T

Institution: Johns Hopkins University SOM

Presenter(s): Patricia DeLuna, MD (pdeluna1@jhmi.edu)

Presentation Time: Friday, 8:51 - 9:00pm; Diplomat A Room

ABSTRACT

Case

Patient with pre-eclampsia and HELLP syndrome presented for an urgent caesarian section due to rapidly decreasing platelets. She received magnesium and labetalol treatment to manage her elevated blood pressures. Her preoperative antibiotics included clindamycin and gentamicin. Neuraxial techniques were not considered due to decreasing platelets, putting her at a higher hematoma risk. She was intubated using succinylcholine and propofol. Despite deepening her inhaled anesthetics, her respiratory efforts were asynchronous with the ventilator and her movement hindered surgery. We administered 50 mg rocuronium to provide continued paralysis.

At the conclusion of surgery, no twitches were detected on the train of four monitor. However, she was spontaneously breathing with augmented breaths on pressure support ventilation. She opened her eyes and nodded appropriately to questions. Based on these observations, full dose neostigmine and glycopyrrolate was given to reverse neuromuscular blockade. She remained weak and did not meet extubation criteria after an hour. We transported her to the ICU for continued monitoring. She was extubated after her respiratory and clinical strength improved without need for further intervention.

Conclusions

The patient experienced prolonged neuromuscular blockade after receiving rocuronium while on a magnesium infusion. The interesting observation was that she demonstrated clinical signs of return of muscle function despite zero twitches on the monitor. Her failure to improve after receiving reversal agents demonstrated that the monitors were more accurate predictors of depth of her muscle paralysis. Magnesium, gentamicin, and clindamycin can significantly prolong neuromuscular blockade, leading to ineffectiveness of reversal agents.

Clinical significance

Managing pre-eclampsia during caesarian delivery presents many challenges for anesthesiologists. Altered effects of neuromuscular blockade must be considered for patients receiving magnesium and antibiotics as they might augment and prolong the effects of neuromuscular blockade. Twitch monitors are important adjuncts to clinical movements in determining the return of muscle strength and function.

Avoiding Weakness: A case of successful regional nerve block in a patient with inclusion body myositis

Authors: Koessel S, Han Liu R, Zhang L, Segna K

Institution: Johns Hopkins

Presenter(s): Sophia Koessel, MD (skoesse1@jhmi.edu); Rui Han Liu (rliu29@jhmi.edu); Lisa Zhang (lzhn122@jhu.edu)

Presentation Time: Friday, 8:15 – 8:24pm; Solano Room

ABSTRACT

Case: The patient is a 55 year old woman with inclusion body myositis, which manifested as upper and lower extremity weakness and dysphagia, who underwent an elective right thumb fusion and tendon transfer for profound weakness of the flexors of her right hand. The anesthesia team decided to perform a regional nerve technique due to the concern that her condition may predispose her to increased risk of respiratory compromise after general anesthesia and neuromuscular blockade. However, there was also very scant literature about whether regional anesthetic technique may exacerbate her preexisting upper extremity weakness. An axillary brachial plexus block and an intercostobrachial block were performed using 30mL of 0.5% Ropivacaine. The block was successful, and she had an uncomplicated recovery from the surgery.

Conclusion: In this patient with inclusion body myositis and dysphagia, which may predispose to complications such as aspiration or prolonged ventilator-dependence after general anesthesia and neuromuscular blockade, a regional nerve block was successfully performed without exacerbating her pre-existing upper extremity weakness.

Clinical Significance: There is currently no consensus in the literature about the safety of general anesthesia or neuromuscular blockade for patients with inclusion body myositis, especially in those with bulbar symptoms such as dysphagia. However, there is also a lack of data about whether regional anesthetic techniques can be safely performed in these patients. This case is an example of an axillary and intercostobrachial nerve block that was performed successfully on a patient with inclusion body myositis.

Acute Embolic Myocardial Infarction and Heart Failure in a Pediatric Fontan Patient

Authors: Koszela K, Bongiorno D, Shah L, Kramer J, Beasley GS, Noje C, Vricella LA, Rinel R, Goswami D, Nelson-McMillan K

Institution: The Johns Hopkins University College of Medicine

Presenter(s): Keri Koszela, MD (kkoszel1@jhmi.edu); Diana Bongiorno (dbongio2@jhmi.edu); Lochan Shah (lshah5@jhmi.edu)

Presentation Time: Saturday, 8:45 - 8:54am; Diplomat B Room

ABSTRACT

Case: An 11-year-old male with severely unbalanced AV canal with right ventricular predominance s/p fenestrated Fontan >5 years earlier and poor compliance with aspirin therapy presented with syncope and altered mental status (AMS) during exercise. Patient became obtunded in the ED necessitating urgent intubation. CT head was negative for intracranial bleed. On arrival to the PICU, EKG was remarkable for ST elevations in II, III and aVF with a new RBBB, and TTE demonstrated severe global right ventricular dysfunction. CTA of the head, neck and coronaries was performed, revealing non-filling pattern of the mid-portion of the RCA consistent with ST segment elevation MI (STEMI). Subsequent successful revascularization of the RCA in the cardiac catheterization lab revealed a left-dominant coronary artery system. An intra-aortic balloon pump (IABP) was placed due to ongoing severe right ventricular failure with subsequent recovery after 3 days. He was discharged home with aspirin and warfarin.

Conclusions: Patients with Fontan circulation are at increased risk for thromboembolic events. This presentation of syncope and AMS was concerning for neurologic versus cardiac thromboembolic event, and he was ultimately found to have a STEMI with thrombus occluding the RCA. This patient has a single, systemic right ventricle; therefore, his RCA STEMI was complicated by severe acute right (systemic) ventricular failure. An IABP was used to augment coronary perfusion and reduce systemic afterload.

Clinical Significance: STEMI in a patient with Fontan circulation is a rare event and, to our knowledge, heretofore unreported in a patient this young. This case highlights the need to consider MI on the differential of AMS in a patient with Fontan circulation and the need for cooperation between adult and pediatric cardiology and critical care providers given rarity of MI management in pediatric patients. It also highlights challenges of choosing ideal anticoagulant regimens to reduce thromboembolic risk.

Poorly controlled asthma and progressive, palpable purpura in a young woman

Authors: Kuftinec G, Sami M, Aronowitz P

Institution: University of California, Davis

Presenter(s): Gabriela Kuftinec, MD (gabikuftinec@gmail.com)

Presentation Time: Saturday, 8:36 - 8:45am; RM 237 Room

ABSTRACT

Introduction:

Eosinophilic granulomatosis with polyangitis (EGPA), or Churg-Strauss syndrome (CSS), is a small to medium vessel vasculitis characterized by eosinophilic infiltration of organs with necrotizing granulomas. The disease is typically characterized by three phases: Asthma preceding the vasculitic phase by 8-10 years, elevated eosinophil levels, and finally, the vasculitic phase which can manifest in a variety of ways. Here we describe an interesting case of this rare disease.

Case:

A 28 year-old woman with history of 6 years poorly controlled asthma presented with one-week of a painful, non-pruritic rash, accompanied by bilateral ankle and left hand swelling and paresthesias. On admission, she complained of 4 days of fevers and diffuse, sharp abdominal pain and 1 day of left foot drop. Physical examination revealed a young woman with palpable purpura in the right antecubital fossa and abdomen, entire posterior thorax, left ankle and on extensor surfaces of the lower extremities. A small grouping of petechiae was noted on her hard palate. She had diffuse abdominal tenderness. Pulmonary exam revealed mild expiratory wheezing. Neurologic exam was remarkable for 0/5 strength of left foot plantar flexion.

White blood cell differential revealed a high predominance of eosinophils (36%). Skin biopsy revealed C3 and IgA reactivity and markedly elevated serum myeloperoxidase (MPO) levels, but no eosinophilia. She was started on pulse dose steroids with subsequent improvement in her respiratory, cutaneous, and gastrointestinal symptoms. Her foot drop improved slowly, eventually necessitating transfer to a Physical Medicine and Rehabilitation unit.

Discussion:

CSS is a rare disorder, with an incidence of 1.3-6.8 cases per 1,000,000 patients per year. Treatment is based on prognostic criteria as defined by the Five-Factor Score (FFS). CSS is highly responsive to steroid therapy, with long-term survival of around 90% over 20 years. Consequently, early recognition and treatment are extremely important to facilitate the best patient outcomes.

Unrecognized Subdural Blockade Complicates Conversion from Labor Analgesia to Cesarean Delivery Anesthesia

Authors: Peacock JN, Toledano RD

Institution: SUNY Downstate Medical Center

Presenter(s): Jennifer Peacock, MD (jennifer.peacock@downstate.edu)

Presentation Time: Saturday, 8:36 - 8:45am; Diplomat B Room

Case

An otherwise healthy 33-year-old G5P2 in spontaneous labor requested epidural analgesia at 4 cm cervical dilation. An experienced practitioner placed an uneventful combined spinal-epidural at L3/4, with negative aspiration for cerebrospinal fluid and blood. Isobaric bupivacaine 2 mg and fentanyl 15 mcg were administered intrathecally, followed by an epidural infusion of bupivacaine 1% with fentanyl 2 mcg/ml. After two hours, labor was obstructed by fetal malpresentation, and the patient proceeded to cesarean delivery.

While dosing the catheter with 8 ml of lidocaine 2% with epinephrine and sodium bicarbonate to attain cesarean delivery anesthesia, the patient complained of left-sided facial numbness and dyspnea. She also developed ptosis, decreased grip strength, increased analgesia from T4 to T2, and mild hypotension, consistent with subdural blockade (SDB). The anesthesia team elected to use the subdural catheter for surgical anesthesia, and the patient remained comfortable for the duration of the surgery without sequelae.

Clinical Significance

SDB is a rare complication of neuraxial anesthesia, with a reported incidence ranging from 0.82% to 13%.^{2,5} It can occur if the epidural needle disrupts the dura mater, the epidural catheter is threaded into the subdural space, or the catheter migrates.⁴ The classic presentation is greater than expected sensory block and variable motor block of slow onset (10-20 min) after an uneventful epidural placement with a negative test dose and/or aspiration.⁴

Conclusions

Diagnosis of SDB is clinical, based on the presence of two major criteria (unexpected, extensive sensory block and negative aspiration test) and one minor criterion (delay in onset of motor or sensory block 10 minutes, variable motor block, or sympathectomy out-of-proportion to dosage).^{1,2} Imaging is not recommended, and treatment is supportive. The use of subdural catheters for analgesia and anesthesia is controversial.^{1,3}

Esthesioneuroblastoma Presenting as Psychotic Depression: The Importance of a Differential Diagnosis

Authors: Qu J, Price K

Institution: Mayo Clinic- Rochester

Presenter(s): Jie Qu, MD (qu.jie@mayo.edu)

Presentation Time: Saturday, 8:00 - 8:09am; Diplomat B Room

ABSTRACT

Case: A previously healthy 57-year-old man presented with acute depression with psychosis, refractory to antidepressant therapy. After several months, MRI head demonstrated a mass in the nasal cavity extending through the cribriform plate into bilateral sphenoid, ethmoid sinuses, and anterior cranial fossa. Biopsy revealed esthesioneuroblastoma. In retrospect, the patient's family recalled symptoms of anosmia and chronic sinusitis. High-dose dexamethasone was initiated. One month later, he presented to Mayo Clinic for multidisciplinary evaluation. His performance status had declined such that he was somnolent, unable to answer questions or ambulate independently. He was not felt to be a candidate for surgery or chemoradiation and the patient's family was advised to consider supportive cares only.

Several days later, patient presented to the emergency room due to further mental status decline, which was presumed to be related to his tumor. Laboratories revealed potassium 6.3, glucose 1027, beta-hydroxybutyrate of 5.1, and hemoglobin A1c 9.7%. He was admitted to the ICU for insulin therapy and a steroid taper for steroid induced diabetes. Abdominal CT showed free intraperitoneal air, and he underwent sigmoid resection for a bowel perforation. After a prolonged hospital stay, patient recovered cognitively and was discharged to a rehabilitation facility. Eventually, he underwent bifrontal craniotomy and craniofacial resection for a Hyams grade 2 of 4 esthesioneuroblastoma with plans for adjuvant post-operative radiotherapy.

Conclusions: Esthesioneuroblastoma is a rare neoplasm originating from the olfactory neuroepithelium. Nasal obstruction and anosmia are common presentations. We describe esthesioneuroblastoma presenting as psychotic depression.

Clinical Significance: In this case, initial diagnosis of esthesioneuroblastoma was delayed as the patient's symptoms were attributed to refractory depression without brain imaging. Once the diagnosis was established, his continued decline was attributed to the tumor, when multiple medical co-morbidities were present, an oversight that could have denied the patient curative therapy. This case demonstrates the importance of a differential diagnosis throughout a patient's clinical course.

Primary Cardiac Lymphoma

Authors: Quiroz E, Yu Z, Momin F

Institution: William Beaumont Hospital

Presenter(s): Elisa Quiroz, MD (equiroz@umich.edu)

Presentation Time: Saturday, 8:45 - 8:54am; Diplomat A Room

ABSTRACT

Primary cardiac lymphoma (PCL) is a rare condition described as a lymphoma localized to the heart or pericardium. Although cardiac involvement is seen in 10-20% of non-Hodgkin's lymphomas, PCL is extremely rare. It comprises merely 0.5% of all lymphomas and 1.3–2% of cardiac malignancies.(2-3) Clinical presentation typically correlates with the cardiac region involved. As in the case of our patient, malignant pericardial effusion presents classically with chest pain and dyspnea. It is often a clinical emergency as PCL commonly presents with heart failure, cardiac tamponade, or arrhythmia. (1)

An 85-year-old female presented with complaint of dyspnea and chest pain. She denied fever, chills or lower extremity edema and had no history of malignancy, weight loss or night sweats. Chest CT revealed a pericardial effusion and subsequent echocardiogram demonstrated a large circumferential effusion with respiratory variation concerning for impending tamponade. She was admitted to the intensive care unit (ICU) and underwent emergent pericardiocentesis.

Flow cytometry of the fluid revealed a population of monoclonal B-cells with significant large cell component. Overall morphologic and immunophenotypic features were consistent with high grade B-cell lymphoma with t(8;14). Bone marrow biopsy demonstrated <1% of monotypic B-cells confirming the diagnosis of primary cardiac lymphoma.

The patient was started on rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisone (R-CHOP) with excellent response. She was transferred out of the ICU within days and discharged home for outpatient follow up.

Primary cardiac lymphoma is a rare entity and early detection is essential to avoid potentially fatal complications. Prognosis is highly dependent on the management of cardiac complications. The etiology of PCL is still unknown and molecular characterization has yet to be studied leaving a great deal of research to be done in order to gain a better understanding of this rare disease process.

Chim CS, Chan ACL, Kwong YL, et al: Primary cardiac lymphoma. *Am J Hematol* 1997;54:79–83.

Ceresoli GL, Ferreri AJ, Bucci E, et al: Primary cardiac lymphoma in immunocompetent patients: Diagnostic and therapeutic management. *Cancer* 1997;80:1497–1506.

Ikeda H, Nakamura S, Nishimaki H, et al: Primary lymphoma of the heart: Case report and literature review. *Pathol Int* 2004;54(3):187–195.

A Case for Understanding the Early Masquerading Signs of ALS

Authors: Seidel K

Institution: Mayo Clinic

Presenter(s): Kimberly Seidel, MD (seidel.kimberly@mayo.edu)

Presentation Time: Saturday, 8:27 - 8:36am; Solano Room

ABSTRACT

Case: A 76-year-old woman initially presented with progressive right lower limb weakness and more gradual left lower limb weakness. Exam revealed right lower limb weakness and hyperreflexia in lower limbs greater than upper and right lower limb greater than left. Lumbar spine MRI revealed mild stenosis. Electromyography (EMG) revealed acute on chronic right L5-S1 radiculopathy and chronic bilateral L2-S1 radiculopathy. Lumbar laminectomy provided minimal symptom improvement. Her symptoms worsened requiring admission to nursing home, including right greater than left upper limb weakness, dyspnea on exertion, voice weakness, and lower limb edema. Repeat MRI of entire spine did not reveal any symptom explanation. One year after symptom onset, evaluation at a tertiary care center revealed bilateral upper and lower limb weakness, diffuse hyperreflexia, mild tongue fasciculations, fasciculations in all limbs, bilateral upgoing Babinski signs, and lower limb spasticity. EMG revealed chronic, severe, diffuse motor neuron disease consistent with amyotrophic lateral sclerosis (ALS).

Conclusion: ALS is a motor neuron disease that manifests with both upper and lower motor neuron (UMN/LMN) findings. Diagnostic criteria include LMN degeneration on clinical exam or EMG, evidence of UMN degeneration on exam, and progressive spread of symptoms on history or exam. Careful examination and diagnostic testing with EMG is imperative to making the correct diagnosis but results may be misleading in the initial stages of the disease.

Clinical Significance: Early and accurate diagnosis of ALS is important to guide symptomatic treatment throughout the disease course. Having a thorough understanding of symptoms and findings early in ALS compared to other disease processes such as lumbar radiculopathy aid in diagnosis and formulating a treatment plan. This case demonstrates how a multitude of symptoms along with test findings can make the diagnosis of ALS early in the disease difficult, leading to treatments that may not, ultimately, be beneficial.

The Puzzling Finding of a Positive Pregnancy Test in a Post-Menopausal Woman without Ovaries

Authors: Tse CS, Mohabbat AB

Institution: Mayo Clinic

Presenter(s): Chung Sang Tse, MD (tse.chung@mayo.edu)

Presentation Time: Saturday, 8:27 - 8:36am; Diplomat A Room

ABSTRACT

Clinical Case: A 56-year-old post-menopausal woman with history of total abdominal hysterectomy with bilateral salpingo-oophorectomy (TAH-BSO) presented with an acute abdominal pain, obstipation, nausea, and emesis. The pain was rated 8/10, generalized, and colicky with "pain attacks" every three minutes. She was hemodynamically stable. Physical examination was significant for mild abdominal distention with tympany and tenderness to palpation in the bilateral lower quadrants; a well-healed mid-incisional laparotomy scar was seen; guarding and rebound tenderness were absent. Laboratory testing revealed hemoglobin 11.8 g/dL, white blood cell $11.6 \times 10^9/L$, platelets $404 \times 10^9/L$, and creatinine 0.8 mg/dL. An extended electrolyte panel and liver function tests were normal. Interestingly, a spot urine pregnancy test positive. Quantitative human chorionic gonadotropin (hCG) was not obtained.

Following hospital admission, computed tomography (CT) of the abdomen and pelvis revealed dilated loops of small bowel with a maximum diameter of 3 cm and a transition point in the pelvis. There was no closed bowel loop, pneumoperitoneum, free abdominal fluid, or portal venous gas. On further history, the patient states that she has a TAH-BSO four years ago as part of an extensive abdominal debulking surgery for Stage IV serous ovarian adenocarcinoma with diffuse peritoneal involvement. She was receiving chemotherapy with letrozole and everolimus. She was diagnosed with partial small bowel obstruction secondary to adhesions or malignant intestinal compression. After two days of ineffective conservative management, she was given an oral Gastrografin challenge with resultant resolution of bowel obstruction. She was discharged on hospital Day 4 in stable condition.

Conclusion: A 56-year old post-menopausal woman with history of ovarian cancer and TAH-BSO presented with partial small bowel obstruction and had a positive pregnancy test. The etiologies of false positive pregnancy test includes age, contaminated samples, assay interference, trophoblastic disease, and non-trophoblastic malignancies.

Clinical Significance: Although the pregnancy test for hCG is a common, fast, and inexpensive component for the evaluation of abdominal pain in women, there exists a broad differential for non-pregnancy related positive pregnancy tests that must be considered.

Postpartum Urinary Retention

Authors: Liu R, Kerr CC, McCarrick J

Institution: Santa Clara Valley Medical Center

Presenter(s): Rosa Liu, MD (rosa.liu@hhs.sccgov.org)

Presentation Time: Saturday, 9:30 - 9:39am; Diplomat A Room

ABSTRACT

Postpartum Urinary Retention (PPUR) is a common condition. Despite a cited prevalence of up to 45%, there are currently no consensus guidelines on its diagnosis, prevention, and management. This variation in clinical practice can lead to inconsistent and mismanaged care. Unfortunately, poorly managed cases may lead to prolonged voiding dysfunction, recurrent urinary tract infections, ureteric reflux and possibly irreversible bladder and/or renal damage. PPUR is generally treated with bladder rest via indwelling catheters, which limit movement and may pose barriers to breastfeeding and caring for a newborn. In addition, catheters are the leading cause of urinary tract infections, the single most common hospital acquired infection. Since the treatment can cause problems itself, it is far more beneficial to take reasonable measures to prevent PPUR rather than respond once symptomatic. As such, my project aimed to review the literature and create a best practice for postpartum bladder care pertaining to a county hospital population. We implemented our protocol in our postpartum ward and followed the outcomes.

Methods:

An algorithm was created as a guideline for residents, attendings, and postpartum nurses using available data on postpartum bladder function for management of PPUR. Elements include:

- length of time after delivery or catheter removal that a postpartum patient should void
- measures and interventions to aid in voiding
- education on symptoms of urinary retention
- nursing clinical competency training for bladder scanning
- algorithm guided management dependent on postvoid residual volume
- standardizing notes for documentation in EMR
- creating an EMR order set for improved care coordination and communication

Conclusions: We devised and implemented a standardized approach to the diagnosis and management of PPUR with input from patients, doctors, nurses, and administration. Through surveys and chart review, we found heightened awareness of this issue, consistent management and improved patient care.

Intimate Partner Violence: A Potentially Devastating Gap in Ophthalmic Education

Authors: Provencher LM, Clark TJE, Cohen AR, Shriver EM

Institution: University of Iowa, Department of Ophthalmology

Presenter(s): Lorraine Provencher, MD (lorraine-provencher@uiowa.edu)

Presentation Time: Saturday, 9:21 - 9:30am; Diplomat A Room

ABSTRACT

Background: Approximately 1 in 3 American women experience intimate partner violence (IPV) in their lifetime; 45% of these patients will have involvement of the eyes. IPV is the third leading cause of orbital floor fractures and the fourth leading cause of ocular trauma in women. Despite high prevalence and a propensity for ocular/periorcular injury, the ophthalmic community has historically overlooked IPV. Research in other specialties has shown that physicians have poor understanding of IPV prevalence and screening, highlighting the need for improved clinical education. This study aimed to test IPV knowledge among ophthalmology residents, fellows, and faculty.

Methods: A 10-question, multiple choice pre-test on IPV prevalence, characteristics, and screening was administered.

Results: Thirty-one pre-tests were completed (20 residents, 6 fellows, 5 faculty) with a mean overall score of 49%. Residents, fellows, and faculty scored 47%, 50%, and 56%, respectively. Test-takers performed the lowest (19.4% correct) on a question regarding IPV screening; 25 of 31 test-takers thought that “40% of patients feel comfortable discussing IPV with a healthcare provider” and/or “patients express a strong preference for physicians to conduct IPV screening.” In actuality, 92% of patients are comfortable with IPV screening, and most patients are comfortable disclosing to various members of the healthcare team. Test-takers performed the highest (96.8% correct) on a question regarding the most common age for IPV (20-40 years old).

Conclusions: IPV commonly causes severe ophthalmic trauma, and ophthalmologists are in an important but under-recognized position to detect IPV. Residents and fellows, who are frontline providers most likely to see IPV-related trauma on call, test poorly overall, showing particular deficiencies in IPV screening. This underlines the need for IPV education, something long overlooked by surgical subspecialties. By implementing a structured IPV curriculum for ophthalmologists, providers may improve detection of IPV, ultimately saving vision and potentially saving lives.

Vision for the Future: Ideal Characteristics of a Dermatology Smartphone Application

Authors: Qaseem Y

Institution: Harbor-UCLA Medical Center

Presenter(s): Yasmin Qaseem, MD (yasminqaseem@msn.com)

Presentation Time: Saturday, 8:18 - 8:27am; RM 237 Room

ABSTRACT

Hypothesis: Dermatology is a well-described “visual” field of medicine, and it follows that it would lend itself to applications for smart phone devices which rely on photography. Ideal characteristics for such an application must be elucidated in order to further application development.

Methods: To discover more about the ideal features of a dermatology related smart phone application, a PubMed search was conducted with search terms “Dermatology” “smart phone”, “applications” and articles examining the use of smartphone applications in various aspects of dermatology were reviewed.

Results: Many benefits but also various dangers of smart phone applications in dermatology were considered. Benefits include convenience, patient education, and the ability to track disease processes. Downfalls include poor antibiotic stewardship, inability to run further diagnostic testing, and poor coordination of care for patients, which is ultimately a disservice to users.

Conclusions: Based on the results of this search there were several easily identifiable features that would be beneficial to a dermatology smart phone application, including low cost making the application more widely available. Existing applications appeared to have several different types of payment plans with various pros and cons. An ideal application would be easy to use, and provide quick results. The application would be more likely to provide an accurate result if the images were reviewed by a board-certified dermatologist, who should prioritize sensitivity rather than specificity with the ultimate goal of bringing concerning lesions to the attention of a clinician for further evaluation and treatment, rather than providing a specific diagnosis through the application.

The sensitivity of OCT in detecting optic neuritis

Authors: Xu SC, Leavitt J, Hodge D, Chen JJ

Institution: Mayo Clinic Hospital

Presenter(s): Sarah Chaoying Xu, MD (sarah.xu.ut@gmail.com)

Presentation Time: Saturday, 8:00 - 8:09am; Diplomat A Room

ABSTRACT

Purpose:

Correctly identifying prior optic neuritis is critically important because the presence or absence of optic neuritis may confirm or refute a diagnosis of neurologic conditions, such as multiple sclerosis and neuromyelitis optica. We evaluated the sensitivity of Cirrus OCT in detecting prior unilateral optic neuritis.

Method:

We performed a retrospective, observational clinical study of all patients with unilateral optic neuritis who presented between 2014 and 2016. Patients were included if they had unilateral optic neuritis and had OCT done at least 3 months after the optic neuritis. We compared OCT retinal nerve fiber layer (RNFL) and ganglion cell layer (GCL) thicknesses between the affected and unaffected, contralateral eyes. We excluded patients with concomitant glaucoma or other optic neuropathies. Paired T-test was used to compare RNFL and GCL thicknesses between eyes. In calculating sensitivity, thinning was considered significant if the RNFL or GCL was at least 6 μ m less in the affected eye compared to the unaffected.

Results:

A total of forty-four patients (15 male and 29 female) were included in the study. RNFL and GCL thicknesses were significantly lower in eyes with optic neuritis compared to unaffected eyes ($p \leq 0.002$). RNFL was thinner by $\geq 6\mu$ m in 84.1% of optic neuritis eyes compared to the unaffected eye. GCL was thinner by $\geq 6\mu$ m in 95.2% optic neuritis eyes. The sensitivity of OCT in detecting prior optic neuritis was 97.7% when using both average RNFL and GCL thicknesses. When using a cutoff of ≥ 2 standard deviations below age-matched controls, sensitivities were 59.1% for RNFL, 81.0% for GCL, and 81.8% for either GCL or RNFL thicknesses.

Conclusions:

OCT is a highly sensitive modality in detecting prior optic neuritis, which is made more robust by using inter-eye differences to approximate change and combining GCL and RNFL data.

The evolution of contraception and abortion in developed and developing countries – are we regressing or moving forward?

Authors: Kaur H, Fronek H

Institution: N/A

Presenter(s): Harmonjot Kaur, MD (drharman303@yahoo.com)

Presentation Time: Saturday, 9:21 - 9:30am; RM 237 Room

ABSTRACT

Introduction: In the United States, the availability of contraception and abortion has progressed significantly from the Comstock Act of 1879, which made it illegal to use "any drug, instrument for the purpose of preventing conception." In developing countries, around 222 million women continue to have unmet contraceptive needs. This paper will review the history and current controversies that will influence the availability of contraception in these two types of societies over the next decade.

Review: Major milestones in the US include opening the first birth control clinic in 1916, legalizing birth control for all citizens by 1972, and upholding a women's right to abortion in Roe v Wade in 1973. These historical landmarks would suggest a progressive mindset; however, the pro-choice vs pro-life debate divides our nation and this divide seems to be deepening. Certain religious conservative political leaders continue to advocate for an anti-abortion agenda, which appears to differ from popular opinion, social norms and cultural climate of our society. In a recent Gallup poll, it was reported that more than half of Americans consider themselves "pro-choice" on abortion rights. President-Elect Trump has vowed to fill the Supreme Court with conservative judges. The strength of opposition to abortion is evident in the defunding of Planned Parenthood.

In developing countries, limiting factors— lack of awareness, misconception about contraceptives, and decreased access to health care – continue to result in unmet contraceptive needs. The practice of female sterilization is preferred, as government often provides free services with extrinsic incentives to control population and poverty.

Conclusion: Although the UN declared birth control a human right with globalized efforts and initiatives to increase contraceptive use worldwide, this controversy remains undecided with ongoing forward as well as backward movement.

III. Medical Student Division



The Vision and Voice of **Women** in Medicine

Characterizing the impact of Ischemia Reperfusion Injury on the innate immune response in Vascularized Composite Allotransplantation

Authors: Allen A, Datta N, Kupiec-Weglinski J, Azari K

Institution: UCLA

Presenter(s): Antoinette Allen (antoinetteallen@mednet.ucla.edu)

Presentation Time: Saturday, 8:09 - 8:18am; Diplomat A Room

ABSTRACT

Introduction: Vascularized Composite Allotransplantation (VCA) involves the transplantation of complex tissue units with an intact vascular pedicle between a donor and a recipient. This new field has allowed transplantation of hands and faces to emerge as a viable treatment option with limited alternatives. Two major challenges to the viability of VCA are Ischemia Reperfusion Injury (IRI) and the immune response to transplanted tissues. The purpose of this study is to characterize the skin and muscle immune response in VCA as a result of ischemia re-perfusion injury.

Methods: C56BL6 and BALB/c mice underwent allogeneic and syngeneic hindlimb and skin transplantation with cold ischemia times of 1 and 6 hours. Transplant recipients were monitored for 1, 3 or 7 days post operation for signs of rejection. Muscle, skin and vessel tissue samples were collected at endpoints and histology performed.

Results: At Day 7, skin and muscle biopsies of the 6-hour ischemia group show increased cellular infiltration and staining intensity compared to the 1-hour ischemia group. This finding also correlates to the macroscopic appearance of the skin grafts, with later time points demonstrating increasingly mottled skin grafts.

Conclusions: Preliminary results demonstrate histological differences between prolonged ischemia times in murine orthotopic hindlimb transplantation. A longer cold ischemia time results in increased cellular infiltration and tissue disruption in skin and muscle biopsies.

Characterization of cell type-specific secreted Semaphorin-3F in the restriction of cortical neuron dendritic spine density and distribution**Authors:** Easwaran T, Wang Q, Lilley B, Kolodkin AL**Institution:** Johns Hopkins University School of Medicine/HHMI/Indiana University School of Medicine**Presenter(s):** Teresa Easwaran (tpeaswar@iupui.edu)**Presentation Time:** Friday, 12:09 - 12:19pm; Diplomat B Room

ABSTRACT

Dendritic spines are small protrusions along the dendrite shaft that are the major location for excitatory synaptic input, and they undergo dynamic regulation following changes in activity and experience. It is critical to maintain excitatory and inhibitory balance for a coordinated and functional nervous system; disruption of this balance is seen in various neurological disease such as epilepsy and autism. We have demonstrated that a secreted guidance cue, semaphorin 3F (Sema3F), is a negative regulator of dendritic spine number and synapse formation in the postnatal nervous system. Previous work demonstrates that loss of Sema3F, or its co-receptors Neuropilin-2 (Npn2) or Plexin A3 (PlexA3), leads to an increase in spine density in Layer V cortical pyramidal neurons, as well as in dentate gyrus granule cells. Further, Sema3F^{-/-} and Npn2^{-/-} null mutant mice have spontaneous seizures, suggesting an imbalance in excitation and inhibition. It remains unclear what the specific cellular sources are secrete Sema3F to restrict spine density and synapse formation. To address this, we have developed a genetic strategy to conditionally knock out Sema3F from select excitatory or inhibitory neuron populations, and then assess spine morphology and distribution when Sema3F is removed from these specific cell types. To characterize morphology and spine distribution in these genotypes, we perform retrograde labeling of Layer V pyramidal neurons using a g-deleted rabies virus expressing GFP so that we achieve sparse labeling restricted to only Layer V neurons, allowing for robust spine analysis and quantitation. We plan to delineate which cells secrete Sema3F to constrain spine formation and distribution using this approach. This will allow us to further characterize how classical guidance molecules allow for proper cortical circuit assembly, and this work will have implications for understanding how dynamic regulation of synaptic morphology and function is maintained to influence synaptic plasticity and scaling in responses to changes in neuronal activity.

Examining the ultrastructure of minor salivary glands in patients with HIV and Sjögren's Syndrome

Authors: Eswaran SP, McArthur C

Institution: University of Missouri-Kansas City, School of Medicine

Presenter(s): Sanju Eswaran (sanjueswaran@yahoo.com)

Presentation Time: Saturday, 8:09 - 8:18am; Solano Room

ABSTRACT

Hypothesis: Xerostomia is described as dryness of the mouth secondary to diminished or arrested salivary secretion. Xerostomia is a common symptom experienced by patients with Sjögren's Syndrome (SS) as well as patients infected with HIV. The purpose of this study is to investigate the ultrastructural changes in minor salivary gland tissue related to both disease states. It was hypothesized that there would be similar ultrastructure findings in both HIV and Sjögren's Syndrome.

Methods: Salivary flow rate was initially determined during a 10-minute period and minor salivary gland biopsies of five SS patients, five HIV patients, and five healthy controls were evaluated by light and scanning electron microscopy. Overall cell structure, organelles, and basal lamina of both acinar and ductal cells were evaluated using EM magnifications ranging from 15,000x to 60,000x.

Results: No apparent changes in either acinar or ductal epithelial cell structure were observed. In addition, neither the virus particles nor inflammatory cells were detected albeit virus particles have previously been described in HIV-infected salivary glands. Also, there was no indication of cellular atrophy or fibrosis; however, a distinctive difference was noted amongst the three groups when examining the basal lamina supporting epithelia. In the normal salivary gland cells, the basal lamina had a distinctive lamina lucida and a lamina densa of similar thicknesses. For all SS and HIV patients, a definite thickening of the lamina densa had occurred, resulting in a near-complete loss of the lamina lucida.

Conclusions: These suggest changes in composition but necessitate further investigations to determine if collagen or laminin components are altered and to establish if these visual differences represent true changes in the substructure of the basal lamina. Evaluating these components may elucidate the etiology of the xerostomia that patients experience in the two disease states.

Investigating the role of integrin $\alpha3\beta1$ in the regulation of laminin-332 processing in the epidermal basement membrane

Authors: Monichan R, Longmate WM, Lyons SP, DiPersio MC

Institution: Albany Medical College

Presenter(s): Ruby Monichan (monichr@mail.amc.edu)

Presentation Time: Friday, 8:33 - 8:42pm; Diplomat A Room

ABSTRACT

Introduction: Defects in cell adhesion to the extracellular matrix (ECM) are hallmarks of blistering skin disorders and chronic wounds. Due to their function as adhesion receptors, integrins are implicated as potential therapeutic targets. In particular, integrin $\alpha3\beta1$ regulates epidermal adhesion to the underlying basement membrane (BM) through interaction with its main adhesive ligand, laminin-332 (LN-332), which is composed of three distinct laminin chains designated $\alpha3$, $\beta3$, and $\gamma2$. In resting adult skin, LN-332 lacks the C-terminal domain of the laminin- $\alpha3$ chain and the N-terminal domain of the $\gamma2$ chain due to proteolytic processing during BM maturation. Although functional importance of these processing events is not fully understood, they may regulate BM architecture by modulating interactions of LN-332 with other ECM components.

Hypothesis: We hypothesize that integrin $\alpha3\beta1$ is required for laminin- $\gamma2$ processing in the ECM.

Methods, Results: Our group previously established that deletion of the integrin- $\alpha3$ subunit leads to blistering and BM disorganization in neonatal mice, and that this adhesive role of integrin $\alpha3\beta1$ is recapitulated during adult wound healing. We used an in vivo wound healing model to further show that mice lacking integrin $\alpha3\beta1$ in the epidermis display delayed proteolytic processing of laminin- $\gamma2$ in the BM, compared with control mice. Using an in vitro model, we determined that culturing keratinocytes in high calcium conditions promotes $\alpha3\beta1$ -dependent processing of laminin- $\gamma2$. Moreover, we used RNAi to demonstrate that the extent of laminin- $\gamma2$ processing is dependent on the expression of bone morphogenetic protein-1 (BMP-1), an extracellular metalloprotease that displays $\alpha3\beta1$ -dependent expression in our keratinocyte model.

Conclusions: Our studies reveal a novel and essential role for the epidermal integrin $\alpha3\beta1$ in controlling BM assembly and organization in the skin, in part through regulation of BMP-1-mediated proteolytic processing of LN-332. Defects in this pathway may contribute to blistering skin diseases or wound pathologies.

The role of postsynaptic cell-adhesion molecules in the trafficking of AMPA-type glutamate receptors**Authors:** Riley A, Wu X, Malenka R, Sudhof T**Institution:** Indiana University/Stanford University**Presenter(s):** Ashley Riley (ashlrile@iupui.edu)**Presentation Time:** Friday, 12:09 - 12:18pm; RM 237 Room

ABSTRACT

Long-term potentiation (LTP), an activity dependent, long-lasting change in synaptic strength, is a critical component of synaptic plasticity underlying learning and memory and has been implicated in various neuropsychiatric disorders. The mechanism of LTP is dependent on the trafficking of AMPA receptors (AMPA receptors) to the post-synaptic membrane. The present project is guided by the unexpected role cell adhesion proteins mediate trans-synaptic signaling. Specifically, the project focuses on post-synaptic neuroligin 1 binding pre-synaptic neuroligin. This heterophilic interaction is present in mature and developing synapses and its absence has been shown to impair LTP. Here, I generated various neuroligin constructs where different functional domains of neuroligin 1 are mutated. I used these constructs to determine which neuroligin domains are necessary for AMPAR exocytosis to determine the precise mechanism by which neuroligins are required for LTP. Methodically, dissociated mouse hippocampal cultures where neuroligin 1 is conditionally knocked out were infected by viruses carrying the different neuroligin constructs. Subsequently, the ability of the neuroligin constructs to mediate LTP was monitored by inducing chemical LTP in these neurons and measuring the exocytosis of AMPARs using immunocytochemistry. Preliminary data suggests that chemical LTP is impaired upon deletion of neuroligin 1, can be rescued solely by the extracellular domain of neuroligin 1, and is impaired when neuroligin binding is inhibited. Ongoing work includes investigating novel binding partners to the neuroligin-neurexin complex.

Natural Killer Subsets in Autoimmune Diabetes in Mice and Man**Authors:** Rodriguez J, Cabello C, Vazquez C, Sands A, Umland O, Fraker C, Bayer AL**Institution:** University of Miami Miller School of Medicine**Presenter(s):** Jennifer Rodriguez (j.rodriguez80@umiami.edu)**Presentation Time:** Saturday, 8:18 - 8:27am; Solano Room

ABSTRACT

There is much controversy regarding the role of natural killer cells (NKs) in human and experimental mouse models of autoimmunity with both destructive and protective roles observed with bulk NKs; however, functional subsets of NKs remain poorly defined in mice, particularly, as related to type 1 diabetes (T1D) development. Our study was aimed at identifying functional NK subsets with effector and regulatory properties using the NOD mouse model of autoimmune diabetes. We identified bulk NKs as CD335posCD122pos cells among CD45posCD3neg cells throughout various immune tissues in young female non-autoimmune B6 and diabetes-prone NOD mice. Among bulk NKs, subsets c-Kitneg and c-KitposCD127pos were found using flow cytometry, but c-KitposCD127pos cells were considerably lower in NOD mice. We cell-sorted NK subsets to determine function and then stimulated with cytokines or the activating receptor, LY49d. We found that the c-Kitneg subset express Granzyme B. Using nanostring technology, we confirmed functional differences with 30 uniquely expressed genes in c-Kitpos NKs and 35 genes in c-Kitneg NKs. These findings support that c-Kit allows distinguishing two major NK subsets with distinct gene profiles, implying functional differences. Interestingly, 10 genes expressed in cKitpos NKs have also been associated in T1D at-risk alleles. T1D patients with long-standing disease and relatives at-risk for T1D based on autoantibody positivity, in comparison to healthy control subjects revealed that the majority of human NK (hNK) are effector cells (NKeff: CD56dimCD16pos), but the ratio of NKeff:NKreg (NKreg: CD56brightCD16neg) statistically decreases with disease progression resulting in a more regulatory environment. The c-Kitpos hNKs are largely found within CD56bright cells in both long-standing patients and at-risk relatives having the highest percentage of c-Kit+ NKreg compared to controls. Our future direction is to resolve the inflammatory roles of these NK subsets with their regulatory roles in autoimmunity.

Genistein promotes early cell death in HIV infected U937 cells

Authors: Ryba D, Baxa DM

Institution: Oakland University William Beaumont School of Medicine

Presenter(s): Danielle Ryba (dmryba@oakland.edu)

Presentation Time: Friday, 12:18 - 12:27pm; RM 237 Room

This research received financial support from OUWB Embark Program and Merck.

ABSTRACT

Hypothesis: The soy isoflavone genistein, a tyrosine kinase inhibitor, has been studied in various cell types as an inducer of both apoptosis and cell cycle arrest. HIV causes a persistent infection that cannot be driven from viral reservoirs. In U937 cells, unintegrated DNA is reported to induce apoptosis via a DNA damage pathway. Based on this prior research, we hypothesized that the integrase inhibitor Raltegravir, in combination with genistein, could induce the rapid death of HIV infected U937 cells by increasing unintegrated DNA, thereby reducing the number of infected cells in a population.

Methods: The induction of cell death was determined by DNA fragmentation, caspase-3 activity, and western blot detection of proteins BAX and Bcl-2. HIV infected cell cultures were treated with 50nM of Raltegravir and 20 μ M or 60 μ M of genistein, and assays were performed 48 hours after infection.

Results: A caspase-3 assay showed increased activation in cultures treated with either 20 μ M or 60 μ M of genistein. A western blot demonstrated a reduction in Bcl-2 activity compared to BAX activity in the culture with 20 μ M of genistein. An increase in DNA fragmentation was seen in response to genistein exposure.

Conclusion: Together these results signify an induction of cell death in HIV infected cells in response to Raltegravir and genistein. Further work is necessary to elucidate the pathway of this process. Genistein as an inducer of cell death in HIV infected cells may be useful as an adjunct to HIV Raltegravir based therapy.

Pseudotype recombinant adeno-associated viral vectors transduce dorsal raphe nucleus cells more effectively than standard serotype vectors

Authors: Shah M, Vincent M, Jacobsen L

Institution: Albany Medical College

Presenter(s): Misty Shah (shahm@mail.amc.edu)

Presentation Time: Saturday, 8:00 - 8:09am; RM 237 Room

ABSTRACT

INTRODUCTION: Viral vector technology in combination with stereotaxic surgery presents a novel approach to studying gene function in the CNS by targeting specific functional and topographic brain regions. Gene delivery to various CNS regions has been accomplished using serotype-2 of the adeno-associated virus (AAV). Pseudotype rAAV2 vectors have been generated through recombinant technology to facilitate increased transduction efficacy.

HYPOTHESIS: Although transduction by rAAV2 pseudotypes has been found to be more effective than the standard AAV2 serotype in the hippocampus, striatum, globus pallidus, substantia nigra, and spinal cord, it is yet unknown if rAAV2 pseudotypes transduce dorsal raphe nucleus (DRN) cells—responsible for the majority of serotonin input to forebrain areas—with equal efficacy. We hypothesize that alternative rAAV2 pseudotype(s) will more effectively transduce DRN cells than does the standard AAV2/2 serotype.

METHODS: Five rAAV2 pseudotypes were assessed for distribution and tropism in the DRN: rAAV2/1, AAV2/2 (standard serotype), rAAV/5, rAAV2/9, rAAV2/rh10 (rh, rhesus monkey). Floxed GR (glucocorticoid receptor) male mice were anesthetized and injected stereotaxically in the DRN with equivalent volumes and titer of the respective GFP-expressing rAAV. Mice overdosed with sodium pentobarbital were transcardially perfused, and brains were fixed with paraformaldehyde and cryoprotected. For immunohistochemistry: sections were labeled with anti-GFP antibody and fluorescent dye. For thionin stain: sections of GFP-injected and non-injected mice were hydrated, stained with 0.25% thionin, and dehydrated.

RESULTS: Fluorescence imaging of GFP transgene expression demonstrated more extensive mediolateral and rostrocaudal DRN distribution of AAV 2/5, 2/9 and 2/rh10 than the AAV 2/2 serotype. Thionin stain confirmed that cell damage did not occur due to virus injection, indicated by DRN cells exhibiting equivalent staining of the nuclei vs. cytoplasm of GFP-injected and naïve (non-injected) mice.

CONCLUSIONS: All rAAV pseudotypes transduce DRN cells more effectively than the standard serotype AAV2 vector.

Can human xylosyltransferase-1 serve as a biomarker and therapeutic target for corneal fibrosis?

Authors: Smith KE, Tripathi R, Gupta S, Anumanthen G, Hesemann NP, Mohan RR

Institution: University of Missouri-Columbia School of Medicine

Presenter(s): Kaitlin Smith (kelvh8@health.missouri.edu)

Presentation Time: Friday, 12:00 - 12:09pm; RM 237 Room

ABSTRACT

Hypothesis: Injury or infections to the eye causes corneal scarring (fibrosis) and vision impairment. The changes in proteoglycans during wound repair and differentiation of fibroblasts to myofibroblasts after injury play a key role in corneal scar development. Human xylosyltransferase-1 (XYLT-1) regulates glycosaminoglycan biosynthesis during fibrosis, however its role in corneal scarring and wound repair is still unknown. Previously, we showed that proteoglycan, decorin, plays a key role in extracellular matrix modulation and wound healing in the cornea.

We tested the hypothesis that XYLT-1 plays an important role in corneal wound healing and scarring and may allow development of newer strategies for curing corneal fibrosis. The specific aims were to: 1) characterize XYLT-1 expression in normal and wounded human and rabbit corneas, 2) investigate its role in corneal wound healing, and 3) determine whether XYLT-1 can serve as a biomarker for corneal fibrosis.

Methods: Donor human corneas and rabbit (normal and injured), primary human corneal fibroblasts (HCF), in vitro corneal fibrosis model, qPCR, and immunofluorescence were used.

Results: Normal human and rabbit corneas showed no expression of XYLT-1 or α -SMA but wounded human and rabbit corneas showed high levels of these proteins (quantification and statistical analysis pending). Transforming growth factor- β 1 (TGF- β 1) treated HCFs showed significantly high XYLT-1 and α -SMA mRNA and protein levels (5-35 fold; $p < 0.01$) compared to normal at tested times. XYLT-1 was ~30 fold higher than the α -SMA.

Conclusion: XYLT-1 may serve as a biomarker and therapeutic target for corneal scarring. More studies are warranted.

Role of Fn-EDA in the Upregulation of Collagen 12A1 in Triple Negative Breast Cancer**Authors:** Uppal SK, Kelsh-Lasher R, Mckeown-Longo PJ**Institution:** Albany Medical College**Presenter(s):** Shelley Uppal (uppals@mail.amc.edu)**Presentation Time:** Saturday, 5:51 - 6:00pm; Diplomat B Room

ABSTRACT

Triple negative breast cancer (TNBC) is an aggressive form of breast cancer that is characterized by a distinct molecular profile, unique patterns of metastasis, and a lack of directed therapies. Because TNBC is generally unresponsive to conventional hormonal therapies, there is a demand for more effective, targeted treatments for TNBC patients. Previous studies have shown that the extra domain A isoform of fibronectin (Fn-EDA) activates toll-like receptor 4 (TLR4) and induces expression of pro-inflammatory and pro-fibrotic cytokines in a number of cell types. As previous studies have documented that fibrosis is correlated with higher pathological stage and is an indicator of early tumor metastasis and progression in breast cancer, investigation of fibrotic mediators in TNBC has considerable therapeutic potential. Recent studies have implicated collagen type XII alpha 1 (collagen 12A1), a matrix remodeling factor and a member of the FACIT (fibril associated collagen interrupted triple helices) collagen family, as a potential biomarker for breast cancer. Preliminary RT-PCR data has indicated that TNBC cells treated with Fn-EDA upregulate collagen 12A1. In the present study, we utilized Western blot analysis to assess whether Fn-EDA induces collagen 12A1 protein expression in TNBC cells. It was hypothesized that Fn-EDA would upregulate collagen 12A1 protein in TNBC cells treated in a time and dosage dependent manner. The results indicated that TNBC cells treated with Fn-EDA in a time dependent manner have upregulated collagen 12A1 expression in cell lysates relative to the control. Future studies will further explore Fn-EDA upregulation of collagen 12A1 and ascertain whether Fn-EDA induction of collagen 12A1 is TLR4 dependent.

Early Investigation into the Role of LKB1-pathway Downstream Kinases in Breast Cancer Metastasis

Authors: Wahba B, Hoang V, Burks H, Martin EC, Elliot S, Rhodes L, Burrow ME, Collins-Burow BM

Institution: Albany Medical Center

Presenter(s): Bahia Wahba (wahbab@mail.amc.edu)

Presentation Time: Friday, 12:27 - 12:36pm; Embassy Ballroom

ABSTRACT

Hypothesis: Tumor suppressor liver kinase B1 (LKB1) has been found in breast cancer to be associated with poor survival and increased metastasis. Approximately 14 downstream kinases have been identified with respect to LKB1 signaling. In an effort to further elucidate the pathway by which LKB1 induces metastasis and tumor growth two kinases, NUAK1 and MARK2, involved in cell polarity, have been selectively repressed. We predict NUAK1 and MARK2 to further EMT transition in MCF-7 cells.

Methods: This study uses the luminal A (estrogen receptor (ER)+, progesterone receptor (PR)+, Her2 -) MCF7 breast cancer cell line, shown to express higher levels of LKB1 and little metastatic potential, to elucidate the roles of NUAK1 and MARK2 as downstream LKB1 effectors. Transformed MCF-7 cells were analyzed for cell morphology, epithelial to mesenchymal transition (EMT) markers, and in vivo tumor growth.

Results: Morphological change towards a more mesenchymal phenotype was evident in both MCF 7-PGIPZ-shMARK2 and MCF 7-PGIPZ-shNUAK1 cell lines. Further analysis by qPCR demonstrated that both cell lines also had significant repression of e-cadherin (CDH1), and upregulation of vimentin (VIM). Finally, xenograft studies demonstrated significantly increased tumor growth in MCF 7- shNUAK1 inoculated mice.

Conclusion: Down regulation of both MARK2 and NUAK1 demonstrate a cadherin and vimentin change that suggests EMT in MCF-7. Additionally, both MCF 7- shMARK2 and shNUAK1 cell lines displayed morphological changes consistent with EMT. These in vitro results are consistent with a mesenchymal phenotype. In vivo studies point to a particularly more aggressive phenotype when NUAK1 is down regulated. Taken together, this data supports an important and pivotal role of NUAK1 in LKB1's contribution to metastasis and begs further investigation.

Understanding Cancer Risk Behavior and Potential Modification among Females in Urban India

Authors: Bhatia RK, Arora M

Institution: University of Rochester School of Medicine and Dentistry

Presenter(s): Rohini Bhatia (rohini_bhatia@urmc.rochester.edu)

Presentation Time: Friday, 12:09 - 12:18pm; Embassy Ballroom

ABSTRACT

Hypothesis

Female smoking is predicted to double worldwide by 2025. Data from the Global Youth Tobacco Survey (GYTS) indicate less of a gender disparity in India among youth who smoke; adolescent girls smoke only 2-3 times less than their male peers. We hypothesize that independent living associated with urban migration and higher education drive higher smoking rates among women in India. The use of smoking tobacco among Indian women is 2.9% and smokeless is 18.4%. However, there are no studies that focus exclusively on college going women in India, at the ages where understanding behavior modification factors is critical. This study was conducted to fill this gap.

Methods

Beginning with semi-structured interviews and three months of focused qualitative research, researchers developed and validated a 59-question survey concerning perceptions and predictors of cigarette use. The questionnaire was distributed to 400 students among five different colleges in Delhi. Two hundred and forty six girls responded. Interview transcripts were analyzed for recurrent themes and quantitative survey results were entered into a database for multilevel logistic regression analysis using STATA.

Results

Ever use of tobacco among female college students in Delhi is 26.8%, with 9.13% using cigarettes and 10.9% using hookah. Qualitative results suggest themes of intrigue and assertion of independence that drive initiation of tobacco use.

Conclusions

Tobacco use among college students in India is higher than has been previously reported and is driven by themes of independence and equality. Given the projected increase in cancer burden in India by IARC, intervention at this age is critical to prevent tobacco attributable cancers in the future.

Associations between comorbid disease outcomes among patients with depression in a student run free clinic

Authors: Brockmeyer J, Cummins J, Brandt K, Duncan J, Hayden G, Roderick M, Stiegel S

Institution: University of Missouri-Columbia

Presenter(s): Jennifer Brockmeyer (jmbdcc@health.missouri.edu)

Presentation Time: Saturday, 8:27 - 8:36am; Embassy Ballroom

ABSTRACT

Hypothesis:

Research demonstrates a correlation between diagnosed depression and increased markers of chronic medical illness, including poorer glycemic control, increased risk for cardiovascular events, and obesity. Medically underserved patient populations are especially at high risk for poor health outcomes. MedZou, a student-run, free medical clinic provides integrated health care services to uninsured, low-income adults in Mid-Missouri. We hypothesized that depressed patients treated at MedZou, would have better health outcome measures than non-depressed patients due to the integrated healthcare model employed.

Methods:

A retrospective chart review was completed on patients seen at MedZou between 2014 and 2015. Mean incident glucose, incident glucose above 200mg/dL, body mass index, mean hemoglobin A1c, and average visits per patient were compared between depressed and non-depressed patients. Data was entered using RedCap software and analyzed with Microsoft Excel and SPSS.

Results:

Our analysis showed a statistically significant relationship between depression and lower incident glucose measurement ($p=0.007$) and a lower proportion of depressed patients with incident glucose $>200\text{mg/dL}$ ($p=0.006$). While no other markers of health status resulted in statistically significant findings, results showed reduced BMI and levels of hemoglobin A1c among patients with depression as well as higher number of mean visits per patient.

Conclusions:

In contrast to previously published findings, our results showed patients with depression had improved glycemic control and lower proportions of incidentally diagnosed diabetes compared to non-depressed patients, with a similar trend for BMI and hemoglobin A1C. The notable trend of increased number of visits for patients with depression may indicate an increased frequency of care provided to depressed patients, contributing to improved outcomes. These findings may also be attributable to a lack of statistical power given the size of our sample, or reflect other unidentified factors positively affecting health outcomes. Further research is needed to expound on and characterize these findings.

Identifying re-excision risk factors in breast cancer patients undergoing partial mastectomy

Authors: Doo FX, Beeman JL, Hwang K, Jarvis LA, Barth RJ

Institution: Oakland University William Beaumont School of Medicine

Presenter(s): Florence Doo (fxdoo@oakland.edu)

Presentation Time: Saturday, 8:18 - 8:27am; Diplomat B Room

ABSTRACT

Hypothesis: Surgical treatment of breast cancer includes the potential risk of re-excision, and patients often seek advice regarding personal risk factors during cancer treatment planning. The purpose of this study was to examine factors affecting re-excision rates in patients who underwent partial mastectomy at a single U.S. institution.

Methods: This was a retrospective chart review study of multidisciplinary breast cancer surgery clinic patients undergoing partial mastectomy from 2000-2011. Statistical analysis was performed using SPSS (version 24, SPSS Inc., Chicago, IL, USA). Student's t-test and Chi square analyses were used to assess for significant differences between the re-excision and no re-excision groups. The significantly different variables were used in a binomial logistic regression.

Results: Of the 2487 surgical breast cancer patients, 1615 were identified as patients who underwent partial mastectomy treatment. Univariate analysis indicated that age at diagnosis ($p=0.008$), tumor size ($p5\text{ cm}$ ($p=0.011$)). Having a re-excision performed is significantly associated with locoregional recurrence ($X^2=3.788(1)$, $p=0.052$).

Conclusions: In this single-institution chart review, patients of younger age and with larger tumor sizes were more likely to require re-excision after partial mastectomy. Although this is a single-institution study, it may be useful to replicate these findings to address patient concerns regarding institution-specific potential surgical risk factors leading to re-excision.

Reasons for Non-Adherence with Recommended Surveillance Colonoscopies in Community Health Center Patients

Authors: Enogieru I, Percac-Lima S

Institution: Harvard Medical School

Presenter(s): Imarhia Enogieru (imarhia_enogieru@hms.harvard.edu)

Presentation Time: Friday, 7:57 - 8:06pm; Diplomat B Room

ABSTRACT

Colorectal cancer (CRC) is the second leading cause of cancer-related deaths in the United States. Despite the effectiveness in screening, there is a disproportionate burden of CRC in low- income and minority populations.

Hypothesis: Community health center (CHC) patients may have multiple reasons for non-adherence with recommended surveillance colonoscopies

Methods: In this retrospective study, we reviewed electronic medical records (EMR) of patients who received colonoscopies between March 2010 and December 2011 with a documented abnormality. The patients were 50-74 years old and received care in CHC serving low-income and minority populations. We identified patients with recommended follow-up in one or three years and examined EMR of patients who never received or had delayed colonoscopy to determine the reasons for non-adherence. Delayed was defined as colonoscopy not completed within 1 year of the recommended date.

Results: Of 177 patients included, 28 (15.8%) had recommendation for follow-up in one year and 102 (57.6%) in three years. Four patients (14.3%) in 1-year group and twelve (11.8%) in 3-year group never received recommended colonoscopy. In the 1-year follow-up group, the reasons for non-adherence were: patient declined (75%), comorbidities (25%) and providers' miscommunications (25%). In the 3-year follow-up group, reasons included: providers' miscommunications (41.7%), patient's comorbidities (16.7%), patient moved (25%), declined (16.7%) or died (8.3%). Three colonoscopies were delayed in the 1-year group because: patient cancelled/deferred (66.7%), providers' miscommunications (33.3%) and comorbidities (33%). Nine patients had delayed colonoscopies in the 3-year follow-up group because: patient cancelled/declined (33.3%), late referral (33.3%), patient moved (11.1%), miscommunication (11.1%) and comorbidities (11.1%).

Conclusions: Reasons why vulnerable patients had a delay or did not complete surveillance colonoscopies were patient-based or systems/physician-based. Patients with comorbidities and who decline colonoscopy could be offered other testing for surveillance. For systems/physician-based reasons, a standardized method for communicating recommendations could minimize misunderstanding about follow-up.

Lessons from the Closure of Doctor's Medical Center

Authors: Eppley S

Institution: UC Berkeley & UCSF

Presenter(s): Sarah Eppley (seppley1@berkeley.edu)

Presentation Time: Friday, 12:00 - 12:09pm; Diplomat A Room

ABSTRACT

Hypothesis: The recent closure of Doctor's Medical Center (DMC), a district hospital in Northern California, has contributed to major health challenges for West Contra Costa County that have not been fully offset by pre- and post-closure preparations and responses by the county and regional healthcare systems.

Methods: Key informant interviews with physicians and organizational leaders were conducted to understand the challenges and successes of this particular hospital closure, including experiences pre- and post-closure, unmet health challenges in the community, and recommendations for future improvements to the local healthcare system.

Results: Respondents overwhelmingly agreed that the hospital closure has negatively impacted the community, though responses varied in terms of whether or not the closure could have been avoided. Many respondents were concerned about the expanding medically underserved geographical area and the subsequent loss of specialty services. During the closure, physicians noted difficulty gaining support from the broader region, as media coverage was not far-reaching. The opening of an urgent care, expansion of the county's nurse hotline and outpatient clinics, and streamlined EMS operations were cited as successes of the county's response to the hospital closure.

Conclusions: DMC is one example in a wave of US hospital closures whose experience can inform other hospitals facing similar circumstances. In an era of outpatient service and declining reimbursement rates, many hospitals struggle to maintain adequate utilization and revenues for long-term survival. Yet many of these community hospitals are hubs of healthcare for the local population. Hospital closure can severely reduce access to these necessary services and overwhelm the regional system, and is thus concerning for patients, providers, and organizational leaders alike. While the closure of DMC did not result in an immediate healthcare disaster, the long-term effects of discontinuity of care and limited access will take its toll on this vulnerable community.

Correlation Between Restless Leg Syndrome and Venous Insufficiency

Authors: Fronek LF, Alfaro M, Bunke N

Institution: College of Osteopathic Medicine of the Pacific

Presenter(s): Lisa Fronek (lfronek@westernu.edu)

Presentation Time: Saturday, 9:21 - 9:30am; RM 232 Room

ABSTRACT

This study found that venous insufficiency may be an important contributing factor in restless leg symptoms. The clinical significance of this study is that the treatment of underlying venous insufficiency resulted in significant improvement of restless leg symptoms and patients' quality of life. Additionally, all patients who do not respond sufficiently to usual therapeutic measures for restless leg syndrome should be screened for venous insufficiency.

Introduction: Restless leg syndrome (RLS) is a neurological, sensorimotor disorder characterized by an irresistible urge to move the legs, especially at rest or lying down, interfering with sleep and causing decreased quality of life. RLS affects 5-10% of the population in Western countries, and is more common and severe in women. Several conditions are associated with and may exacerbate RLS, including iron deficiency anemia, pregnancy, end stage renal disease, diabetes, rheumatoid arthritis, and peripheral neuropathy. Since symptoms of RLS worsen at night and improve with movement, we hypothesized There may be an association with venous disease, which also manifests this way.

Methods: 50 consecutive patients at UC-San Diego Vein Clinic were screened for RLS and completed a questionnaire evaluating symptom severity, frequency, and impact on daily life. Eligible patients were older than 17 years old, had moderate to severe RLS, symptoms > 6 months, were symptomatic at the time of study, and had duplex ultrasound findings of venous insufficiency. Patients were excluded if they had previous venous treatment or a history of DVT.

Results: 6 women and 2 men (16%) qualified. The average age was 52, average CEAP (clinical, etiologic, anatomic, pathologic) score was 2.4. Patients were screened prior to treatment and 3 months after treating their venous insufficiency with radiofrequency ablation and endovenous chemical ablation. The pre-treatment IRLS (International RLS Rating Scale) was 18.875 and post-treatment IRLS was 0.875 ($p < 0.0002$). Every patient had symptomatic improvement of 79-100% of their symptoms; improvement was seen in all anatomic categories of venous disease.

Conclusion: Venous insufficiency is an important contributing factor in RLS. All patients with RLS should be screened with duplex ultrasound for venous insufficiency, as the treatment of underlying venous insufficiency may result in significant improvement in symptoms and quality of life.

Risk factors for melanoma brain metastasis and disease progression in women**Authors:** Gardner LJ**Institution:** University of Utah School of Medicine**Presenter(s):** Laura Gardner (laura.j.gardner@hsc.utah.edu)**Presentation Time:** Friday, 12:18 - 12:27pm; Diplomat A Room

ABSTRACT

Objective: Advanced stage melanoma frequently metastasizes to the brain, and is associated with poor prognosis. I sought to determine whether factors related to patient demographics and primary tumor were associated with development of brain metastases (BM) and survival in women. In addition, I investigated the impact of BM detection setting (routine screening vs. symptomatic presentation) on clinical outcomes.

Methods: A database of melanoma patients seen from years 1999-2015 at a single institution was reviewed to identify patients that developed BM. Patients with BM were matched by stage to a subgroup of patients who did not develop BM to serve as a control group. Patients were separated into two separate groups by sex. Patient demographics, primary tumor characteristics, and clinical outcomes were then analyzed.

Results: 35 female patients with melanoma BM were matched to 100 female melanoma patients without BM, and 88 male patients with melanoma BM were matched to 137 male melanoma patients without BM. Characteristics of the primary melanoma tumor associated with the development of BM in women included location on the arm ($p=0.0285$). In female patients with BM, time to first recurrence for primary melanomas of the head and neck was significantly shorter (12.8 vs. 45.3 vs 68.6 months, $p<0.0001$) than extremity and trunk tumors. Histologic type ($p=0.2490$) and ulceration ($p=0.1542$) were not predictive of worse clinical outcomes. In males, body site was not predictive of time to first recurrence (20.5 vs. 14.0 vs 31.5 months, $p=0.7117$), however, histologic type ($p<0.0001$) and ulceration ($p<0.0001$) were predictive. There was no difference between time to first recurrence, time to first brain met, and time to death between males and females with BM.

Conclusions: Factors predictive of developing BM in females include primary tumors of the arm. In female patients with BM, head and neck tumors but neither histologic type nor ulceration were associated with worse clinical outcomes. In male patients with BM, histologic type and ulceration were associated with worse clinical outcomes, but not body site.

A Mixed-Methods Survey Studying Secondary Traumatic Stress and Coping Strategies amongst Research Assistants Studying Violence

Authors: Garel KA, Bair-Merritt M, Rothman EF

Institution: Boston University School of Medicine

Presenter(s): Keri-Lee Garel (kgarel@bu.edu)

Presentation Time: Saturday, 9:12 - 9:12am; RM 237 Room

ABSTRACT

Hypothesis: Secondary Traumatic Stress (STS), emotional duress resulting from continued indirect exposure to trauma, has not previously been studied in research assistants who study violence and abuse, although they often interact extensively with trauma survivors. This study aims to quantitatively assess the prevalence of STS in these research assistants, to identify common themes and patterns in the emotional responses developed in the course of their research, and to determine effective support resources and coping strategies for future research assistants.

Methods: We conducted a cross-sectional, mixed-methods survey of current and former research assistants (n=18) conducting violence research at an urban safety net hospital. Emotional duress stemming from respondents' research work, along with the coping strategies used to address it, were assessed using the Secondary Traumatic Stress Scale (STSS) and the Brief COPE Inventory. Respondents also completed two open-ended questions about difficulties and helpful resources they encountered while conducting research. Thematic analysis of qualitative data, correlational and multiple linear regression analyses of quantitative data (using SPSS), and comparisons with data from populations vulnerable to STS were all performed.

Results: Research assistants' STSS scores are comparable with those of social workers (Mean/SD 33.11/10.02 vs. 29.49/10.76), with similar effect sizes across all three subscales (Intrusion, Avoidance, and Hyperarousal). Increased STSS scores in research assistants were moderately correlated with increased Brief COPE scores ($R=0.60$, $p<0.01$), indicating more frequent use of a larger number of coping resources. Text responses to the open-ended questions include common feelings of helplessness, guilt, anxiety, and despair stemming from respondents' research interactions with trauma survivors; these are often present in populations vulnerable to STS. Institutional supports are reported as particularly helpful resources; respondents mention the importance of debriefing with their research supervisors and coworkers.

Conclusions: In this sample, the prevalence of STS in research assistants is similar to that in a heavily studied population that also interacts with trauma survivors. Themes of guilt, helplessness, and anxiety are present. Access to institutional support resources may be beneficial. Further confirmatory investigation, with sample size expansion and collection of demographic information, is warranted.

Symptoms of Anxiety in Medical Students: Are there Gender Differences?

Authors: Guinan DE, Barr GQ, Thomas MP

Institution: Florida State University College of Medicine

Presenter(s): Danielle Guinan (deg13c@med.fsu.edu)

Presentation Time: Friday, 8:42 - 8:51pm; Diplomat A Room

ABSTRACT

Hypothesis:

Anxiety can be a debilitating condition that negatively affects both quality of life and cognitive performance. There is a lack of information regarding the anxiety levels of medical students in medical literature. Our study seeks to shed light on the levels of anxiety in the medical student population in the U.S. We hypothesize medical students experience symptoms of anxiety at higher rates than the general college student population, with potential gender differences in the way anxiety is experienced.

Methods:

This was a cross-sectional study of medical students attending the Florida State University College of Medicine. An online survey was distributed which collected demographic information, including year in medical school, age, sex, race/ethnicity, and whether the student had been previously diagnosed with an anxiety disorder. Responses to the Beck Anxiety Inventory (BAI), a 21 question multiple choice self-report inventory used for measuring the severity of anxiety symptoms in children and adults, was also completed by participants. Male and female scores on the BAI were compared using an independent samples T-test.

Results:

A total of 191 participants were enrolled. Overall 40.3% of the subjects were male and 59.7% were female. Moderate to severe anxiety symptoms were reported in 12.6% of medical students. Female students scored significantly higher on the BAI (12.684 ± 1.096) compared to males (8.403 ± 0.801), $t(190) = 1.973$, $p < 0.005$.

Conclusions:

A higher prevalence of anxiety symptoms was found in medical students compared to the reported levels in a general population of college students, with female students experiencing significantly more symptoms than their male counterparts. It is plausible incorporating strategies to help manage these elevated symptoms of anxiety, particularly in female students, could help to improve quality of life and academic performance throughout their educational career.

Reproductive aged women's opinions about contraceptive-related amenorrhea and the safety of oral contraceptives

Authors: Kakaiya R, Lopez L, Nelson A

Institution: Touro University

Presenter(s): Roshni Kakaiya (roshni.kakaiya@gmail.com); Lia Lopez (lialopez@ucdavis.edu)

Presentation Time: Friday, 8:51 - 9:00pm; Diplomat B Room

Roshni Kakaiya and Lia Lopez report no financial conflicts of interest. Anita L Nelson declares that she has received payments for research from Agile, Bayer, ContraMed and Merck, and honoraria for participation on advisory boards or speaker bureaus for Allergan, Agile, Aspen Pharmaceutical, Bayer, ContraMed, The Female Health Company, Merck, MicroCHIPS Biotech, and PharmaNest.

ABSTRACT

Hypothesis/Objective

Unintended pregnancy rates in the United States (45%) remain higher than the global average (40%). Many of the most effective modern contraceptives alter women's bleeding and may, with time, eliminate it entirely. Since women's understanding about such method-related amenorrhea and about the comparative safety of contraceptive methods may affect their choice and use of birth control methods, we sought to assess women's opinions about method-related amenorrhea, as well as the health risks of contraception compared to pregnancy.

Methods

English speaking, nonpregnant, reproductive-aged women, who were not surgically sterilized, were individually interviewed by one or two researchers in various setting on the campus of Los Angeles Biomedical Research Institute at Harbor-UCLA. They were asked about their demographic characteristics, as well as their beliefs about amenorrhea associated with contraceptive use, and the relative safety of oral contraceptives.

Results

The study population included a convenience sample of 493 women aged 18-45 years whose education ranged from middle school to postdoctoral level and whose parity ranged from 0-6 children. Overall, 70.7% of participants viewed method-related amenorrhea as "unhealthy," and associated it with a medical condition or hormonal imbalance. Additionally, the majority of participants stated that oral contraceptives are at least as risky to a woman's health as pregnancy; and education did not substantially affect that finding.

Conclusions

Concerns about menstrual suppression may hinder the usage of contraceptives such as IUDs, implants, injectable contraception, and continuous-use oral contraceptives that offer additional non-contraceptive health benefits. Additionally, there is widespread misunderstanding regarding the safety of oral contraceptives compared to pregnancy, which can have profound implications in both areas. Better education in reproductive health is needed at all levels.

Assessing Refugee Women's Family Planning Needs in Clarkston, GA

Authors: Kaplan J, DeSimone M, Kaiser E, Lathrop E

Institution: Emory University School of Medicine

Presenter(s): Jessica Kaplan (jessie.kaplan@gmail.com)

Presentation Time: Saturday, 9:03 - 9:12am; Diplomat A Room

ABSTRACT

Hypothesis:

Refugee women represent a vulnerable population with unique healthcare needs; they often experience barriers to accessing health services and disparities in reproductive health outcomes. We hypothesized that there is an unmet need for family planning services in Clarkston, GA, a refugee resettlement area outside of Atlanta.

Methods:

A cross-sectional survey was conducted at the Clarkston Community Health Center (CCHC), a primary care clinic for uninsured refugees. Women of reproductive age (15-49) presenting to the CCHC from May to November 2016 were surveyed if they could speak English or had an English-speaking female interpreter. Contraceptive knowledge, contraceptive prevalence, and unmet family planning need were determined, the latter using a modified version of the WHO's definition: fecund, sexually active women not wanting a child soon and not using a highly effective contraceptive method. Data were analyzed using SAS 9.0.

Results:

69 refugee and immigrant women (median age 33) of 11 ethnicities (38% Asian, 19% SE Asian, 10% Middle Eastern) completed the survey. 42 (61%) were Muslim, 14 (20%) were Christian, and 36/68 (53%) had no university education. While 55/62 (89%) had heard of at least one highly effective family planning method (IUD, implant, pills, shots, tubal ligation), only 10/62 (16%) had used one of these methods in the past. Currently, 32/62 (52%) were using any contraceptive method; 10 (16%) were using a highly effective method, 22 (35%) were using a less effective method (condoms, calendar method, withdrawal, abstinence) and 30 (48%) were not using any method. 11/69 (16%) of the total population surveyed and 11/16 (69%) of the population at highest risk for pregnancy experienced unmet family planning needs.

Conclusion:

There is a considerable unmet contraceptive need in this refugee population. It is essential to determine the need in these vulnerable populations and to assess barriers to accessing effective contraceptive methods.

Comparison of In Situ Hinge Craniotomy to Traditional Decompressive Craniectomy: A Novel Approach

Authors: Ko K, Roy O, Sadr A

Institution: Northeast Ohio Medical University

Presenter(s): Olivia Roy (oroy@neomed.edu)

Presentation Time: Friday, 8:42 - 8:51pm; Diplomat B Room

ABSTRACT

Background and Hypothesis: A hinge craniotomy is an alternative to decompressive craniectomy in patients with intracranial hypertension in which the bone flap remains in situ thereby eliminating the need for a subsequent traditional cranioplasty. This study compares total OR times between the modified cranioplasty after the hinge craniotomy versus the traditional cranioplasty after the decompressive craniectomy. This study is designed to further evaluate the efficacy of the Hinge Craniotomy as an alternative surgical procedure in place of the decompressive craniectomy.

Method: Between 2005 and 2012, 15 patients underwent a methyl methacrylate cranioplasty and 46 underwent a modified cranioplasty with hinge closure. The diagnostic codes for both groups were similar and included cranial defect, stroke, infarct, traumatic brain injury and intracranial hemorrhage. Operating room time (OR time) and hospital stay duration were noted.

Results: The average OR time for a normal cranioplasty procedure was 184.4 minutes and had a range of 148-228 minutes. The average OR time for patients undergoing the modified cranioplasty was 27.9 minutes with a range of 9-85 minutes. Statistical analysis determined a significant difference in OR time between the two procedures ($p < 0.0001$). Furthermore, all patients in the modified cranioplasty group were discharged within 23 hours of the procedure compared to 2-3 days in the traditional cranioplasty group.

Conclusions: For patients in whom hinge craniotomy is performed, the closure of the hinge is accomplished in significantly less time than the traditional cranioplasty and in some patients can be accomplished under local anesthesia. This results in less OR time, earlier discharge and consequently lowered health care costs. In addition, the hinge method does not require preservation of the autologous bone flap nor the acquisition of a synthetic skull section which means a decreased risk of infection from foreign material entering the cranium and also lower health care costs.

Medical students' mental health and help-seeking behavior: the role of gender and parental influence

Authors: Koniewicz KL, Jones AO, Kang J

Institution: University of Illinois-Rockford

Presenter(s): Kristen Koniewicz (koniewi2@uic.edu)

Presentation Time: Saturday, 9:12 - 9:21am; Diplomat B Room

ABSTRACT

Hypothesis: Approximately 400 U.S. physicians take their lives each year. The rate of suicide is four times higher in female physicians than females in other professions. Understanding mental health and help-seeking behavior during medical training is imperative to prevent such tragedies. While studies indicate high rates of depression among medical students, little is known about support utilized when seeking help. We investigated medical student support systems including the role of gender and parental support in help-seeking. We hypothesized that there would be differences in willingness to seek help by gender. Any differences in support preference and depression were considered exploratory.

Methods: Medical students enrolled at two campuses of a midwestern university participated in the study. Questions eliciting demographics, help-seeking, and depression based on the PHQ-9 were provided using an anonymous online survey. During a three-month period, 189 students completed the questionnaire. The response rate was 53% with equal male and female participation. SPSS analysis was performed with a significance level set at 0.05.

Results: Approximately 68% of respondents reported they would seek support if experiencing sadness. Roughly 81% of females compared to 55% of males reported they would seek support ($p=.00$). Parents were considered primary support among 21% of students, with female respondents being 1.5 times more likely to identify parents as a source of support than male respondents ($p=.00$). More often, students reported significant others (29%) and non-medical student friends (28%) as primary support. There was no statistical difference in prevalence or severity of depression by gender ($p>.05$).

Conclusions: Findings suggest differences in help-seeking by gender despite not seeing significant differences in depression. Wellness and suicide prevention programs may want to involve significant others and friends outside the medical students' class as these groups often play a supportive role.

Prevalence and clinical features of pollen food allergy syndrome in adults with eosinophilic esophagitis

Authors: Letner D, Farris A, Khalili H, Garber J

Institution: Albany Medical College

Presenter(s): Dorothea Letner (letnerd@mail.amc.edu)

Presentation Time: Saturday, 8:54 - 9:03am; RM 237 Room

ABSTRACT

Eosinophilic esophagitis (EoE) is associated with atopic diseases including asthma, allergic rhinitis and atopic dermatitis, however limited data exist on the correlation between pollen-food allergy syndrome (PFAS) and EoE. We analyzed 346 adults with EoE treated at a single center between 2002-2016. Demographic and EoE-specific data, including clinical features and measures of EoE disease severity and treatments were collected. The presence of other atopic diseases, family history, prevalence of peripheral eosinophilia and elevated IgE, and details of PFAS triggers were collected. 26% of the 346 subjects in our cohort had both EoE and PFAS (EoE-PFAS). Compared to subjects with EoE alone, subjects with EoE-PFAS had an increased frequency of allergic rhinitis (86.7% vs. 64.2%, $P < 0.001$) and family history of allergies (71.1% vs. 53.3%, $P = 0.003$), and comprised a higher proportion of EoE diagnoses made in the spring ($X^2 < 0.001$). Concurrent EoE and PFAS were also associated with higher serum IgE at the time of EoE diagnosis (460.6 vs. 289.9, $P < 0.019$). Allergic rhinitis and a family history of food allergy were independently associated with having EoE-PFAS. The most common triggers of PFAS in adults with EoE are apples (21.1%), carrots (15.5%) and peaches (15.5%). Along with asthma, allergic rhinitis and atopic dermatitis, PFAS is a common allergic comorbidity that is highly associated with EoE. Further studies aimed at understanding mechanistic similarities and differences of PFAS and EoE may shed light on the pathogenesis of these closely related food allergy syndromes.

Lipoprotein(a) Reductions following Bariatric Surgery are Procedure-dependent

Authors: Lin B, Parikh M, Berger JS, Fisher E, Heffron SP

Institution: New York University School of Medicine

Presenter(s): Bing-Xue Lin (bingxue.lin@med.nyu.edu)

Presentation Time: Friday, 8:24 - 8:33pm; Diplomat B Room

ABSTRACT

Hypothesis:

Structurally similar to LDL, lipoprotein(a) [Lp(a)] is an independent risk factor for atherosclerotic cardiovascular disease and calcific aortic stenosis. Lp(a) levels are genetically determined and not lowered with most conventional therapies, including statins. Bariatric surgery has been shown to improve serum lipid profile, in addition to producing substantial weight loss, but the effects of bariatric surgery on Lp(a) are unknown.

Methods:

Sixty-eight women undergoing Roux-en-Y Gastric Bypass (RYGB, n=30) or Sleeve Gastrectomy (SG, n=38) were examined prior to and at six months following surgery. At each visit, anthropometrics were measured and blood was drawn for plasma lipid analyses, including Lp(a). Subjects were excluded if they were active smokers, or taking medications known to influence lipid levels.

Results:

There were no statistically significant differences in baseline anthropometrics and lipid levels between the surgical groups, including body weight (RYGB=111±17kg, SG=112±19kg, p=0.93), and levels of ApoB-containing particles: Lp(a) [RYGB=14 (8,30)mg/dL, SG=27 (19, 44)mg/dL, p=0.06], LDL-C (RYGB=103±22mg/dL, SG=115±32mg/dL, p=0.09), and ApoB (RYGB=85±15mg/dL, SG=94±21mg/dL, p=0.06).

At six months following surgery, body weight was markedly reduced in both groups (RYGB 79±14kg; SG 81±14kg; p=0.52). Compared to women undergoing SG, those undergoing RYGB experienced a significant change in levels of Lp(a) (RYGB -30%, SG -5%, p<0.0001), ApoB (RYGB -15%, SG -3%, p<0.0001), and LDL-C (RYGB -23%, SG -2%, p<0.0005). The RYGB-specific reduction in Lp(a) persisted when subjects were matched 1:1 by baseline Lp(a). Further, reduction in Lp(a) was more pronounced in RYGB subjects with baseline Lp(a)>30mg/dL, an established threshold for pathologically elevated Lp(a).

Conclusions:

Despite comparable weight loss, RYGB, but not SG, produced marked reductions in levels of Lp(a) and other ApoB-containing particles at six months after surgery. Further studies of mechanisms responsible for the RYGB-unique reduction in Lp(a) may provide insight into novel pharmacologic targets for mitigating this risk factor in broader populations.

A Qualitative and Intersectional Approach to Patient Needs in an LGBTQ Population

Authors: Malik S, Master Z, Parker W, DeCoster B, Campo-Engelstein L

Institution: Albany Medical College

Presenter(s): Saba Malik (maliks@mail.amc.edu)

Presentation Time: Saturday, 8:00 - 8:09am; Embassy Ballroom

ABSTRACT

Intro: Through narrative interviews, we aimed to identify themes in how LGBTQ/gender-variant self-identified patients have experienced healthcare and how specific segments of the LGBTQ population differ in their experiences with physicians. The result is an intersectional and qualitative look at individual patient needs and experiences with healthcare providers. By looking at patient perspectives, we are better able to gain an understanding about disparities in care and treatment, and where improvements can be made with regards to patient-physician relationships in this population.

Methods: A qualitative approach was selected to illuminate the complex issues facing LGBTQ and gender minority patients in healthcare settings. Qualitative research is often employed when data cannot be easily analyzed and reduced to numbers. A series of semi-structured interviews were performed using an interview guide consisting of 3 demographic questions, 11 questions on self-rated health and choosing providers and 7 questions on sexual orientation/gender self-identification as well as its perceived role in the patient-provider relationship.

Results: We identified five major themes that demonstrate the complexity of experiences among this specific group of sexual and gender minority individuals: Heteronormative and Gender Assumptions, Disclosure of Orientation or Gender Identity, Distrust, Burden of HIV and Racial Discrimination. Exemplary quotes have been selected that highlight each of these themes.

Conclusions: The goal of exploratory qualitative research is not to derive conclusions based on hypotheses but rather allow for an open-ended search for gaps in understanding and areas for further research. Using an intersectional lens when developing relationships with patients allows for a deeper understanding of the impact of systems of discrimination and oppression on patients' lives. Providers can improve on their relationships with patients by becoming aware of how the power gap between patients and providers is also influenced by existing power dynamics (racism, sexism, classism, heterosexism, gender norms, etc).

A role for student-led mentorship programs in perceived childrearing self-efficacy amongst adolescent mothers

Authors: Miller-Bedell ER, Wahba B, Flatley M, Parambil J, Burke K

Institution: Albany Medical College

Presenter(s): Emma Rose Miller-Bedell (millere3@mail.amc.edu); Bahia Wahba (wahbawahbab@mail.amc.edu); Meaghan Flatley (flatlem@mail.amc.edu); Jaimie Parambil (parambj@mail.amc.edu)

Presentation Time: Friday, 7:48 - 7:57pm; Solano Room

ABSTRACT

Objectives and Needs: Participation in the medical-student-led Strong Mom program at Albany Medical Center will correlate with an improvement in participant's perception of their childrearing capabilities. Improvements will be achieved by offering adolescent mothers social support through mentorship and educational resources through bimonthly meetings over a six-month period.

Adolescent maternity poses challenges in parenting dynamics and has become a serious public health issue. Mothers between 13-19 years old reported less satisfaction in their childrearing than adult mothers. In contrast, adolescent mothers who reported high social support are more likely to form secure infant attachments, an indicator of better future health outcomes. Adolescent births increase tax-payer costs by 9.4 billion yearly due to increased foster care, incarceration rates, and healthcare demands. Strong Mom offers a potential point of intervention by providing educational resources and social support through mentorship.

Methods: As a one-year pilot study (n=12), eligible participants attended 60% of meetings in the 6-month period and were younger than 21. Participants completed anonymous Perceived Maternal Parenting Self-Efficacy questionnaire to gauge degree of satisfaction, competence, and confidence in childcare upon entering the Strong Mom program. The same questionnaire will be completed upon program conclusion.

Results: While preliminary data indicates that the majority of moms feel very confident in their ability to tend to basic needs like feeding and changing the baby, lower confidence in reading social cues and developing deeper social connections with the baby was reported.

Conclusion: To date, this study shows points of insecurity regarding social attachment - namely reading baby's cues and developing connections. In accord with the goals of the Strong Mom program, this study supports a positive role for medical student mentorship intervention in promoting perceived childrearing efficacy amongst adolescent mothers, and can be used as a model for other medical schools to install similar programs.

Long-term Outcomes in Twins with Fetal Growth Restriction

Authors: Odom E, Cohen N, Gupta S, Lam-Rachlin J, Saltzman D, Rebarber A, Fox N

Institution: Icahn School of Medicine at Mount Sinai

Presenter(s): Elizabeth Odom (elizabeth.odom@icahn.mssm.edu)

Presentation Time: Friday, 7:39 - 7:48pm; Solano Room

ABSTRACT

Hypothesis: While fetal growth restriction (FGR) is very common in twin pregnancies, the long-term adverse outcomes are largely unknown. The purpose of this study was to determine if FGR in twin pregnancies is associated with long-term complications.

Methods: All patients with twin pregnancies that delivered after 34 weeks gestation at a single MFM practice between 2005 and 2014 were surveyed. Women with mono-mono twins, IUFD, and major congenital anomalies were excluded. The survey addressed pediatric outcomes at or after 2 years of life. The survey was mail-based, with phone follow-up for nonresponses or clarification of answers. We compared outcomes between with and without FGR, defining FGR as a twin birthweight less than the 10th percentile for gestational age, using a regression analysis to control for twins of the same mother. We repeated the analysis using FGR definition of birthweight less than the 5th percentile.

Results: 360 women (66.4%) responded of the 542 women who met the inclusion criteria. Of the 712 children included, 282 (39.6%) had a birthweight less than the 10th percentile and 137 (19.2%) less than the 5th percentile. Mothers of twins less than the 10th percentile were more likely to report colic (10.6% vs. 6.1%, $p=0.042$), short stature (6.7% vs. 1.2%, $p<0.001$), low weight (10.0% vs. 3.0%, $p=0.001$), and a concern about motor skills (11.3% vs. 6.8%, $p=0.044$). There were no differences in neonatal death, major medical problems, physical/occupational/speech therapy, or other developmental milestones. Twins less than the 5th percentile were more likely to have major adverse outcomes, such as death, CP, NEC, and chronic renal/heart/lung disease (4.4% vs. 1.6%, $p=0/046$).

Conclusions: Twin birthweight less than the 5th percentile is associated with major morbidity; however, the absolute risk is less than 5%. This information can be used to counsel and reassure patients with FGR in twins.

Inconsistency in Radiotherapy Organ-at-Risk Segmentation: Can Knowledge Databases Tell Us When it Matters?

Authors: Paffen S, Berry S

Institution: Memorial Sloan Kettering Cancer Center

Presenter(s): Savannah Paffen (spaffen@iu.edu)

Presentation Time: Saturday, 9:12 - 9:21am; Diplomat A Room

Disclosure: Research reported in this publication was supported by the National Cancer Institute of the National Institutes of Health under Award Number R25CA020449. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

ABSTRACT

Hypothesis: Radiation therapy has adverse effects on organs surrounding the tumor, known as organs-at-risk (OARs). Toxicity is related to mean dose (Dmean) in organs with parallel functional subunits, such as glands, and max dose (Dmax) in organs with a serial structure, such as nerves. The planning target volume (PTV) and OARs are segmented on a CT scan, which is used in radiotherapy treatment planning to construct a radiation dose distribution. This delivers the prescribed dose to the PTV, while limiting the dose to the OARs. However, poor or inconsistent OAR segmentation can unintentionally direct high dose to the true anatomical OARs, potentially resulting in unpredicted side effects. To address this inconsistency, an oropharynx knowledge-based model (KBM) was built to predict whether variable segmentation of the current patient's CT scan would result in clinically significant dose differences to the OARs.

Methods: The KBM was constructed from 47 prior radiotherapy plans, each containing PTV and OAR segmentations. Then, the model was applied to 12 patient CT scans, each with 5 auto-segmented (AS) and 1 expert manual segmented (EMS) version of the following OARs: parotid, larynx, submandibular gland, mandible, brachial plexus. The difference in the KBM predicted doses between each AS and the EMS was recorded and analyzed.

Results: The KBM is capable of predicting OAR doses within <10% of the actual calculated doses. Inconsistency in segmentation of Dmean OARs generally results in greater dose discrepancies (average+/-std dev) (23.8+/-15.4%) than inconsistency in Dmax OAR segmentations (5.3+/-2.9%).

Conclusions: This validated oropharynx KBM can be utilized in the radiation oncology clinic to improve quality and consistency in the treatment planning process by highlighting when the variability in an OAR's segmentation will introduce a clinically significant difference in that OAR's calculated dose.

Treatment of AKI in Developing and Developed Countries: An International Survey of Pediatric Dialysis Modalities

Authors: Raina R, Bunchman T, Askenazi D, Chauvin AM, Deep A, Sethi SK

Institution: Northeast Ohio Medical University

Presenter(s): Abigail Chauvin (achauvin@neomed.edu)

Presentation Time: Friday, 8:33 - 8:42pm; Diplomat B Room

ABSTRACT

Hypothesis

Acute kidney injury (AKI) is a common cause of morbidity and mortality worldwide, with a pediatric incidence ranging from 19.3% to 24.1% [1]. Treatment of pediatric AKI is a source of debate in varying geographical regions. Currently CRRT is the gold-standard treatment for pediatric AKI, but limitations due to cost and accessibility force use of adult equipment and other therapeutic options such as peritoneal dialysis (PD) and hemodialysis (HD). It was hypothesized that more cost-effective measures would likely be used in developing countries due to lesser resource availability.

Methods

A 26-question internet-based survey was distributed to 650 pediatric Nephrologists. There was a response rate of 32% (205 responses). The survey was distributed via pedneph and pcrrt email servers, inquiring about demographics, technology, resources, pediatric-specific supplies, and preference in renal replacement therapy (RRT) in pediatric AKI. Due to the low response rate, descriptive statistics were the central method of analysis as the power of the statistical tests would not be great enough to perform any inferential tests.

Results

PD was available in all centers surveyed, while HD was available in 85%, CRRT was available in 60%, and SLED was available in 20%. HD, SLED, and CRRT were available in only 5 centers in the developing world. In developing countries, 67% of physicians preferred PD to more costly therapies, while in developed countries it was found that 99% of physicians favored HD or CRRT. Additionally, 83% of physicians in the developing world reported using rigid PD catheters as opposed to Tenckhoff PD catheters.

Conclusions

Necessity and expense often preclude standards of care in developing countries, and there is much development needed in terms of meeting higher global standards for treating pediatric AKI patients. In the future, more surveys should be conducted to generate a larger sample size and more holistic result.

Hispanic Ethnicity and Hepatobiliary Cancer Stage at Diagnosis

Authors: Ramsuchit B, Rieger B, Polcz V, Barengo NC, Varella M

Institution: Florida International University Herbert Wertheim College of Medicine

Presenter(s): Valerie Polcz (vpolc001@fiu.edu); Brenda Rieger (brieg002@fiu.edu)

Presentation Time: Friday, 12:18 - 12:27pm; Diplomat B Room

ABSTRACT

Introduction: Hispanics have been shown to have increased prevalence and higher mortality from hepatobiliary cancer compared to non-Hispanic Whites¹. Yet, the mechanisms explaining those findings are not clear. The aim of this study was to assess whether an association exists between Hispanic ethnicity and stage of hepatobiliary cancer at diagnosis in US patients.

Methods: We studied patients ≥ 18 years with a primary diagnosis of hepatic or intrahepatic bile duct cancer reported to the Surveillance, Epidemiology, and End Results (SEER) program² between January 2004 and December 2013. Information on ethnicity (Hispanic versus non-Hispanic) and cancer stage at diagnosis according to the SEER Summary Staging³ (ranging from 0 to 9 and categorized for analysis as localized if < 2 or non-localized if ≥ 2) were based on medical records. Multivariate logistical regression was used to assess independent associations.

Results: Of 23,996 hepatobiliary cancer patients identified, 20,342 (85%) were studied. Hispanics comprised 10% of the sample, and 50% of patients had non-localized stages. In the unadjusted analysis, Hispanics had a lower odds of having non-localized stages (OR=0.84; 95% CI=0.77 to 0.92). After adjusting for sex, age, geographic location, diagnostic confirmation, and insurance status, Hispanics had 10% lower odds of having non-localized stages, but results were of borderline significance (OR=0.90; 95% CI=0.80 to 1.01).

Discussion: We found no evidence that Hispanic patients with hepatobiliary cancer are at higher risk of being diagnosed at non-localized stages. Our findings, while preliminary, might suggest that disparities in prognosis for Hispanics are not due to delays in diagnosis.

References:

- 1 Mathur AK, Osborne NH, Lynch RJ, Ghaferi AA, Dimick JB, Sonnenday CJ. Racial/ethnic disparities in access to care and survival for patients with early-stage hepatocellular carcinoma. *Arch Surg.* 2010;145(12):1158-63.
- 2 Surveillance, Epidemiology, and End Results (SEER) Program (www.seer.cancer.gov) Research Data (1973-2013), National Cancer Institute, DCCPS, Surveillance Research Program, Surveillance Systems Branch. Accessed July 5, 2016.
- 3 Young JL Jr, Roffers SD, Ries LAG, Fritz AG, Hurlbut AA (eds). SEER Summary Staging Manual - 2000: Codes and Coding Instructions, National Cancer Institute, NIH Pub. No. 01-4969, Bethesda, MD, 2001.

Community-Based Asthma Education

Authors: Rau-Murthy R, Bristol L, Pratt D

Institution: Albany Medical College

Presenter(s): Rohini Rau-Murthy (raumurr@mail.amc.edu)

Presentation Time: Friday, 8:24 - 8:33pm; Solano Room

ABSTRACT

Objectives: The authors studied the impact a community hospital-based asthma education (AE) program had on asthma understanding, healthcare utilization, and estimated costs.

Study Design & Methods: Every self-selected enrollee in Ellis Hospital's AE program from April 1, 2011 to December 31, 2015 was captured prospectively, using quality assurance data. Significant changes comparing individual progress were evaluated using two tailed paired t testing in SPSS. Care utilization was measured one year before and after AE. Asthma control was evaluated with Asthma Control Test (ACT) scores. The average charges for Emergency Department (ED) visits and asthma admissions was used to estimate cost impact.

Results: 574 patients of all ages (mean age =30 years) were seen over the study period. Participants reported better controlled asthma (mean pre-AE ACT score=14, mean post-AE ACT score =19; $p<0.001$). Individuals also demonstrated increased asthma knowledge (pre-AE mean knowledge score =10, post-AE score = 13; $p<0.001$). In the 12 months prior to education, there was a mean of 1.1 ED visits and 0.16 inpatient admissions per asthma education participant. In the 12 months following education, ED visits dropped to a mean of 0.4 visits and admissions to 0.06 per individual ($p<0.01$). We estimate that the program decreased ED charges for this study cohort by about \$600,000, and inpatient charges by about \$230,000.

Conclusions: Our data suggests that patient asthma education efforts at the community level are associated with better knowledge of asthma, decreased symptoms, and increased quality of life. The use of expensive resources also declined.

Analysis of the Effect of Pre-Appointment Checklists on Documentation of HPV Vaccine Status in Women 26 Years Old and Younger during Well Woman Exams

Authors: Schuchmann J, Bhakta P, Kleinmann W, DiTeresi R

Institution: University of Kansas

Presenter(s): Whitney Kleinmann (wkleinmann@kumc.edu); Priya Bhakta (pbhakta@kumc.edu)

Presentation Time: Friday, 7:48 - 7:57pm; Diplomat A Room

ABSTRACT

Hypothesis

Routine health maintenance is a key aspect of well woman exams. Vaccine status is a component that is often overlooked at a routine gynecologic yearly exam. Our study aimed to see if vaccine checklists would increase documentation of HPV vaccine status in women 26 and younger.

Methods

A vaccine checklist was distributed to all ob/gyn patients before attending their well woman visits at KUMC over a period of two months. The patients were instructed to give this checklist to their provider at the start of the visit. Well woman visits from the same two months of the previous year served as a control group. Documentation from 1,085 well woman visits was analyzed to compare documentation of vaccine status pre- and post-intervention. The medical record was also analyzed to see if administration of the HPV vaccine to eligible patients increased with use of the checklist.

Results

Our study found that vaccine checklists increased documentation of any vaccine from 26.7% to 34.1% ($p=0.0085$). Documentation of HPV vaccine status in patients 26 years old or younger increased from 47.9% to 59.4% post-intervention ($p=0.08$). In addition, 49.1% of eligible patients were administered the HPV vaccine, although there was not a statistically significant difference pre- and post-intervention in the number of women who received the HPV vaccine.

Conclusion

In summary, a pre-appointment vaccine checklist increased documentation of any vaccine in the medical record, and our data suggests that it also increases documentation of HPV vaccine status in patients 26 years old and younger. Future research could examine methods to increase administration of the HPV vaccine to eligible patients.

Tracking the Epidemic: Zika in Pregnancy – The Miami Experience

Authors: Starker R, Crane A, Kwal J, Lardy M, Picon M, Tse C, Gonzalez I, Rodriguez P, Curry C

Institution: University of Miami Miller School of Medicine

Presenter(s): Rebecca Starker (rstarker@med.miami.edu)

Presentation Time: Saturday, 8:36 - 8:45am; Diplomat A Room

ABSTRACT

Hypothesis: Zika virus infection in pregnancy is a global health concern. With recent onset of local transmission, obstetricians in Miami are now in the unique position of providing care to both pregnant women with the first cases of locally transmitted Zika virus infection in the United States and those traveling from other endemic countries. This study aims to provide data on Zika-exposed pregnant women delivering in the United States with the hypothesis that the number of pregnant women with any laboratory evidence of Zika virus infection will continue to rise as a result of local transmission.

Methods: A retrospective chart review was conducted using laboratory records of Zika virus testing (PCR and IgM) completed from January through November 2016 at multiple tertiary care centers in Miami. Testing was based on CDC guidelines at time of testing, leading to heterogeneity in tests performed. Demographic data was extracted from all women with PCR and/or IgM testing positive for Zika virus infection in serum or urine. Routine obstetrics parameters and presence of fetal or neonatal abnormalities were recorded.

Results: At the time of writing, 1365 pregnant women were screened for Zika virus infection. Of those screened, 77 (5.64%) were considered Zika-positive with PCR and/or IgM positive testing in serum or urine. Thirty-eight (49.35%) Zika-positive pregnant women have delivered, 6 (15.79%) of which had documented abnormalities on fetal ultrasound. Of the remaining 39 Zika-positive pregnant women who have not yet delivered, 1 (2.56%) has notable abnormalities on fetal ultrasound. To date, 2 (5.26%) newborns have been born with congenital abnormalities, 1 with clinically-defined microcephaly and both with intracranial calcifications.

Conclusions: As this epidemic persists, data from this unique cohort of pregnant women with both local and travel-related Zika virus exposure contributes to the growing knowledge base regarding implications of Zika virus infection in pregnancy.

Variation of Medical Students' Career Expectations

Authors: Tedesco AE, Corrington A, Lazarus C

Institution: Louisiana State University- Health Science Center New Orleans

Presenter(s): Alexandra Tedesco (atedesco6@gmail.com)

Presentation Time: Friday, 8:06 - 8:15pm; Diplomat A Room

ABSTRACT

Hypothesis

We aimed to assess medical students' career expectations. We hypothesized that female medical students expect to earn less money than their male counterparts, and that female medical students will be less likely to expect leadership positions and admissions to competitive residencies.

Methods

Louisiana medical students (N=314) participated in an online survey. Participants were asked how many hours per week they expected to work and how much money per year they expected to earn after completing their residency. Using a 5-point Likert-type scale ranging from Strongly Disagree (1) to Strongly Agree (5), participants indicated the extent to which they expected to be confident in their knowledge, the extent to which they believed there were specialties they could not enter, the extent to which they expected to be accepted to a competitive residency, and the extent to which they expected to hold a leadership position at some point.

Results

Results revealed that female students expected to have a lower salary than their male counterparts; $t(305)=3.29$, $p=.001$. Additionally, females ($M=4.34$, $SD=.859$) compared to males ($M=4.11$, $SD=1.041$) were more likely to agree that there are specialties in which they would not excel; $t(305)=2.12$, $p=.035$. Moreover, females ($M=4.12$, $SD=.829$) were significantly less likely to expect to hold a leadership position in their career compared to males ($M=4.37$, $SD=.761$); $t(305)=2.76$, $p=.006$.

Conclusion

The data support our hypothesis that female medical students expect to earn less than male medical students. Furthermore, the data support the idea that female medical students are less likely to expect to hold a leadership position in their career, and similarly, that female medical students are more likely to agree with the statement that there are specialties they could not enter even if they wanted to. Future research should examine why female medical students feel restricted from certain specialties and strategies for improving their expectations of leadership and salary.

The Role of Peripheral Endothelial Cell Count in the Progression of Fuchs' Endothelial Corneal Dystrophy

Authors: Tran JA, Syed ZA, Jurkunas UV

Institution: Boston University School of Medicine

Presenter(s): Jennifer Tran (jenntran@bu.edu)

Presentation Time: Saturday, 8:09 - 8:18am; RM 237 Room

ABSTRACT

Introduction: Fuchs' endothelial corneal dystrophy (FECD) is a progressive disease of the cornea characterized by the degeneration of the corneal endothelium. FECD typically afflicts a disproportionate number of women as compared to men, and treatments include various types of corneal transplantation. The hallmark features of FECD are focal accumulations of collagen over the posterior cornea referred to as "guttae", endothelial cell loss, as well as increased thickness of the central cornea. Consequently, the progression of this disease can be suggested by worsening of any of these three features. Early morphological changes in FECD occur in the central cornea, with peripheral changes occurring later in the disease course. As such, guttae and endothelial cell loss centrally are not helpful in monitoring disease progression.

Hypothesis: This study proposes using cell count in the peripheral cornea as opposed to the central cornea as a reliable way of determining disease progression in moderate to advanced FECD patients.

Methods: This was a retrospective study involving patient chart reviews from January 2013 to February 2016. De-identified data of 50+ patients pertaining to measurements of guttae via Heidelberg Retinal Tomography (HRT) images, central corneal thickness, stage of FECD, and subsequent corneal surgeries were collected and run through statistical analyses.

Results: The peripheral endothelial cell count (ECC) was found to be statistically significant when compared to both central corneal thickness ($p < 0.05$) and disease grade (from stage 0-4, $p < 0.05$). In patients with advanced stages of FECD, peripheral ECC was strongly correlated with disease grade ($p < 0.05$), but central ECC was not.

Conclusions: Data from this study suggests that peripheral ECC is a more reliable measure of disease severity in moderate to advanced stages of FECD. Therefore, using this metric in diagnosing the severity of FECD would improve diagnostic consistency across ophthalmological practices.

International Experience and its Effect on Cultural Sensitivity Development in Medical Students

Authors: Ulatowski C, Thomas D

Institution: Oakland University William Beaumont School of Medicine

Presenter(s): Chanteil Ulatowski (cdulatowski@oakland.edu)

Presentation Time: Friday, 7:39 - 7:48pm; Diplomat A Room

ABSTRACT

Introduction

A study by Didion (2014) revealed that 18-21 year old students demonstrated less cultural sensitivity than older students due to their lack of international experiences. The median age of Oakland University William Beaumont School of Medicine (OUWB) students is approximately 25, slightly older than the cohort in the Didion study. The goal of this study was to measure the degree of cultural sensitivity among OUWB students and correlate this with the type and duration of their cross-cultural experiences.

Methods

This study examined cross-cultural experiences of first through fourth year OUWB students. Using Qualtrics, prospective participants were emailed a slightly modified, validated measure ("Promoting Cultural and Linguistic Competency: Self-Assessment Checklist for Personnel Providing Primary Health Care Services"), created by the National Center for Cultural Competence at Georgetown University. Respondents' assessed cultural sensitivity and duration of foreign visit responses were analyzed using Kendall's tau-b method and ANOVA.

Results

Sixty-two OUWB medical students completed the voluntary survey. We found that students who traveled abroad for longer periods of time (>60 days), reported more cultural awareness of folk and religious influence on families' responses to medical care. We also determined that students who traveled abroad >60 days were more aware of specific health and mental disparities within certain ethnic groups.

Conclusions

International travel among OUWB medical students should be encouraged as it can promote the development of cultural sensitivity in future doctors, which is extremely valuable in the clinical setting. Using the findings from this study, future research can be conducted to determine if international experience programs implemented in medical school curricula have positive effects on the development of cultural sensitivity among students.

On the Efficacy of 1-on-1 Monitoring in Cases of Factitious Hypoglycemia**Authors:** Andrews E, Brandon R, Jones-McClure L**Institution:** Indiana University School of Medicine**Presenter(s):** Erik Andrews (edandrew@indiana.edu); Brandon Roberts (robertbd@iu.edu)**Presentation Time:** Friday, 12:36 - 12:45pm; RM 232 Room

ABSTRACT

Case: 54-year-old female on disability with PMHx of HTN, MI, hypercholesterolemia, migraines, TIA, anxiety, and non-insulin dependent DMII controlled with metformin presented to the ED with hypoglycemia lasting less than one day. Patient denied any recent sulfonylurea usage and stated that she tried eating several meals in efforts to raise her serum glucose, but to no avail. Patient was admitted, glucagon was administered, and a work-up was completed, including abdominal CT, T3/T4/TSH testing, and screening for possible insulinoma. Lab results showed elevated insulin with decreased levels of pro-insulin and C-peptide, indicating exogenous insulin administration. Patient was transferred to a tertiary care facility for further work-up of continued hypoglycemic episodes. Upon institution of a 1-on-1 monitoring program, hypoglycemic episodes resolved. After ruling out other possible organic causes, patient was diagnosed with factitious hypoglycemia thirteen days after being admitted.

Conclusion: Despite lack of prescription, patient was able to obtain and surreptitiously inject insulin to induce persistent hypoglycemic state. Currently 9.3% of the American population is diagnosed with some form of diabetes, with over 2.9 million reliant on insulin as their primary means of control. In coming decades, that percentage is projected to quadruple. Such an environment would permit even wider access to insulin and could culminate in a significant increase of factitious hypoglycemia cases.

Clinical Significance: Hypoglycemia of unknown cause can lead to costly medical workup and elevated strain on hospital resources. With increasingly widespread access to insulin due to the rising number of Americans with IDDM, factitious hypoglycemia should be included in the differential diagnoses of hypoglycemic episodes of uncertain cause. If surreptitious exogenous insulin administration is suspected from lab work, a surveillance program should be trialed in efforts to rule out factitious disorder and possibly curtail extended hospitalization times and unnecessary medical work-up.

“I Am Swollen”: Edema in an Adolescent**Authors:** Bagwell A, Ewbank M, Bertoloni Meli S, Rohr-Kirchgraber T**Institution:** Indiana University School of Medicine**Presenter(s):** Mei-Ling Ewbank (meewbank@iu.edu)**Presentation Time:** Saturday, 5:33 - 5:42pm; Diplomat B Room

ABSTRACT

Primary lymphedema is caused by a congenital or inherited malformation of the lymphatic vessels. The condition is most common in female patients and symptoms usually present during the onset of puberty. Due to this presentation, it is thought that estrogen may play a role in the onset of lymphedema. Lymphedema may have serious complications for patients, such as infection and lymphangiosarcoma; therefore it is important to investigate the etiology of the condition and to understand the prognosis.

A 21 year old female with history of chronic bilateral leg edema, presented for an urgent appointment due to increased swelling of the feet and weight gain. She denied pain. At this time she had begun implanon for birth control, and attributed her symptoms to this. Physical exam was significant for woody edema in the upper arms, greatest in right arm, +2 pitting edema in the lower extremities up to knees, and buffalo hump. A CMP, CBC, UA and free cortisol were within normal limits. An ECHO done in 2011 showed normal anatomical structure and normal LVEF and TSH was wnl.

This case of primary lymphedema presents a diagnostic challenge given the rarity, limited presentation of symptoms, and normal laboratory findings. These symptoms may be confused with several other conditions including cyclic edema, congestive heart failure, deep vein thrombosis, and infection. Once the diagnosis of lymphedema is made via physical examination and history taking, the etiology must be further explored. Potential etiologies of primary lymphedema include Milroy's disease, Meiges disease, lymphedema precox, lymphedema tardus, and lymphangiomas. In cases like these, a thorough patient history can serve as a diagnostic tool. In this particular case, the patient's age and gender provide indications of lymphedema precox. Further, it is possible that the patient's birth control exacerbated symptoms of lymphedema, given the potential link between lymphedema and estrogen.

Reversal of Diabetic Stage III Chronic Kidney Disease on a Low Carbohydrate Diet**Authors:** Bell MC, Hallberg SJ**Institution:** Indiana University School of Medicine**Presenter(s):** Maria Bell (maribell@iu.edu)**Presentation Time:** Saturday, 8:00 - 8:09am; RM 232 Room

ABSTRACT

Case: A 50-year old African American female with an over 15 year history of type 2 diabetes and stage III chronic kidney disease presented for medical management of her weight. Initial BMI was 32.2, creatinine was 1.3, and hbA1c was 6.4. She was taking metformin, 500 mg twice daily; sitagliptin, 100 mg daily; and canagliflozin 300 mg daily. The patient was instructed to restrict her carbohydrate intake to less than 50g per day and increase fat consumption to satiety with the goal of achieving nutritional ketosis without caloric restriction. Her canagliflozin was stopped the first day she made dietary changes. After 18 weeks of treatment with regular follow-up appointments and nutritional guidance, the patient's creatinine was 1.03 and hbA1c decreased to 5.6. At this point sitagliptin was stopped but metformin was continued at the same dose. Repeat lab work after 24 weeks demonstrated continued improvement in the patient's creatinine to 0.97 and decreased BMI to 30.1.

Conclusions: While the classical recommendation for patients with kidney disease is to avoid saturated fat, this patient demonstrated improvement in kidney function on a high fat diet without restricting saturated fat. The patient achieved a 2.1 decrease in BMI, reversal of her kidney disease, and improved glycemic control that allowed for cessation of some medications.

Clinical Significance: African Americans have an increased risk of kidney failure in comparison with the general population, and diabetes is the greatest contributing factor. A study in mouse models for type II diabetes has suggested that a ketogenic diet can provide not only prevention, but reversal in diabetic nephropathy. This case is evidence that a low carbohydrate diet may safely allow for reversal of chronic kidney disease, improvement in blood glucose control, and decreased dependence on diabetic medications in a patient with long-standing type 2 diabetes.

An Unusual Presentation of Undifferentiated Connective Tissue Disease

Authors: Bittar JM, Dunfee EK, Wang CY, Rohr-Kirchgraber T

Institution: MUCOM, IUSM, Eskenazi Hospital

Presenter(s): Emma Dunfee (ehatten365@marian.edu)

Presentation Time: Saturday, 8:27 - 8:36am; RM 241 Room

ABSTRACT

The hallmark sign of panniculitis, an inflammation of subcutaneous adipose tissue, presents with hard, tender skin nodules. Systemic signs such as weight loss and fatigue may be present. More common in women, it begins in the lower legs, may spread to the arms/upper chest, lasting about 6 weeks.

A smaller subset has increased lymphocytes in the panniculus which must be distinguished between benign reactive processes, lymphoma, and other conditions. Accurate classification of the panniculitis is crucial to direct clinical management as treatment options vary from non-medical therapy to immunosuppressive agents to aggressive chemotherapy. An adequate biopsy including skin and deep subcutaneous tissue and a collaborative effort between physicians will lead to a specific diagnosis.

A 45 year-old female presented with mild fever, arthralgia, and 6 months of persistent painless, non-tender, subcutaneous nodules over the bilateral upper extremities and left anterior chest. These nodules originated as "small red dots" on her left arm that spread and developed into multiple 4-6 cm hyperpigmented, erythematous subcutaneous mobile nodules. PMH: mild intermittent asthma. FHx: lupus and lung cancer. Workup: positive Antinuclear Antibody (ANA), anti-U1 Ribonuclearprotein antibody (anti-U1 RNP) and Anti-streptolysin O (ASO) titers, negative dsDNA antibodies, Rheumatoid Factor (RF) and Angiotensin Converting Enzyme (ACE) titers and normal WBCs. Biopsy: lobular lymphocytic infiltration of subcutaneous fat, c/w Lupus Erythematosus Profundus (LEP). Unlike many of the other panniculitides, LEP is more commonly identified on upper arms, trunk (including breast) and face, but, not meeting the classification criteria for Systemic Lupus Erythematosus (SLE), a diagnosis of unspecified connective tissue disease (UCTD) with lobular lymphocytic panniculitis was made and the patient was started on steroid therapy leading to significant improvement.

In usual conditions like this, it is important for the clinician and the pathologist to collaborate as the effort to provide appropriate care depends on an adequate biopsy and the clinical history.

Enthesophyte of gluteus medius tendon – an unusual presentation

Authors: Blake E, Wenos C, Worden A, Rohr-Kirchgraber T

Institution: Indiana University School of Medicine

Presenter(s): Astin Worden (astinw@iu.edu); Emily Blake (eeblake@iupui.edu); Chelsea Wenos (cdwenos@iupui.edu)

Presentation Time: Friday, 8:51 - 9:00pm; RM 237 Room

ABSTRACT

Case: 63-year-old female presented to clinic for severe shooting left leg pain for four days, starting in the buttocks and radiating down the front of her thigh and down to the lower legs. Three days before she was unable to bear weight and only sitting still relieved the pain. The pain worsened with standing and walking and woke her up at night. She denied fevers, chills, night sweats, muscle weakness, and new GI or GU symptoms. She did not have any recent trauma or precipitating event. She is status post L2-5 laminectomy a year prior for spinal stenosis and reported improved bilateral leg weakness with right leg neuropathy, and no problems with left leg neuropathy.

Physical exam showed difficulty standing on the left leg and lying on the exam table. Left leg muscles were not tender to palpation. Femoral pulses bilaterally were decreased at 1+ with warm skin and toes. Range of motion was decreased due to pain in left hip. At this time a unilateral left hip x-ray was ordered which revealed a new undefined lucency at the tip of the greater trochanter that was further defined by pelvic CT interpreted as enthesophyte or dystrophic calcification of the left gluteus medius tendon as it inserted at the greater trochanter.

Discussion: Hip pain is a common complaint encountered by physicians in the clinic. Often times this pain can be attributed to trochanteric bursitis [2]. However, a number of other conditions may present similarly, including stress fractures, tumors and avascular necrosis, among others [2]. Furthermore, hip pain may even be referred from diseases of the lumbar spine, such as IV disc herniation or spinal stenosis [2].

Despite a history and treatment of lumbar spinal stenosis, enthesophyte of the gluteus medius tendon at its insertion was responsible for this patient's hip pain – a fairly uncommon condition that is only sporadically reported in the literature. Calcific tendinitis at the shoulder joint is far more common, particularly of supraspinatus [1]. Furthermore, enthesopathies are highly characteristic of peripheral spondyloarthritis for which this patient did not exhibit [3]. Thus, this case report stands to present this unique and rather unusual patient presentation of enthesophyte of the gluteus medius tendon.

1. Jo H, Kim G, Baek S, Park H. Calcific Tendinopathy of the Gluteus Medius Mimicking Lumbar Radicular Pain Successfully Treated With Barbotage: A Case Report. *Ann Rehabil Med*. 2016;40(2):368-372.
2. Paik NC. Acute calcific tendinitis of the gluteus medius: an uncommon source for back, buttock, and thigh pain. *Semin Arthritis Rheum*. 2014;43:824–829.
3. Sudół-Szopińska I, Kwiatkowska B, Prochorec-Sobieszek M, Maśliński W. Enthesopathies and enthesitis. Part 1. Etiopathogenesis. *J Ultrason*. 2015;15:72–84.

Nail Patella Syndrome – Clinical Clues for Making the Diagnosis

Authors: Cervantes J, Price A, Lindsey S, Aickara D, Hu S

Institution: University of Miami Leonard M. Miller School of Medicine

Presenter(s): Jessica Cervantes (J.Cervantes1@umiami.edu)

Presentation Time: Friday, 8:24 - 8:33pm; RM 237 Room

ABSTRACT

A 69-year-old male presented to dermatology clinic for a routine skin cancer screening examination. The patient's history was significant for dystrophic fingernails and toenails since birth. In his twenties, he developed progressively worsening left knee instability and chronic back pain due to scoliosis, lumbar lordosis, and herniated spinal discs. His past medical history was significant for osteoporosis, hypertension, and glaucoma. Family history was notable for similar findings in his sister, mother, maternal aunt and uncle, and grandmother, all with varying severity of disease. Physical examination was remarkable for thumbnail hypoplasia, most prominent on the thumb with improvement in each nail with progression towards the fifth digit. Hypoplastic crumbly toenails, fingernail hypoplasia, triangular fingernail lunulae, longitudinal ridging and nail splitting were present. Skin creases over the distal interphalangeal joints of his fingers and toes were conspicuously absent. Limited range of motion was noted in multiple joints, with profound limitation of elbow extension. Review of prior imaging reports revealed bilateral iliac crest horns as well as left patellar absence and right patellar hypoplasia. Urinalysis was remarkable for proteinuria and microscopic hematuria.

Nail-patella syndrome (NPS), also known as hereditary osteo-onychodysplasia syndrome, is a rare autosomal dominant disorder due to a heterozygous loss-of-function mutation in the LMX1B gene on chromosome 9q34. NPS is characterized by variable nail, skeletal, renal, ocular, and neurologic abnormalities. The classic triad of fingernail dysplasia, patellar absence/hypoplasia, and presence of iliac crest horns is pathognomonic for NPS.

This case highlights the importance of recognizing this rare condition to provide a multidisciplinary approach to care that addresses all aspects of LMX1B-associated disease in affected individuals. Further, this case is significant in that it describes a patient who is older than most other individuals presenting the condition in literature to date, thereby revealing novel information about NPS in its more advanced stages.

Tingling and Numbness: A Case of Transverse Myelitis

Authors: Chauhan D, Mubarak H, Pere G, Virtanen P, Rohr-Kirchgraber T, Amin T

Institution: IU School of Medicine

Presenter(s): Divya Chauhan (dchauhan@iupui.edu); Huiam Mubarak (hmubarak@iupui.edu); Gisella Pere (gmpere@iupui.edu); Piiamaria Virtanen (piiavirt@iu.edu)

Presentation Time: Saturday, 8:45 - 8:54am; RM 232 Room

ABSTRACT

An inflammation of the spinal cord across its width, transverse myelitis (TM) causes an interruption of communication between the nerves in the spinal cord and the rest of the body. Symptoms may last hours to weeks and begin as a sudden onset of spinal pain, muscle weakness, or abnormal sensations in the extremities which may rapidly progress to severe symptoms, including paralysis, urinary retention, and loss of bowel control. With up to 1,400 new cases of TM per year, it typically strikes young people aged 10-19 and 30-39.

A 23-year-old female with a history of anxiety and two weeks of oral herpetic lesions presents with a gradual onset of bilateral upper extremity paresthesia and increased difficulty writing. On physical exam, the patient presented with a positive Lhermitte's sign and sensory impairment in the right upper extremity. Her MRI showed an enhancing lesion at C-5 concerning for a demyelinating disease. A second MRI showed a single focus of non-enhancing T2/FLAIR signal abnormality within the paramedian right medulla. CSF showed oligoclonal bands with no sign of viral infection. Her serum protein electrophoresis demonstrated hypergammaglobulinemia. Blood tests indicated a positive serum antinuclear antibody (ANA), and a positive Sjogren syndrome A antibody (SSA), but a negative aquaporin 4 antibody. She was treated with steroids and returned after one month improved.

This case demonstrates the importance and reliability of the neurologic exam in detecting symptomatic lesions. By understanding the epidemiology of transverse myelitis, the patient was treated quickly and efficiently, thereby decreasing the potential damaging effects of the inflammation. Although some patients recover from transverse myelitis without complication, others suffer permanent impairments that affect their ability to perform ordinary tasks of daily living. Most patients will have only one episode of transverse myelitis; in some though the condition may recur.

Advanced Stage Colorectal Cancer: A Case of Delayed Diagnosis in a 61 yo Female**Authors:** Chauhan R, Bush A, Shu B, Welch J**Institution:** Indiana University School of Medicine**Presenter(s):** Ruvi Chauhan (ruvichau@iupui.edu); Ashleigh Bush (ashnbush@indiana.edu); Bella Shu (xshu@uemail.iu.edu)**Presentation Time:** Friday, 7:48 - 7:57pm; Diplomat B Room

ABSTRACT

Case: A 61-year-old white female presented to the emergency department (ED) with several days of generalized, unremitting, crampy abdominal pain and nausea. She insisted her pain was due to consuming Indian food and tea during the prior week. She denied fevers, constipation, diarrhea, melena, weight loss, and had never had a colonoscopy. Pertinent physical examination findings revealed hypoactive bowel sounds and diffuse abdominal tenderness with no masses. Laboratory evaluation was unremarkable. Initial treatment with pain and nausea medications did not improve her symptoms or exam. She was initially reluctant to undergo imaging; however, after discussion, she agreed to an abdominal/pelvis CT, which revealed a partially obstructing mass in the transverse colon, likely malignancy. Reluctant to accept her symptoms were not due to Indian food, the patient required extensive counseling and reassurance regarding this finding. Upon admission, her CEA was elevated, and colonoscopy confirmed the presence of a colonic mass. She underwent a hemicolectomy with primary anastomosis. The tumor was a moderately differentiated adenocarcinoma of the colon (T3N1M0 or Stage IIIB). She elected to receive adjuvant chemotherapy.

Conclusions: Delayed diagnosis of colon cancer in this case was potentially complicated by the patient's beliefs about her symptoms' cause and a lack of preventative colon cancer screening. Making the diagnosis was in part due to astute clinical re-evaluation of the patient after initial treatment, prompting further investigation. Communication was crucial to reassure the patient that further imaging was necessary and discuss the ultimate findings and plan.

Clinical Significance: Cancer is the second leading cause of death in women in the United States. Colorectal cancer can present late in its course due to delayed presentation, inadequate screening, vague abdominal symptoms, and location of the cancer. Proactive clinical judgment, preventative screening, and patient communication are measures needed for timely diagnoses and quality of care.

Antibiotic-Warfarin Interaction Leading to Spontaneous Intraabdominal Hemorrhage

Authors: Chodaba Y, Neth M, Walter L

Institution: University of Alabama School of Medicine

Presenter(s): Yvonne Chodaba (chodabay@uab.edu)

Presentation Time: Friday, 7:48 - 7:57pm; RM 237 Room

ABSTRACT

Case: A 64-year-old female with a past medical history of atrial fibrillation and mechanical heart valve on chronic warfarin therapy, recently treated with antibiotics by her primary care provider for a urinary tract infection, presented to the ED with severe, non-traumatic abdominal pain. Presentation was notable for shock and elevated INR. CT scan revealed multiple large hematomas in the abdomen and pelvis. A ciprofloxacin-warfarin interaction was felt to be the cause of her elevated INR, spontaneous hemorrhage, and clinical presentation.

Conclusions: Warfarin is a widely used anticoagulant with a low therapeutic index that requires close monitoring to ensure a therapeutic international normalized ratio (INR). Recent literature estimates approximately 120 interactions between medications and food with warfarin, with antibiotics being some of the more common offenders. Other drug classes known to interact with warfarin include cardiovascular drugs, analgesics, anti-inflammatories, immunologics, CNS drugs, and GI drugs. These numbers are expected to rise each year with the advent of new medications.

Clinical Significance: Healthcare providers should be aware of possible drug-warfarin interactions prior to prescribing new medications, especially antibiotics. If high-risk medications must be prescribed, patients should have their INR checked within a few days of co-prescription and after completion of the medication to reduce the risk of a serious bleeding event. Furthermore, patients should be informed of the possible signs and symptoms of adverse effects of drug-warfarin interactions, and clinicians should consider potential interactions as contributing factors to patient presentations.

Who Framed Appendicitis?: An Unusual Case of Primary Peritonitis

Authors: Choi Y, Linville J, Voss F

Institution: Indiana University School of Medicine

Presenter(s): Yena Choi (yenachoi@iupui.edu)

Presentation Time: Saturday, 8:18 - 8:27am; RM 232 Room

ABSTRACT

Introduction: Peritonitis is an inflammation of the peritoneum. Two types exist, primary and secondary. Primary peritonitis occurs when an infection spreads from the blood and lymph to the peritoneum and accounts for less than 1% of all cases.

Case: A 27 year-old Caucasian female presented to the ER with progressively worsening, acute-onset, lower abdominal pain. Pertinent history revealed an incompletely treated URI with a non-productive cough for the past week. Lab work showed an elevated WBC (26.2). A CT displayed moderate free fluid in the pelvis and enlarged ovaries. A pelvic ultrasound ruled out ovarian torsion, but discovered a hemorrhagic cyst on the right ovary. Patient was admitted for sepsis, with an unknown source, and CAP. Gynecology consult suspected a ruptured hemorrhagic cyst and RML pneumonia. Laparoscopic surgery discovered purulent fluid throughout the pelvis with normal tubes and ovaries and no sign of TOA. Her appendix was tightly adhered to the cecum and was removed. Pain improved post-surgery, and appendicitis was suspected, but the pathology report did not support this diagnosis. Two days later, patient returned to the hospital with labial edema. A CT showed pelvic fluid collections. A sterile hematoma was suspected after interventional radiology extracted the pelvic fluid. Infectious Disease was consulted and the patient was determined to have primary peritonitis from a prior strep infection of the upper respiratory tract.

Discussion: Primary peritonitis in healthy individuals with no risk factors is very uncommon. It is normally seen in patients with liver conditions. Because of its rarity, meticulous history taking played a critical role in this diagnosis. In this case, the patient's past history of pharyngitis symptoms, along with her failure to properly treat that illness, was key. Teamwork between various specialties was also crucial, as all other medical possibilities were eliminated through gynecological and surgical findings.

Too Many Cooks or Just Enough? Scleroderma Crisis Management**Authors:** Combs L, Capshew B, Rohr-Kirchgraber T, Chumo R**Institution:** Indiana University School of Medicine**Presenter(s):** Larissa Combs (lcombs@iupui.edu); Bryna Capshew (bjcapshe@iupui.edu)**Presentation Time:** Friday, 7:57 - 8:06pm; RM 232 Room

ABSTRACT

A 38-year-old female with diffuse scleroderma, GERD, sinus tachycardia and Raynaud's presented to the emergency department with a 4-day history of chest pain and shortness of breath. Patient denied radiation, changes with exertion, nausea and vomiting; however leaning forward relieved the chest pain. Patient has been diagnosed with scleroderma and treated with cyclophosphamide 25 mg PO TID and prednisone 20 mg PO daily for six years. On physical examination, patient was tachycardic, had reduced range of motion of hands and wrists bilaterally and prominent skin changes secondary to scleroderma. Echocardiogram showed pericardial effusion, with bilateral small pleural effusions. She developed new onset persistent and worsening hypertension with a sudden rise in her creatinine, concerning for scleroderma renal crisis.

This patient with known diagnosis of diffuse scleroderma was admitted to the hospital for acute pericarditis with pericardial effusion. Her eleven-day hospital course was complicated by scleroderma renal crisis and hemorrhagic cystitis due to extensive cyclophosphamide use and required consultations with six subspecialties: cardiology, nephrology, pulmonology, rheumatology, infectious disease, and urology, while the hospitalist team managed her care.

This case illustrates the importance of coordination of care for a patient with systemic disease that has widespread effects on the body. Diffuse scleroderma has acute and chronic effects, so while it was essential to consult subspecialists during her hospital stay to address acute issues, the lasting benefit is the continuation of their recommendations as an outpatient. A precipitating factor in our patient's hospitalization is her recent move from a different state and a delay in establishing care with new healthcare providers. All patients benefit when continuity and coordination of care are optimized, but these aspects are of particular importance to patients such as ours who have a diagnosis of a chronic, diffuse condition.

LGI1 and CASPR2 Autoantibodies Associated with Neurologic Paraneoplastic Syndromes in Three Patients with Stage IVA Thymoma

Authors: Conces ML, Nelson RP, Snook RJ, Loehrer PJ

Institution: Indiana University School of Medicine

Presenter(s): Madison Conces (mlconces@iupui.edu)

Presentation Time: Friday, 12:27 - 12:36pm; RM 232 Room

ABSTRACT

Myasthenia gravis is commonly associated in patients with thymoma. Herein, we describe three patients with advanced thymoma with acquired neuromyotonia (or Isaac's Syndrome (IS)), a rare neurologic paraneoplastic syndrome. The first, a 57 year old gentleman, presented with new-onset IS and myasthenia gravis more than 10 years after his initial diagnosis of thymoma. The second is a 61 year old male who presented two years after his original diagnosis of thymoma with IS, myasthenia gravis and autoimmune myocarditis. Finally, a 40 year old woman presented with IS, myasthenia gravis and limbic encephalitis shortly before the diagnosis of thymoma; she subsequently developed fatal autoimmune hepatitis. In each patient, serum autoantibodies against VGKC-complex (LGI-1 and/or CASPR2) were identified. All three received treatment for neurologic paraneoplastic syndromes with immunotherapy.

While it is well known that patients with thymoma often have associated paraneoplastic syndromes, Isaac's Syndrome is an extremely rare paraneoplastic syndrome which poses unique therapeutic and diagnostic challenges. The voltage-gated potassium channel (VGKC) is a multiprotein complex that functions in the repolarization of cells to their resting state. The development of antibodies against the proteins LGI-1 and CASPR2, components of the voltage-gated potassium channel (VGKC)-complex, has previously been demonstrated to be involved in the development of neurologic paraneoplastic syndromes including limbic encephalitis (or Morvan's Syndrome) and Isaac's Syndrome.

The thymus is a central lymphatic organ that is responsible for many immunological functions. Thymomas can cause loss of self-tolerance and the development of autoimmunity. These three patients offer a diverse perspective on the diversity of neurologic and other autoimmune diseases associated with thymomas with LGI-1 and CASPR2 autoantibodies.

Heart Disease and Subtle Electrocardiography Findings: A Case of Wellens' Syndrome

Authors: Dobben E, Lattimore S, Jackson C, Welch J

Institution: Indiana University School of Medicine

Presenter(s): Sherene Lattimore (sglattim@iupui.edu); Elizabeth Dobben (edobben@iupui.edu)

Presentation Time: Saturday, 8:27 - 8:36am; RM 232 Room

ABSTRACT

Case Presentation: A 66-year-old female presented to the emergency department with a 2-hour history of substernal chest pain, nausea, and diaphoresis. Initial treatment included aspirin and nitroglycerin, with minimal improvement. Her vital signs were normal except for a blood pressure of 166/70. Serial ECGs demonstrated normal sinus rhythm with progressively deepening biphasic T-waves in her anterior leads (V2-V3). Her initial troponin, basic labs, and chest x-ray was all normal. Cardiology was emergently consulted and took her to the cardiac catheterization lab which revealed 95% stenosis of her proximal LAD artery. A drug-eluting stent was successfully placed in her LAD. Her recovery was uneventful and she was discharged with preserved cardiac function.

Conclusions: Recognition of Wellens' syndrome is crucial, as 75% of patients with Wellens' T-waves signs advance to an anterior wall myocardial infarction. Criteria to diagnosis Wellens' T-waves on ECG include: a biphasic T-wave or deep, symmetric T-wave in leads V2 and V3, with little or no ST-segment elevation, no pathological Q waves or loss of precordial R waves. These changes and a history of anginal chest pain are indicative of Wellens' syndrome, also known as LAD T-Wave Inversions, and can be considered a pre-infarction period. Patients often have normal or slightly elevated cardiac enzymes. Once recognized, treatment requires prompt percutaneous intervention. Early intervention yields a good prognosis for these patients, with subsequent resolution of T-wave changes.

Clinical Significance: Heart disease remains the leading cause of death of women in the United States. Therefore, early recognition of the signs and symptoms, along with interpretation of subtle Electrocardiography (ECG) findings is crucial in making a timely diagnosis. One condition known as Wellens' Syndrome, occurs in the presence of severe left anterior descending (LAD) artery stenosis and requires astute attention to the early ECG changes found in the pre-infarct period.

Novel Associations with Aicardi Syndrome

Authors: Elsahy D, Alshawa L, Peters A, White D, Villano E, Rohr-Kirchgraber T

Institution: Indiana University School of Medicine

Presenter(s): Deena Elsahy (daelsahy@iupui.edu); Loor Alshawa (lalshawa@iupui.edu); Ariesa Peters (arepeter@iu.edu); Darcy White (darcwhit@indiana.edu)

Presentation Time: Friday, 7:57 - 8:06pm; RM 237 Room

ABSTRACT

Aicardi Syndrome is a rare X-linked sporadic genetic disorder, occurring almost exclusively in females, with an estimated prevalence of 1 per 105,000-167,000 births. It is characterized by a triad of complete or partial absence of the corpus callosum, chorioretinal lacunae, and infantile spasms. Other features include microcephaly, hypotonia, vision loss, developmental delay, scoliosis and a higher incidence of various tumors.

We report a case of Aicardi syndrome complicated by osseous metaplasia of the cervix. The patient presented at the age of 12 with irregular menses, abdominal pain, cervical calcifications and vaginal bleeding. A biopsy of the cervix demonstrated osseous metaplasia and the patient subsequently underwent a total abdominal hysterectomy. Her past medical history includes neonatal intractable seizures, up to 500 a day, hydrocephalus and agenesis of the corpus callosum consistent with Aicardi syndrome. The patient also has a history of a choroid plexus papilloma, chorioretinal lacunae, vascular anomalies, gastrointestinal complications, and autism spectrum disorder. She also exhibited behavioral disorders including aggression and self-injurious behaviors.

Gynecologic complications of Aicardi syndrome have not been well described. Unlike osseous metaplasia of the endometrium, osseous metaplasia of the cervix is exceedingly rare. To our knowledge, this is the first report of osseous metaplasia along with the other complications seen in this patient associated with Aicardi syndrome. Further investigation is necessary to define the underlying etiology and pathophysiology of these complications. It is important for the primary physician to screen for the various manifestations of Aicardi syndrome through routine gynecologic, ophthalmologic, dermatologic, neurologic and gastrointestinal examinations to monitor for the development of neoplasms, vascular lesions and malformations.

Hard to Swallow

Authors: Enders S, Liao J, McCurdy C

Institution: Indiana University School of Medicine

Presenter(s): Savannah Enders (enderss@iu.edu); Jane Liao (jaliliao@iu.edu); Chelsea McCurdy (cmmccurd@iu.edu)

Presentation Time: Friday, 8:06 - 8:15pm; RM 237 Room

ABSTRACT

33yo F w/ exercise-induced asthma, presents with a constant, achy epigastric pain radiating into the chest, dysphagia, and globus sensation x3 months. She also c/o nausea, but denies vomiting or relationship to oral intake. Omeprazole 20mg daily initially improved the symptoms, but the globus sensation returned for the last 2 months, causing difficulty swallowing, "even my own spit" and washing meals down with water. Pt's physical exam, along with an esophogram, RUQ U/S, and HIDA scan were all un-revealing. Intensive BID Omeprazole was initiated with a presumed diagnosis of GERD, but there is concern for eosinophilic esophagitis.

Eosinophilic esophagitis (EoE) is an infiltration of eosinophils into the esophagus -considered pathogenic after early embryonic development. EoE is due to a Type 2 helper T-cell dysfunction that inappropriately releases cytokines IL-5 and 13. It has a multifactorial etiology due to genetics, environment, and alterations in host defense. Symptoms can resemble reflux esophagitis, however, EoE is not responsive to GERD therapies. An endoscopy after a GERD rule out with 2 months of PPI therapy can show stacked circular rings, attenuation of sub-epithelial vascular pattern, or strictures.

Affecting 4-6 patients per 10,000 worldwide, EoE is increasing in prevalence. Many of those affected are atopic individuals. It is more common in 20-30 yo, Caucasians, and males (M:F, ~3:1, as it may be due to variations on the X chromosome).

Managing GERD involves adequate acid neutralization as well as an appropriate diet. When a patient isn't responding to GERD treatment, good practice is to not question compliance or continued increase of medication dose but to explore other etiologies. Although less common in females, the increasing prevalence of EoE and its strong association with allergic conditions, makes it important to diagnose. Patients require elimination and elemental diet therapy to decrease allergen exposure, acid suppression, steroid therapy, and esophageal dilation.

Masking the Diagnosis: Multiple Co-morbidities

Authors: Flores S, Weaver L, Muldoon J, Hanneman P

Institution: Indiana University School of Medicine

Presenter(s): Lynn Weaver (lyweaver@iupui.edu); Sarah Flores (saraflor@iupui.edu); Jessica Muldoon (jlmuldoon@uemail.iu.edu)

Presentation Time: Friday, 8:15 - 8:24pm; RM 237 Room

ABSTRACT

Chronic illnesses such as diabetes, heart failure, and kidney disease are demonstrated in approximately 75% of individuals 65 years or older. As such, many individuals who seek treatment of acute illness will have comorbidities that can complicate the clinical assessment of a patient.

A 65-year-old female presented to our institution with complaint of nausea, vomiting, and diffuse abdominal pain that developed approximately six hours after undergoing an arteriovenous (AV) fistulogram. Her past medical history included ESRD, recurrent deep vein thrombosis, NASH liver cirrhosis, and obesity. On presentation, she was afebrile and her white blood cell count and differential was within normal limits. CT imaging of the abdomen/pelvis was performed and showed mild mesenteric edema and free fluid, as well as multiple fluid-filled loops of small bowel and extensive vascular calcifications.

On the third day of hospitalization, the patient became hemodynamically unstable necessitating transfer to the intensive care unit. An abdominal ultrasound performed in the ICU demonstrated pockets of fluid in the peritoneum. A diagnostic paracentesis was performed and fluid revealed 12,000 RBCs, 925 WBCs and 824 PMNs, which met criteria for spontaneous bacterial peritonitis (SBP). The patient was started on IV vancomycin and piperacillin/tazobactam, although initial peritoneal fluid cultures were negative. A repeat diagnostic paracentesis performed 4 days later also demonstrated no growth. Her antihypertensive medications were adjusted and the patient was started on midodrine with stable improvement in blood pressure.

Ultimately, it was suspected that the patient developed mild transient bowel ischemia following her AV fistulogram leading to a reactive peritonitis in the setting of her extensive intraabdominal vasculopathy. However, it is unclear to what extent her underlying liver cirrhosis and ESRD contributed to interval development of ascites in a previously well-compensated patient. This case highlights the diagnostic challenges faced in patients with multiple medical comorbidities.

Compression Stockings as an Effective Treatment for Idiopathic Erythema Nodosum: A Case Report

Authors: Golisch KB, Gottesman SP, Segal RJ

Institution: University of Arizona-Tucson

Presenter(s): Kimberly Golisch (kgolisch@email.arizona.edu)

Presentation Time: Friday, 12:36 - 12:45pm; Diplomat A Room

ABSTRACT

Case

A 24 year-old female presented with four months of multiple erythematous subcutaneous nodules with tenderness to palpation on the bilateral shins and left medial calf. A deep surgical incisional biopsy of the right shin described: septal granulomatous inflammation with giant cells and focal lobular spillover in the surrounding adipose tissue with marked neutrophilic infiltrate. CXR, Cocci titers, PAS, GMS, and AFB stains were negative, favoring erythema nodosum (EN) over infectious entities.

The patient sought a treatment plan that would have minimal adverse side effects and permit her to continue daily activities as normal. We prescribed 20 to 30 mmHg compression stockings with the intent of supportive care to decrease swelling. However, one-month later the EN resolved with only visible non-tender postinflammatory hyperpigmentation changes.

Conclusions

EN is suspected to be a delayed type IV hypersensitivity reaction associated with various infectious/inflammatory diseases, drug reactions, pregnancy or malignancy. Normally, the clinical course involves identifying the underlying causative agent and prescribing the appropriate treatment with the EN clearing secondarily.

Treatment for cases of idiopathic EN has not been ideal, often involving significant side effects or requiring a change in lifestyle. While bed rest and NSAIDs are normally recommended as supportive care and SSKI or steroids for treatment, other options should be explored. Our case demonstrates the positive benefits and potential effectiveness of compression stockings as treatment for EN. After several months of little to no improvement, dramatic clearing of the lesions occurred in one month of wearing the stockings.

Clinical Significance

This case proposes an alternative treatment modality for a disease where treatment is suboptimal. Since there is not much literature to support any consistent and successful treatment options for idiopathic EN, compression stockings should be considered as they allow patients to maintain a good quality of life and have minimal side effects.

Cervical Cancer: The Importance of Screening and Follow-up**Authors:** Grayer D, Hiler S**Institution:** IUSM**Presenter(s):** Dannielle Grayer (dgrayer@iupui.edu)**Presentation Time:** Friday, 8:06 - 8:15pm; RM 232 Room

ABSTRACT

Cancer of the uterine cervix was once the leading cause of cancer death in US women. However, screening has resulted in a significant decrease in the number of deaths from cervical cancer within the last 40 years. In developed countries, cervical cancer is the eleventh most common type of cancer in women, and the ninth most common cause of cancer deaths. It is the third most common gynecologic cancer and cause of death among gynecologic cancers in the US. According to the CDC, Black women had the second highest rates of cervical cancer among ethnic groups, and the highest mortality rates.

56yo black woman presented to the ED with chief complaint of bilateral sharp, pulling lower abdominal pain, worsening dyspnea and exercise tolerance, and intermittent vaginal bleeding. The pain had been occurring for eight months, becoming significantly worse over the previous two months. On initial work-up, she was found to have acute kidney injury, with a BUN of 120 and Cr of 16.7. Abdominal CT showed a uterine/cervical mass causing obstructive uropathy of bilateral kidneys. Gynecological exam and biopsy demonstrated invasive squamous cell carcinoma. Chart review revealed multiple referrals for pap smear from the previous three years which were not completed, and pap smear from five months prior demonstrating HSIL.

The five year survival rate of early or local stage of cervical cancer is 92%. This rate decreases to 17% for late or distant stage. In the US, screening has resulted in a decline in the annual incidence and mortality rates of cervical cancer by more than 75%. Even with this success, Black women experience a disproportionate burden of cervical cancer. This is evidenced by disparity in the incidence, stage at diagnosis, and survival rates of cervical cancer among Black women as compared to other ethnic groups.

Family Ties: Screening for Inflammatory Breast Cancer

Authors: Gurram H, Schoenfeld E, Kuschel S, Patterson K, Rohr-Kirchgraber T

Institution: Indiana University School of Medicine

Presenter(s): Harini Gurram (hgurram@iupui.edu); Ellen Schoenfeld (eschoenfeld176@marian.edu);
Stephanie Kuschel (slkuschel@gmail.com)

Presentation Time: Friday, 12:36 – 12:45pm; Embassy Ballroom

ABSTRACT

Case: A 39-year old female with a strong family history of cancer presented to her primary care physician with a two-week history of “funny” feeling and swelling of right breast. She reported pain that awakened her when rolling in bed but denied nipple discharge, trauma, rash, or breastfeeding. The patient’s mother and sister developed ovarian cancer in their 30s, her maternal aunt developed inflammatory breast cancer (IBC) in her 40s, and her maternal grandmother developed colon cancer in her 60s. The patient is unaware of any familial genetic mutations. Upon initial exam, right breast was tender and mildly erythematous without discharge, masses, or asymmetry. Same-day mammogram and ultrasound (US) revealed right breast skin and trabecular thickening most consistent with mastitis (BI-RADS2). Symptoms worsened despite a 10-day course of Keflex, and she was referred to a breast surgeon. Physical examination was remarkable for right breast enlargement, skin erythema, and pitting edema. Repeat mammogram and US revealed a right breast mass with architectural distortion and associated skin and trabecular thickening, highly suspicious for malignancy (BI-RADS4C). US-guided core biopsy revealed grade 3 invasive breast cancer diagnosed as IBC. The patient currently follows with medical oncology and has undergone genetic testing; results are pending.

Conclusions: This case highlights the rapid onset and aggressiveness of IBC and the necessity of pursuing screening modalities like genetic testing in those patients with high-risk characteristics such as strong family history.

Clinical Significance: IBC, a rapidly progressive form of breast cancer, frequently mistaken for mastitis, has an overall survival of 3.8 years due to its strong metastatic potential. A limited number of studies exist that explore the hereditary nature of IBC, but genetic testing and screening modalities of high-risk individuals may enhance survival rates by early detection and prophylactic therapy.

Vitamin D Deficiency and its Potential Role in Cervical Cancer Carcinogenesis: A Case Study

Authors: Hannaford K, Patel P, Sandelski M, Rohr-Kirchgraber T

Institution: Indiana University School of Medicine

Presenter(s): Katheryn Hannaford (kanhanna@iupui.edu); Morgan Sandelski; Pooja Patel

Presentation Time: Saturday, 9:03 - 9:12am; RM 232 Room

ABSTRACT

Background:

Cervical cancer is one of the leading causes of death in women worldwide. It is a multifactorial disease with known risk factors including HPV infection, smoking, and multiple sexual partners. Less known is that researchers have found an inverse association between vitamin D (D3) intake and cervical cancer risk (1). Adequate D3 serum levels have been shown to be protective against various cancers through acting on transcription factors that regulate cell growth, differentiation, and apoptosis.

Case:

A 64 year old female with a history of a labial condyloma, D3 deficiency for 2 years and smoking presented with post-menopausal bleeding for 3 months. Her last pap was 4 years prior and was normal. On presentation, she was found to have locally advanced cervical cancer. She struggled with being lost to follow up and poor medication compliance secondary to financial constraints. In particular, she had difficulty affording her D3 supplements.

Discussion:

Substantial evidence is emerging in support of D3's role in cancer. Human cervical cancer oncogene (HCCR-1) has been identified as a gene that is commonly overexpressed in multiple cancers, including cervical cancer. It serves an oncogenic role, converting benign cells into cancerous cells. D3 has been shown to downregulate the expression of HCCR-1 in HeLa S3 cells at the level of transcription in a dose dependent manner (2). Furthermore, a meta-analysis found certain D3 receptor polymorphisms to be related to an increased risk in gynecologic cancers, making them a potentially useful biomarker (3). Additionally, long term smoking has been shown to depress the D3-parathyroid hormone system, further exacerbating D3 deficiency, and potentially causing an increased risk of cancer (4). Together, these studies alongside our patient's risk factors suggest that suboptimal D3 supplementation may play a role in our patient's cervical cancer diagnosis.

1. Hosono, S., et al. Association between dietary calcium and vitamin D in take and cervical carcinogenesis among Japanese women. *Eur J Clin Nutr.* 2010 Apr; 64 (4): 400-9.
2. Wang, G., et al. Calcitriol Inhibits Cervical Cancer Cell Proliferation Through Downregulation of HCCR1 Expression. *Oncology Research Featuring Preclinical and Clinical Cancer Therapeutics*, 22(5-6), 301-309.
3. Mun, M. J., et al. Vitamin D receptor gene polymorphisms and the risk for female reproductive cancers: A meta-analysis. *Maturitas*, 81(2), 256-265.
4. Brot, C., et al. The influence of smoking on vitamin D status and calcium metabolism. *Eur J Clin Nutr.* 1999 Dec; 53 (12): 920-6.

Hematocolpos: The Bloody Culprit

Authors: Harrison SA

Institution: UABSOM

Presenter(s): Sally Harrison (sah0040@uab.edu)

Presentation Time: Friday, 7:30 - 7:39pm; RM 232 Room

ABSTRACT

Case: A 14-year-old female presented to the emergency department with abdominopelvic pain, urinary retention, and secondary sexual characteristics without a history of menses. The abdominopelvic pain had cycled over the span of three months prior to the visit, but was bad enough to make her vomit that morning. Vital signs were normal, and physical exam revealed a palpable pubic mass. Neurological exam was normal. Lab tests were normal, including β -HCG. Ultrasound revealed a fluid-filled mass extending inferiorly from the uterus, and a genitourinary exam revealed an imperforate hymen. A hymenotomy was performed, and 400mL of dark brown blood was evacuated.

Conclusions: Hematocolpos is the accumulation of menstrual blood in the vagina, usually secondary to an imperforate hymen. Imperforate hymen is a congenital condition that results in vaginal obstruction with an incidence of 1 in 1,000 women. 43% of diagnoses are made incidentally upon physical exam. Hymenotomy is indicated for treatment.

Clinical Significance: Hematocolpos secondary to an imperforate hymen is a simple diagnosis, but is often mistaken for appendicitis or missed because of hesitance to perform a genitourinary exam. A strong indicator of hematocolpos is primary amenorrhea, the lack of menses when secondary sexual characteristics are present. However, the presentation of hematocolpos varies and can include urinary retention (37-60% of cases), cyclical abdominopelvic pain, lower back pain, and constipation. If left untreated, in rare instances hematocolpos can in rare instances result in retrograde menstruation, hematosalpinx, and bilateral hydronephrosis.

Case of Vertiginous Migraine

Authors: Hinova V, Oliger A, Rohr-Kirchgraber T

Institution: Indiana University School of Medicine

Presenter(s): Vassilina Hinova (vhinova@indiana.edu); Audrey Oliger (auoliger@indiana.edu)

Presentation Time: Saturday, 8:09 - 8:18am; RM 241 Room

ABSTRACT

Case: The patient is a 40-year-old female with a 30+ year history of vertigo (2-3 episodes yearly). For the month preceding presentation, her vertigo worsened, and she also experienced migraines 2-3 times per week associated with frontal and periorbital pain, occasional nausea, and photophobia without phonophobia. She has treated the migraines with ibuprofen. After a neurological consult, a diagnosis of migraine-associated vertigo was reached. Treatment with Pamelor (nortriptyline) reduced the frequency and intensity of symptoms. Other findings of interest include an MRI that revealed 2.5mm of cerebellar tonsil ectopia consistent with an Arnold-Chiari Type 1 malformation and nonspecific frontal lobe foci.

Conclusion: Vertiginous migraines are a common but poorly understood disorder. Because symptoms are intermittent and can be challenging to treat, patients may not receive adequate relief for long periods of time. Consistent follow-up and appropriate referrals for refractory cases are vital, including imaging studies to rule out identifiable underlying pathology. Approximately 40% of migraine patients have accompanying vestibular symptoms. Despite the association, medication to treat either headache or dizziness will not necessarily resolve both symptoms. For this patient, cerebellar tonsil ectopia and nonspecific frontal lobe foci could be associated with her symptoms and should be considered during long-term management.

Clinical Significance: In this case, while adequate relief from migraines and vertigo was not achieved for 30+ years, the patient's symptoms were rapidly responsive to therapy with nortriptyline. Long-term care for this patient should focus on continued symptom monitoring and preservation of functional status. While Arnold-Chiari malformations classically present with occipital headaches, they can also be associated with vertigo. For this reason, it may be worthwhile to consider treating the malformation if migraines and vertigo persist.

Post-traumatic development of an aneurysmal bone cyst from a pre-existing non-ossifying fibroma**Authors:** Ibad HM, Haruno LS, Browne T, Safford S, Phillips WA**Institution:** Baylor College of Medicine**Presenter(s):** Hiba Ibad (hiba.ibad@bcm.edu)**Presentation Time:** Saturday, 8:45 - 8:54am; RM 241 Room

ABSTRACT

Case: A previously healthy seven-year-old female presented to the emergency department with a closed midshaft spiral fracture of her left femur. In addition to the femur fracture, radiographs revealed an incidental eccentric, expansile lesion at the proximal left femoral diaphysis remote from the fracture site, suggestive of a non-ossifying fibroma (NOF). An intramedullary nail was placed to stabilize the fracture. Imaging 10 months postoperatively at the time of hardware removal demonstrated a well-healed fracture site with interval expansion of the remote, eccentric lesion. Surgical biopsy confirmed NOF. Advanced imaging 14 months after initial injury showed further growth of the lesion accompanied by cystic abnormalities with multiple fluid levels, suggestive of an ABC. Given the aggressive expansion, the decision was made to perform curettage, bone allografting, and hip plate stabilization of the left proximal femur. Intraoperative biopsy confirmed diagnosis of an ABC and cytogenetic testing revealed a translocation between chromosomes 1 and 17 at band 1q42 and 17p13, an anomaly previously linked to ABCs. Routine follow-up over the next four years showed a well-healed lesion, with the patient successfully returning to full athletic participation.

Conclusions: Aneurysmal bone cysts (ABCs) are rare, destructive, and non-neoplastic lesions predominantly affecting the spine and long bones of children. Since the 1940s, multiple pathogenic models have been proposed, including hemodynamic disruption, genetic predisposition, or a post-traumatic bone reaction.

Clinical Significance: This report describes the unique development of an ABC from a pre-existing NOF following traumatic injury. A thorough review of present literature and clinical history suggests that ABC formation in this particular patient is likely multifactorial, attributed to the presence of a preceding lesion (structural abnormality), inciting traumatic event, and genetic predisposition. Further understanding the pathophysiology of cystic bone lesions such as ABCs may aid in timely identification and management.

Late-Onset Pompe Disease Masquerading as Liver Inflammation**Authors:** Jacobs M, Bodkin C, Banschbach K, Steele MJ, Gomez M**Institution:** Indiana University School of Medicine**Presenter(s):** Katelyn Banschbach (kmbansch@iupui.edu); Maritza Gomez; Mary Jeanette Andrews**Presentation Time:** Friday, 8:06 - 8:15pm; Solano Room

ABSTRACT

21y/o female with PMH of depression/anxiety presented in January 2015 with sore throat and diffuse abdominal and muscle pain along with elevated SGOT and SGPT on workup. Extensive hepatology workup was performed and was unrevealing including normal serologies, UGI, LGI and liver biopsy. Her muscle pain and elevated enzymes continued; after 9 months a CPK was found to be elevated. At her Rheumatology consultation she reported a several year history of muscle pain and weakness, new Raynauds, shortness of breath and dysphagia. On exam, she had weakness and severe pain at proximal and paraspinal muscles. Family history was positive for dermatomyositis and muscular dystrophy. She was started on steroids and an EMG revealed a myopathic process, predominantly involving the paraspinal muscles with patchy involvement of the quadriceps. Muscle biopsy showed degenerating muscle fibers with PAS-positive vacuoles, consistent with a glycogen storage disorder. Based on the muscle biopsy she was suspected of having late-onset Pompe disease and referred to neurology. Acid maltase deficiency was confirmed with low alpha glucosidase level and elevated urine hex4 and she was started on Lumizyme infusions.

Late-onset Pompe disease is a rare lysosomal storage disorder caused by an absence or deficiency of acid alpha-glucosidase (GAA) causing accumulation of glycogen in muscle cells. Late-onset Pompe disease should be suspected in patients over the age of one complaining of progressive proximal weakness, elevated CK and/or respiratory difficulty. Weakness of the proximal limbs, girdle, axial, and respiratory muscles can range in severity from mild to an inability to walk and respiratory failure. Other non-specific symptoms include non-hepatic elevation of transaminases and cerebral aneurysm. Variability in symptoms and diagnostic tests can make diagnosis difficult; however, the diagnostic gold standard is enzymatic testing showing low GAA activity. Although not curable, treatment with biweekly infusions of Lumizyme may stabilize symptoms.

Normal Pregnancy turns Molar

Authors: Jones DD, Addo JE

Institution: Indiana University School of Medicine

Presenter(s): Dana Jones (dandjone@indiana.edu); Jennifer Addo (jenaddo@iupui.edu)

Presentation Time: Friday, 8:42 - 8:51pm; RM 237 Room

ABSTRACT

Case: Caucasian female, 32 year old G1P0010 at 10w5d gestation presented to her scheduled appointment. Ultrasound found no fetal heart tones. Two past transvaginal ultrasounds confirmed a singleton, intrauterine pregnancy with cardiac activity and fetal movement. The patient was sent for a confirmatory ultrasound and scheduled for a dilatation and suction curettage. There was approximately 300 cc of blood loss despite uterine massage during the procedure and administration of Pitocin. Preoperative Hgb was 12.6 g/dL and postoperative Hgb 8.5 g/dL. There were no further complications. Tissue was sent to pathology for permanent sections. The abnormal bleeding persuaded the physician to send the tissue for chromosomal microarray analysis as well. Final microscopic diagnosis was consistent with products of conception; however, genetic results showed 69 XXY with suspicion of a partial molar pregnancy. Weekly hCG results showed a slow decline from 203 mIU/mL to 49 mIU/mL at 4 and 7 weeks postoperative, respectively. Plan: Continue to monitor hCG.

Discussion:

Gestational trophoblastic disease describes atypical growth of placenta tissue. Hydatidiform mole is a disease causing abnormal development of the trophoblastic cells that begins at fertilization. Production of trophoblastic tissue takes up the uterine cavity. The placenta villi transform into grape-like structures due to fluid accumulation. A complete mole forms when a haploid sperm combines with an empty ovum to produce tissue that is 46XY karyotype. A partial mole forms when a normal ovum combines with two sperm to produce tissue that is triploid karyotype, 69XXY. The histology shows trophoblastic hyperplasia and mild atypia. A fetus may be nonviable and display anomalies connected to triploidy. Diagnosis includes weekly hCG until levels are undetectable, ultrasound, genetic analysis, and histology. Treatment includes dilation and evacuation with suction.

Clinical significance: Partial molar pregnancy was diagnosed from chromosomal analysis which is not routinely done after a missed abortion.

Acute Disseminated Encephalomyelitis in an Adult following Hand-Foot-Mouth Infection

Authors: Kaleka G, Vercellone J

Institution: Oakland University William Beaumont School of Medicine

Presenter(s): Guneet Kaleka (gkaleka@oakland.edu)

Presentation Time: Saturday, 9:03 - 9:12am; RM 241 Room

ABSTRACT

Case: This is a case of a 36-year-old male patient who developed Acute Disseminated Encephalomyelitis (ADEM), an autoimmune demyelinating condition, following a coxsackievirus infection. The patient initially presented to the Emergency Department with nausea and intractable vomiting occurring for 2 days. He also complained of an inability to urinate, constipation, myalgias and a headache. Blood tests, urinalysis, and prostate specific antigen were normal at this time. In the following hours, the patient developed a fever, noted progressive weakness and required urinary catheterization. He lost consciousness on the following day, which required intervention by the Rapid Response Team. A Computed Tomography (CT) of the head, Magnetic Resonance Imaging (MRI) of the brain and cervical spine and a lumbar puncture were ordered. CT abdomen and pelvis revealed edematous kidneys and mild ascites of the abdomen and pelvis. The patient then became diaphoretic, complained of lower extremity weakness, greater on the right, and bilateral upper extremity numbness. In the following hours, he developed hypoxic failure, diplopia and normocytic anemia with thrombocytopenia. Brain MRI revealed gray and white matter lesions suggesting a demyelinating condition such as ADEM. Subsequent lumbar puncture supported this diagnosis. The patient was transferred to the Medical Intensive Care Unit where he was prescribed corticosteroids, antibiotics and plasmapheresis.

Conclusion: This therapy was successful in improving the patient's mentation and the numbness in his upper extremities; however, his lower extremity paralysis continues. At this time, the patient is working with a physical therapist.

Clinical Significance: Although occurring more commonly in children, this case illustrates a rare occurrence of ADEM in an adult. ADEM, a rare condition with an annual incidence of 0.4 per 100,000 people, leads to a progressively severe paralysis. The clinical course of ADEM, diagnostic process, and the use of novel therapies, such as plasmapheresis, are discussed here.

Ectopic Ureter: An Anatomic Cause of Pediatric Incontinence**Authors:** Kissel SM, Black KA, Roell JE, Weatherly DL**Institution:** Indiana University School of Medicine**Presenter(s):** Suzanne Kissel (smkissel@iupui.edu); Kelsey Black (keablack@iupui.edu); Julia Roell (jeroell@iupui.edu)**Presentation Time:** Friday, 7:48 - 7:57pm; RM 232 Room

ABSTRACT

Case: A thirteen-year-old female presented to pediatric urology with a chief complaint of continuous day and night urinary incontinence since toilet training without urinary tract infection (UTI), fecal incontinence, or abnormal physical developments. At presentation to the clinic a renal bladder ultrasound was obtained that demonstrated a left duplex collecting system with upper pole hydronephrosis and mild scarring. With suspicion of an ectopic ureter, a magnetic resonance urogram (MRU) was obtained confirming the presence of a significantly dilated upper pole ureter with distal termination into the vagina. Nuclear medicine imaging demonstrated that the left upper pole contributed 22% of left renal function, and 10% of total renal function.

Conclusions: An ectopic ureter is a congenital abnormality involving insertion of a ureter into an abnormal location. About half of females with an ectopic ureter present with continuous wetting, many associated with a vaginal insertion. Other patients may experience urinary tract infections and pain. This patient had a unique presentation given her older age and lack of UTI history. It is important to complete a thorough evaluation of these patients as many variables determine the management approach. These variables include the patient's anatomy and function of the upper renal pole. Ultrasound, MRU, and nuclear medicine can be of value both in diagnosis and surgical planning. Management options include observation, upper pole partial nephrectomy, ureteroureterostomy, and ureteral reimplantation. As this patient's upper pole still maintains significant function, renal sparing procedures would be a better option for definitive treatment.

Clinical Significance: The cause of pediatric incontinence can be difficult to diagnose. This case demonstrates the importance of completing a detailed history, developing a thorough differential diagnosis, and completing a full evaluation to avoid a misdiagnosis. With this information, an appropriate treatment plan can be developed.

Jaundiced Juvenile: A Case of Pediatric Idiopathic Acute Liver Failure**Authors:** Knisley M, Ng A, Stoelting A, Abulebda K**Institution:** Indiana University School of Medicine**Presenter(s):** Melissa Knisley (mknisley@iupui.edu); Austen Stoelting (acstoelt@iupui.edu)**Presentation Time:** Saturday, 9:21 - 9:30am; RM 241 Room

ABSTRACT

Case: Pediatric acute liver failure (ALF) is a rare but life-threatening illness that occurs in children without preexisting liver disease. Despite its rarity, the disease is associated with unpredictable devastating complications, potentially resulting in multi-system organ failure and death. Here we report a case of idiopathic ALF in a 14 month old unvaccinated boy who initially presented with scleral icterus, diffuse jaundice, and increasing fussiness over six days. Two weeks prior, his parents noted a diarrheal illness with associated rash and temperature of 101.9F. Initial labs were significant for transaminitis, hyperbilirubinemia, elevated coagulation studies, and hyperammonemia. He developed hepatic encephalopathy Grade II-III requiring endotracheal intubation for airway protection, necessitating 11 days of aggressive supportive care in the ICU. His liver biopsy showed >90% hepatocellular necrosis with mild lymphocytic infiltrate without viral inclusions. Due to fulminant hepatic failure and his clinical ang2 status, an emergent orthotopic liver transplant was subsequently performed.

Discussion: Half of pediatric patients with ALF present with encephalopathy, with two thirds being encephalopathic at any point in their hospital stay. Through an incompletely understood mechanism, patients often also experience a nonspecific prodrome, as was the case with our patient. Due to lack of vaccinations or newborn screen, his differential diagnosis was broad; it included ingestion, infectious, immune-mediated, and metabolic etiologies. Thus, his work-up included tests for acetaminophen levels, viral hepatitis, Wilson's disease, and autoimmune conditions, among others. In addition to appropriate medical work-up, other factors warranting consideration include education regarding preventative care and the importance of medical follow-up, as vaccination and more regular care may prevent the development of ALF or facilitate a timely diagnosis. Barriers to care due to parental beliefs may successfully be addressed if good rapport is established. Overall, management of pediatric ALF is complex, requiring a multidisciplinary approach and early consultation of appropriate specialists.

Medullary Thyroid Cancer (MTC) In A Family with MEN2A: A Case Report**Authors:** Losso MN, Zakalik D**Institution:** Oakland University William Beaumont School of Medicine**Presenter(s):** MerryJean Losso (merryjeanlosso@oakland.edu)**Presentation Time:** Saturday, 8:54 - 9:03am; RM 232 Room

ABSTRACT

Case: Two brothers, AA (16) and AB (14) present for genetic evaluation due to a family history of MTC in their mother. She was diagnosed at age 22 and had thyroidectomy. She died at age 46 from metastatic disease. The boys indicated that some maternal relatives tested positive for a deleterious RET mutation, p.C634W (c.1902C>G). Blood was drawn and sent for single site testing, which revealed both brothers to carry the pathogenic p.C634W mutation located on exon 11 of the RET gene. It is a well-known hot spot for pathogenic mutations, which result in a high risk for MEN2A cancers.

A calcitonin assay showed elevated levels: NG was 39 pg/ml and MG was 686 pg/ml. MG's ultrasound revealed a dominant 1.5 cm nodule in the right lobe of the thyroid with biopsy suspicions for medullary carcinoma.

Conclusion: MEN2A represents a rare but severe hereditary syndrome, which predisposes patients to an aggressive and potentially lethal thyroid cancer, MTC. Patients are also at risk for pheochromocytoma and parathyroid disease. MG underwent a total thyroidectomy and central neck dissection. He was placed on thyroid supplementation and calcium. A 1.3 cm MTC was found in the right lobe and the 5 ml focus on the node and 4/9 positive lymph nodes. Serum calcitonin dropped to 6 pg/ml after surgery. MG will continue follow up with ultrasound screening and biochemical screening.

Clinical Significance: This case illustrates the severe clinical manifestation of MTC (particularly codon 634) and the significance of early detection and preventative actions. Clinicians should be aware of MEN2A because the importance of early intervention. Additionally, this case study illustrates the importance of taking a thorough family history and open communication within families. Lastly, this case illustrates a multidisciplinary team-based approach with collaboration between genetics, endocrinology, and surgery.

A Case of Amenorrhea: An Imperforate Hymen Goes Undiagnosed

Authors: McGraw S, Singh C, Linville J, Voss F

Institution: Indiana University School of Medicine

Presenter(s): Sarah McGraw (mcgraws@iupui.edu)

Presentation Time: Saturday, 8:00 - 8:09am; RM 241 Room

ABSTRACT

Occurring in only 0.1-0.5% of the population, imperforate hymen is a rare and often overlooked diagnosis. The condition is usually caused by failure of the hymen to perforate during fetal development. The malformation is usually discovered during routine external genital inspection of the newborn, however physical exam at any age usually allows direct observation of the defect with ultrasound serving as adjunct visualization. In adolescents, the diagnosis is made with a good history, noting any cyclical abdominal pain, amenorrhea despite advanced tanner stages or urinary retention. The early detection of imperforate hymen is important in preventing sequelae of the malformation, such as hematocolpos, endometriosis, cystitis, subfertility, mechanical compression of surrounding structures, hydronephrosis, and kidney failure.

A 14 year old female with no past medical history presents to the emergency department for abrupt onset lower midline abdominal pain with dysuria and urinary frequency of 5 day duration. She reports a similar episode one month ago. The pelvic exam was not performed because the patient had never been sexually active nor had a period. However, CT scan revealed hematocolpos, possible hematosalpinx and urinary retention. OBGYN was consulted and an external genital exam revealed dark material behind a bulging imperforate hymen. A hymenectomy established a communication through the vaginal canal.

Many cases of imperforate hymen missed in childhood are discovered on symptomatic presentation during adolescence, thus delaying detection and increasing diagnostic testing and morbidity. Balancing empathy and understanding with a complete exam is paramount in working with special populations such as self-conscious teenage girls, communities where menstruation is associated with shame, or certain religious groups where the intactness of the hymen serves as a physical testimony to virginity.

“Oh, My Stomach Hurts!” Perforated Duodenal Ulcer**Authors:** McLaughlin BE, Benjamin C, Ford L, Okoye M, Feliciano DV**Institution:** Indiana University School of Medicine**Presenter(s):** Briana McLaughlin (brimclau@iupui.edu); Mirian Okoye (mcokoye@iu.edu); Lauren Ford (laaford@indiana.edu)**Presentation Time:** Saturday, 8:18 - 8:27am; RM 241 Room

72-year old African-American female presented with chronic right upper quadrant pain and nausea that worsened with eating. The pain had been present for years, but had worsened acutely. The patient believed that the pain was due to an “ulcer”, but had not been evaluated by a physician. An abdominal ultrasound was positive for a sonographic Murphy’s sign without thickening of the gallbladder wall. On the morning of a planned laparoscopic cholecystectomy, the patient had more epigastric tenderness and new onset hematemesis. An emergency UGI endoscopy documented mild esophagitis and a large duodenal ulcer. The patient developed increased distension after the endoscopy, and imaging confirmed the presence of free air in the abdomen. She was taken to the OR emergently with a presumed diagnosis of a perforated duodenal ulcer. Operation included gastric antrectomy, partial duodenectomy, antecolic gastrojejunostomy, and insertion of a #24 French Malecot tube into a severely scarred duodenal stump.

Proximal duodenal ulcers (95% of all duodenal ulcers) are essentially always benign, occur in all countries, and can cause life-threatening complications. The typical presentation is epigastric pain between meals or awakening the patient at night, relief with ingestion of food, H2-blockers, or proton pump inhibitors, and a history of chronic NSAID use, unrecognized infection with *Helicobacter pylori*, and/or smoking.

Mortality from perforated duodenal ulcer is nearly 3X higher for patients 65-79 years of age as compared to those under 65. Risk factors for postoperative morbidity and mortality in addition to age include a delay in diagnosis and operation exceeding 24 hours, presence of septic shock, and generalized peritonitis noted at operation. While the need for elective ulcer operations has decreased significantly over the past 5 decades, emergency operations for complications such as perforation or bleeding are still necessary and many are needed in older patients with coexistent morbidities.

Bronchiolitis Obliterans Organizing Pneumonia: Diagnosis in a Patient with Severe Gastroesophageal Reflux Disease

Authors: McLuckey MN, Christy MC, Hussain AS

Institution: Indiana University School of Medicine

Presenter(s): Mary Christy (marychri@indiana.edu)

Presentation Time: Friday, 12:18 - 12:27pm; RM 232 Room

ABSTRACT

Background: Bronchiolitis obliterans organizing pneumonia (BOOP), otherwise known as cryptogenic organizing pneumonia, is a category of idiopathic diffuse interstitial lung disease. Characteristic lesions of BOOP involve excessive proliferation of granulation tissue within small airways and alveolar ducts. Typical presentation includes nonspecific symptoms of cough, dyspnea, fever, malaise, and weight loss, for two months or less. A lung biopsy is necessary for diagnosis and other etiologies of organizing pneumonias must be excluded.

Case: A 59-year-old female presented to her family physician to establish care and report fatigue, a 30-pound weight loss in 2 months, and an ongoing cough. Her condition was complicated by severe GERD refractory to PPIs and vagotomy. Chest CT revealed multiple foci of peripheral subpleural consolidations and atelectasis with lower lung fibrotic changes. Initial testing showed anemia, elevated eosinophils, elevated ESR, elevated CEA and negative Histoplasma serologies. History was negative for smoking, HIV and TB exposures. Past evaluation for connective tissue disease ruled out many autoimmune etiologies. Empiric moxifloxacin was given with no benefit. Further testing with spirometry revealed an isolated diffusion defect with no significant obstruction or restriction. Bronchoscopy and BAL were performed and BOOP was diagnosed. Oral prednisone was administered and total recovery was accomplished in four months.

Discussion: Many diagnoses are possible with an initial presentation of cough, weight loss, and fatigue. Studies have suggested that patients with GERD are more likely to develop interstitial lung disease, and that the severity of the GERD correlates to more serious organizing pneumonia and more frequent relapses. This is perhaps due to microaspirations of gastric fluid. Diffuse interstitial lung diseases, therefore, should be considered in patients with chronic GERD who present with cough and cachexia.

Opioid Addiction Hidden by Anorexia

Authors: Medda R, Waldrop C, Huang C, Rohr-Kirchgraber T

Institution: Indiana University School of Medicine

Presenter(s): Rituparna Medda (rmedda805@marian.edu); Caitlyn Waldrop (clwaldro@indiana.edu); Christine Huang (chrhuang@indiana.edu); Theresa Rohr-Kirchgraber, MD

Presentation Time: Saturday, 8:27 - 8:36am; RM 237 Room

Opioid use disorder of prescribed opioids and heroin has become a crisis in the United States, evidenced by the Surgeon General's plea to physicians this year. Healthcare providers now screen hospitalized patients diligently and are less likely to prescribe high doses of opioids. Despite these efforts, difficulty remains in identifying individuals that have abused opioids long-term before adverse consequences manifest.

A 65 y/o female presented with a BMI of 13.1 and signs of malnutrition. Her husband, a minister, brought her into the eating disorder clinic after workup for other causes was negative and there was a concern for anorexia nervosa. In addition to her malnutrition, the patient suffered from COPD, colitis, osteoarthritis, chronic low back pain, and the inability to walk unsupported. Her medications included anti-anxiety drugs and anti-depressants and she had smoked half a pack a day for thirty-five years. Psychiatric assessment revealed that she had severe anxiety and depressive symptoms, including isolation, anhedonia, and lying in bed (leading to decubitus ulcer). She struggled with her weight s/p peritonitis and colostomy complications for the last four years. Upon hospitalization, she revealed that she had been taking opiates for seven years. For at least the past three years, she acquired opiates from friends and narcotic dealers and progressed from taking her initial prescribed amount for her osteoporosis and chronic back pain to taking five to six pills at a time and up to thirty pills a day.

Upon learning this, medical personnel believed that her opioid abuse was more concerning than her anorexia and immediately placed her in a drug rehabilitation program. Her opioid addiction addressed, the anorexia markedly improved and she returned to normal weight. Opioid abuse does not limit itself to a type of person. It knows no socioeconomic boundaries or age limits.

The Role of Estrogen in Cystic Fibrosis

Authors: Miller K, Snyder K, Kumar N

Institution: Indiana University School of Medicine

Presenter(s): Kylee Miller (kynmille@iupui.edu); Katy Snyder (katsnyde@iu.edu); Nimisha Kumar (nimishakumar85@gmail.com)

Presentation Time: Saturday, 8:09 - 8:18am; RM 232 Room

ABSTRACT

Case: A 17 year-old female with Cystic Fibrosis is admitted with decreased pulmonary function tests and 2-3 weeks of productive cough. She performs airway clearance with albuterol 1-2 times daily, uses Pulmozyme and hypertonic saline daily, and uses her vest twice per day. She had previously grown MRSA, Pseudomonas, and Achromobacter.

Reviewing her PFTs, there was found to be a 15% decrease in average FEV1 this year compared to the previous year. Her records revealed that she had started taking desogestrel-ethinyl estradiol tablets two months prior to her decline.

Broad-spectrum antibiotics were begun for her acute exacerbation while culture was in lab. She also decided to stop her OCPs for the time being.

Discussion: This case was brought to attention because there has been speculation about the role of estrogen in the outcomes of female patients. There has been a known phenomenon that females and males tend to do similarly with their disease prior to adolescence, but after puberty, there is a "gender gap" in disease progression with regards to lung infection and decreased function.

Estrogen has been found to aid in conversion of *P. aeruginosa* to a more mucoid state; additionally, the effects on inflammation and ion channels have been thought to decrease the capability of patients to resolve infections. Whether there is a difference between endogenous and exogenous estrogens on disease outcomes is still a point of debate.

Chotirmall et al. found that oral contraceptive use was significantly correlated with decreased disease exacerbation in CF patients as well as decreased antibiotic use in the population. However, Kernan et al. reported that oral contraceptives did not make a difference in CF severity.

This patient's case exemplifies the necessity for more information on the mechanism of both endogenous and exogenous sex hormones on Cystic Fibrosis and its accompanying infections.

A Delayed Case of the Methylene Blues

Authors: Ojo A

Institution: Eastern Virginia Medical School

Presenter(s): Anthonia Ojo (ojoa@evms.edu)

Presentation Time: Friday, 8:24 - 8:33pm; Diplomat A Room

ABSTRACT

Introduction: Methylene blue (MB) is a cationic thiazine tissue dye used in parathyroidectomy procedures to localize the glands which can be as small as 3-5 millimeters in diameter. Although regarded as safe, recent literature reported adverse reactions including postoperative altered mental status in patients that took selective serotonin reuptake inhibitors (SSRIs) prior to infusion. This case report describes an atypical, delayed time-course of this presentation.

Case: A 53-year-old female with a past medical history significant for ESRD, hypertension, coronary artery disease, depression, and diabetes presented with toxic multinodular goiter and secondary hyperparathyroidism. She was scheduled to undergo a total thyroidectomy with partial parathyroidectomy. The patient's medications included methimazole, zolpidem, fluoxetine, aspirin, atenolol, amlodipine, hydralazine, atorvastatin, lisinopril, and insulin. The patient received a preoperative 500mg injection of MB and subsequently tolerated the surgery with no intraoperative complications. In the post-anesthesia care unit, the patient was awake, responsive, and reported slight perioral tingling. Her postoperative course was marked by hypocalcemia managed by high doses of IV calcium. During the postoperative morning, 17 hours post-MB infusion, the patient had slurred speech and was difficult to arouse with a Glasgow Coma Scale (GCS) of 8. Physical exam was significant for increased tone in the right wrist and forced bilateral plantarflexion. Arterial blood gas revealed chronic respiratory acidosis. Temperature, blood glucose, calcium, and ammonia were within normal limits and there were no signs of autonomic dysfunction. The neck incision continued to be clean, dry, and intact. Head CT scan and MRI were unremarkable, and an EEG suggested toxic metabolic encephalopathy. Care was transferred to the ICU as she continued her scheduled dialysis with one additional treatment. Postoperative day 4, the patient began to return to baseline neurological function. She was able to respond to commands, speak, and eat. Two days later, she was discharged to home without any residual neurological deficits (GSC 15).

Discussion: Transient encephalopathy and serotonin syndrome are well documented toxicities of combining SSRIs and MB. Although instructed to stop fluoxetine prior to the procedure, this patient's mental status manifestations are consistent with transient encephalopathy rather than Hunter's criteria for serotonin syndrome. Documented cases of transient encephalopathy have an onset of between 15 minutes to 11 hours post-operation. This is the first reported case of a 17-hour delay before neurological manifestations. However, this patient's duration from onset to resolution is consistent with other reports of transient encephalopathy. This case report warrants the discussion of the MB and SSRI toxicity as a not just a complication an emergence from anesthesia, but also in the postoperative course.

Subacute weakness in young adult with hypertension

Authors: Okonokhua L, Bakare A, Kammegne-Simo O, Embalabala A

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Presenter(s): Laura Okonokhua (lokonokh@iupui.edu); Alison Embalabala (aembalab@iu.edu); Olivia Kammegne-Simo (okammegn@iu.edu)

Presentation Time: Saturday, 6:00 - 6:09pm; Diplomat B Room

ABSTRACT

27 y/o Caucasian male presented with bilateral lower extremity (BLE) weakness, the left greater than the right. Four months prior he had sudden double vision in left eye, which was waxing and waning in nature. He also had facial weakness that was a concern for Bell's palsy at that time and was given a course of steroids. Although his double vision and facial weakness improved, he still complained of blurry vision and an extreme left gaze. Over the course of several months he developed BLE tingling, numbness, and burning pain with occasional periods of weakness. As his BLE weakness continued to worsen, he was seen by a neurologist and a lumbar puncture was done which showed an elevated protein count of 179. He was admitted for further workup since his symptoms were not improving. MRI of his spine showed a diffuse circumferential epidural phlegmon from T11-L5 and T12. Laminectomy was performed to relieve compression of the spinal cord and biopsy of mass. The specimen was sent to pathology and diagnosed as diffuse large B-cell lymphoma.

Epidural lymphoma is an unusual presentation of lymphoma, accounts for only about 4% of lymphomas, and is usually of the B- cell type. The clinical presentation is that of back pain, with sensory and motor deficits, which signifies cord compression. In previous studies with patients presenting with similar symptoms, this was caused by epidural spread of the lymphoma from paraspinal lymph nodes or from bone marrow involvement with extension by way of penetrating vessels into the subarachnoid space. Diagnosis as primary B-cell lymphoma can only be made if a solitary mass is present, if there is epidural spread from paraspinal involvement, and there have been no other recognizable sites of lymphoma at the time of diagnosis.

A Complicated Pregnancy with Adrenal Bleeding, Community Acquired Pneumonia, and Gestational Hypertension

Authors: Prieto J, McNeil-Masuka J, Wallace N

Institution: Indiana University School of Medicine

Presenter(s): Juliet Prieto (jmprieto@iu.edu); Janelle McNeil-Masuka (mcneilja@iu.edu)

Presentation Time: Friday, 12:00 - 12:09pm; RM 232 Room

ABSTRACT

Case:

A 33-year-old nulliparous female with a BMI of 36 presented with left upper back pain at 33 weeks pregnant. She was found to have adrenal bleeding and was hospitalized for four days for expectant management. 48 hours into her hospitalization, she was diagnosed with CAP and was treated with ceftriaxone. She was released, but at a check-up five weeks later, she presented with gestational hypertension. Since she was over 38 weeks pregnant with a diagnosis of severe gestational hypertension, her labor was induced. She had a cesarean section due to fetal intolerance of labor and delivered a healthy baby boy. She was discharged home on high blood pressure medication for a few weeks to help control her blood pressures after delivery.

Conclusions:

Preeclampsia can lead to organ malfunction, placental abruption, and eclampsia among many other life-threatening events. The patient's complications in the month before her induced labor may have played a role in her development of gestational hypertension leading to induced labor to prevent preeclampsia. This discussion will focus on the causes of adrenal bleeding, CAP during pregnancy, and risk factors for preeclampsia. Specifically, the possibility of the adrenal bleeding leading to the gestational hypertension will be examined.

Clinical Significance:

10-50% of women who are diagnosed with gestational hypertension go on to develop preeclampsia in one to five weeks. Gestational hypertension is defined by a blood pressure $\geq 140/90$ mmHg starting at 20 weeks of gestation in absence of proteinuria, whereas preeclampsia is hypertension including proteinuria and/or end stage organ dysfunction. Other illnesses may also play a role in a woman's development of gestational hypertension, such as community acquired pneumonia (CAP) or adrenal bleeding. CAP is an acute infection of the pulmonary parenchyma transmitted in a community instead of a hospital. Although uncommon, adrenal bleeding may increase blood pressure.

Whole Exome Sequencing as a Tool to aid in Prenatal Genetic Diagnosis

Authors: Ross E, Moore-Lindsey D, Zunich J

Institution: Indiana University School of Medicine

Presenter(s): Emily Ross (ebeans@iupui.edu)

Presentation Time: Friday, 12:09 - 12:18pm; RM 232 Room

ABSTRACT

Case: A 30-year-old G1P0 white female presents for genetic counseling after ultrasound identifies fetal cranial edema, absent nasal bones, and shortened long bones suggesting a fetal skeletal dysplasia. Because of limitations of molecular testing by panel, concerns regarding fetal loss, and the desire to provide a diagnosis for future reproductive decisions, it was elected to perform whole exome sequencing (WES) to attempt to identify a mutation responsible for the ultrasound findings. A novel mutation in COL1A2 was discovered. At 26 weeks gestation, the mother began to experience vaginal bleeding. Premature placental detachment was suspected. An emergency Cesarean section was performed. The infant lived for a few minutes and then expired. No autopsy was performed.

Conclusions: COL1A2 is a gene which encodes a chain in Type I collagen. Mutations in this gene have been associated with Types I and III Osteogenesis Imperfecta. After comparing the fetus' WES results with genetic sequencing of the corresponding genes in the parents, it was discovered to likely be a de novo mutation. This information can help direct the couple's family planning with regards to the risk of having another pregnancy with a similar presentation.

Clinical Significance: In cases where a likely genetic cause cannot be identified through history, physical, and maternal bloodwork, whole exome sequencing is a tool that can be used by clinicians when amniocentesis only yields enough fluid for one test to be run. Sequencing of the exome increases efficiency and focuses attention to the areas of the genome that are expressed. Advantages include the ability to identify novel mutations in genes that were previously unknown to cause certain disorders as well as broadening the scope of genes analyzed so that diagnoses can be made when the clinical presentation does not fit with the textbook description of a disorder.

Inadequate Women's Healthcare Behind Bars

Authors: Schlotman KE, Omorogbe AA, Parikh P, Rohr-Kirchgraber T

Institution: Indiana University School of Medicine

Presenter(s): Kelly Schlotman (keschlot@iupui.edu); Ashleigh Omorogbe (aomorogb@iu.edu); Priya Parikh (priparik@umail.iu.edu)

Presentation Time: Friday, 7:39 - 7:48pm; RM 237 Room

ABSTRACT

Background: The number of incarcerated women in the United States has increased significantly over the past several years. Despite this increase, access to appropriate healthcare specific to women's needs remains variable in jails and prisons due to lack of funding and required standards of care. In addition, many facilities lack providers that are adequately trained in obstetrics and gynecology.

Case: A 44-year old woman with a history of a right salpingo-oophorectomy 22 years ago due to an ovarian serous cystadenoma presented to her primary care physician after being confined in jail for two years. She complained of left-sided abdominal pain for one year and a 30-35 pound weight gain over the past 8-9 months. Other pertinent symptoms at this time included dyspnea, urinary hesitancy, increased urinary frequency, and changes in her bowel movements. A large, tender mass was palpated four cm above the umbilicus on physical exam which raised concern for a possible recurrence of her ovarian tumor. A CT scan demonstrated a 17.1x 17.3x 18.4 cm mass likely ovarian in origin. The patient subsequently underwent a total abdominal hysterectomy and left salpingo-oophorectomy. Pathology on the abdominal specimens revealed a borderline seromucinous tumor of the left ovary with no malignant changes to the omentum or uterus.

Discussion: Evaluation of an adnexal mass begins with a clinical assessment of the patient's symptoms and a thorough physical examination. According to the National Commission on Correctional Health Care, adequate gynecological histories and physical exams are often not done upon admission nor on a yearly basis in correctional facilities. In this case, lack of adequate care resulted in a significant progression of the patient's condition and symptoms putting her at increased risk for complications. Overall, increasing efforts need to be made to understand and address female health care in the correctional setting.

Identifying and Diagnosing A Rare Genetic Disease, Primary Ciliary Dyskinesia (PCD) in a 28 Year Old

Authors: Schornick L, Norman M, Deschamp A, Davis SD

Institution: Indiana University

Presenter(s): Leah Schornick (ljschorn@indiana.edu); Melanie Norman (melanorm@indiana.edu)

Presentation Time: Saturday, 8:54 - 9:03am; RM 241 Room

ABSTRACT

Case: A 28-year-old female presented with chronic nasal congestion, productive daily cough, recurrent otitis media, and infertility. Pertinent past medical history includes neonatal respiratory distress despite term delivery, chronic cough and congestion since birth. At 6 months of age a chest x-ray revealed sinus inversus totalis. At age 5, she underwent tonsillectomy with adenoectomy, a nasal scrape biopsy (which was negative), and sinus surgery. Bilateral myringotomy tubes were placed twice. She currently suffers from unilateral conductive and mixed hearing loss. Over the past 28 years, she has undergone recurrent, costly workups due to annual sinus infections, chronic nasal congestion, bronchitis, multiple environmental allergies, and chronic cough producing yellow sputum that is occasionally accompanied by wheezing. Due to her symptoms, she was referred for PCD evaluation with nasal nitric oxide (nNO) measurements, genetic testing, and a second nasal ciliary biopsy. Results of these tests were consistent with a diagnosis of PCD.

Conclusion: PCD is an autosomal recessive genetic disorder caused by a defect in the ciliary beat leading to impaired mucociliary clearance within the airways. Patients with PCD have recurrent sinopulmonary symptoms, chronic daily cough and congestion, and laterality defects may also be seen. Due to these manifestations, patients are often misdiagnosed with other illnesses including asthma, cystic fibrosis, allergies, immunodeficiency, and recurrent pneumonias.

Clinical Significance: The clinical manifestations of PCD include a chronic daily productive cough, rhinosinusitis, recurrent otitis media, neonatal respiratory distress despite term delivery, and 50% have situs inversus totalis. Since many symptoms overlap with other diseases, PCD can often be misdiagnosed or missed altogether. Promoting better knowledge of this disease would lead physicians to include PCD in their differential when these classic symptoms manifest; thereby, allowing prompt diagnosis and prevention of excessive, costly workups for other diseases.

Sweet's Syndrome Caused by the Influenza Vaccine

Authors: Schultz K, Teijelo D, Rancour E

Institution: Indiana School of Medicine

Presenter(s): Katherine Schultz (schulkae@iu.edu); Daniela Teijelo (dteijelo@iu.edu)

Presentation Time: Friday, 7:30 - 7:39pm; RM 237 Room

ABSTRACT

Sweet's syndrome, a febrile neutrophilic dermatosis, is a rare complication of vaccination. It presents with skin lesions and fever.

A healthy 53-year-old female received a flu vaccine and later that day developed fatigue, low-grade fevers, night sweats, rash, arthralgia and joint swelling which improved with Naprosyn. She took no other medications, denied recent travel or exposures, had no history of cold sores or illnesses except for a remote history of mononucleosis. She works in healthcare as an outpatient pediatric nurse and has received yearly flu vaccines x 20 years. Her exam was significant for annular erythematous, edematous plaques with central clearing scattered throughout her lower extremities with bilateral ankle swelling and decreased range of motion. Skin biopsy revealed granulomatous inflammation in dermis with necrobiosis consistent with histiocytoid Sweet's syndrome. Her labs were significant for an elevated ESR and CRP with negative HSV serologies and EBV serologies consistent with a previous infection. Her rash improved with topical corticosteroids and her joint swelling improved with NSAIDs and compression; she did not require systemic corticosteroids.

Sweet's syndrome (acute febrile neutrophilic dermatosis) an inflammatory disorder with characteristic skin lesions and fever is divided into three categories based on etiology: malignancy-associated, drug-associated and classical/idiopathic (up to 50% of cases). The pathogenesis is unknown but the association with underlying disease suggests a hypersensitivity reaction. Sweet's syndrome may persist for weeks to months with eventual spontaneous resolution and a recurrence rate of 30% with or without treatment. It is recommended to get up to date malignancy screenings; this patient was up to date and her screenings were unremarkable.

While there are several cases of vaccination-triggered Sweet's syndrome, including influenza vaccine, this case highlights Sweet's syndrome as a rare complication of vaccination. There is no clear consensus regarding the risk of recurrence with subsequent influenza vaccinations.

Coccidioidomycosis Meningitis: More Than Just A Headache

Authors: Sethi HK, Quezada C

Institution: A.T. Still University School of Osteopathic Medicine in Arizona (ATSU SOMA)

Presenter(s): Harleen Sethi (hsethi@atsu.edu)

Presentation Time: Friday, 7:30 - 7:39pm; Solano Room

ABSTRACT

Case:

A 47-year-old female with a past medical history of hypertension and chronic headaches for 3 months was followed at an outpatient community health center in Woodlake, CA. Preliminary evaluation demonstrated normal CT scan of brain and CBC with noted eosinophilia.

The patient was admitted to the hospital when she presented with worsening headaches, confusion, generalized weakness and blurry vision. Initial evaluation included a brain CT scan demonstrating obstructive hydrocephalus with periventricular enlargement and small low-density areas in the basal ganglion. Lumbar puncture revealed elevated opening pressure. CSF revealed pleocytosis, glucose 31 mg/dL and protein 157 mg/dL. CSF and serum complement fixation was positive for anti-coccidioidal antibodies. Evaluation for any immunodeficiency status was negative. During hospitalization the patient was started on IV fluconazole, however, due to the persistence of the hydrocephalus, a ventriculoperitoneal shunt was placed to reduce intracranial pressure. The patient was discharged with orders, per infectious disease, for a lifelong regimen of Fluconazole and Keppra for seizure prophylaxis.

Conclusion:

Coccidioidomycosis meningitis typically presents with chronic headaches, hydrocephalus and blurry vision, which were all hallmarks of our patient's presentation. This case serves as a reminder that patients presenting with chronic headaches and neurological symptoms, especially from the San Joaquin Valley, may benefit from a high index of suspicion and thorough evaluation early on.

Clinical Significance:

Coccidioidomycosis, also known as Valley Fever, is a fungal infection endemic to the southwestern United States and Central and South America. The primary infection is caused by the inhalation of spores and the most lethal dissemination site is the meninges. California accounts for 31% of all nationally reported infections. Infection in those with no apparent underlying condition is usually self-limiting and results in lifelong immunity. Furthermore, the frequency of immunocompetent patients presenting with coccidioidal meningitis is rare thus making the diagnostic approach challenging.

Heart attack in my early 30s, the price of fertility?

Authors: Thomas EE, Wang Y, Armstrong SA

Institution: Indiana University School of Medicine

Presenter(s): Yilun Wang (yiluwang@iupui.edu); Emily Elizabeth Thomas (emethoma@iupui.edu)

Presentation Time: Saturday, 8:36 - 8:45am; RM 241 Room

ABSTRACT

Thomas, Emily, E. Wang, Yilun. Armstrong, Samantha, A.

Case: Patient is a 32 yo female with PMH of Obesity status post Gastric Bypass surgery in 2010, Polycystic Ovarian Syndrome (PCOS), infertility on letrozole presented to ER with sudden onset, 10/10 excruciating sub-sternal chest pain associated with dyspnea and palpitations. Pain radiated to both her arms that improved with nitroglycerin in the ER. Her EKG showed peaking of precordial T waves and some ST segment changes in V1 - V3. She was taken to cath lab where they found that she had dissection of her mid-LAD with stenosis to 70 - 80%. Bare metal stents were placed to repair the LAD. Patient tolerated the procedure well and is currently off all hormone treatments.

Conclusion: Letrozole, an aromatase inhibitor traditionally used as adjuvant hormonal therapy for breast cancer, has been used off-label for infertility treatment since the 1990s. Letrozole has been found to be more effective than clomiphene in the treatment for infertility in PCOS patients with BMI ≥ 30.3 kg/m². It has been recommended to be used in this patient population for achieving a significantly higher live birth rate (20% vs 10%). However, while rare, letrozole does carry the potential for serious cardiovascular side effects, such as myocardial infarction (1%-2%). We report a case of a spontaneous coronary artery dissection (SCAD) in a young PCOS patient taking letrozole for fertility.

Clinical Significance: Letrozole has rare but potentially life threatening side effects including myocardial infarction. The impact of letrozole's side effect should not be ignored. Current studies are focused primarily on letrozole's effectiveness on infertility. However, there is a paucity of evidence regarding the safety profile on women's health in the target population of obese PCOS patients. Physicians should use letrozole with caution for off-label ovulation induction with a focus on ensuring health outcomes of not only the fetus, but also the potential mother.

Non-Healing Breast Abscess

Authors: Toney M, Magallanes J, Shah SP, Rodriguez G

Institution: Indiana University School of Medicine

Presenter(s): Janette Magallanes (janmagal@iupui.edu); Margo Toney (mmtoney@iu.edu); Giovanni Rodriguez (giorodri@iu.edu); Sheena Paresh Shah (shahsp@indiana.edu)

Presentation Time: Saturday, 5:42 - 5:51pm; Diplomat B Room

ABSTRACT

Authors: Margo Toney, MD, Janette Magallanes, Sheena Paresh Shah, Giovanni Rodriguez

Case:

63-year-old Female with a complex past medical history including diabetes type II, colon cancer, and uterine cancer, presented to an urgent care center with a “sore” on her left breast that was draining green pus for about one week. Patient denied any inciting event, but did recall a grease burn to her left breast about 15 years ago. She finished a two week course of amoxicillin-clavulanate and follow up breast ultrasound revealed a healing abscess on the left breast. Subsequent breast ultrasound three weeks later, six weeks after initial presentation, showed the abscess had not resolved and patient was referred to breast surgeon. Biopsy of the lesion resulted in a preliminary diagnosis of squamous cell carcinoma. Subsequent digital mammography imaging showed no concerns for metastasis, and patient underwent surgical excision of the left breast lesion as well as a suspicious lesion below her right ear. Final pathology diagnosis of the left breast lesion was actually a well-differentiated sebaceous carcinoma, with free margins, and final pathology diagnosis of the right neck lesion was a sebaceoma.

Conclusions:

Non-healing abscesses should alert the physician to a possible underlying malignancy. Proper workup and care, as was done in this case, minimized this patient’s risk of severe morbidity and mortality.

Clinical Significance:

A diagnosis of sebaceous carcinoma increases the risk by 43 percent for a visceral malignancy compared to the general population. Due to the patient’s age and history of cancer, this sebaceous carcinoma may be considered a marker of Muir-Torre syndrome (MTS), a rare disorder considered a subgroup of hereditary nonpolyposis colorectal cancer syndrome. Given that many individuals with MTS develop two or more malignancies prior to, concurrent with, or following a sebaceous tumor, it is recommended that the patient be tested for disruption in MMR gene.

(A)nother Cause of Premature Coronary Artery Disease**Authors:** Vajdi T, Krcmarik K**Institution:** UC San Diego School of Medicine**Presenter(s):** Tina Vajdi (tvajdi@ucsd.edu)**Presentation Time:** Saturday, 9:12 - 9:21am; RM 241 Room

ABSTRACT

Case:

A 33-year-old patient with a history of ST-elevation myocardial infarction requiring 2 cardiac stents at the age of 30, presented with intermittent substernal chest pressure. He denied a previous history of nicotine, alcohol, or recreational drug use, and related having an uncle with premature coronary artery disease (CAD). His physical exam was benign with non-palpable chest pain, absence of cardiac murmurs, and normal vital signs. Chest XRAY as well as serum lab work with CBC, CMP, serum troponins, and lipid panel were all unrevealing. An EKG demonstrated no ischemic pattern, but an echocardiogram was obtained showing multiple wall motion abnormalities and a 0.8 X 1.1 cm thrombus in his left ventricular apex. Given his young age and a lipid panel uncharacteristic of familial hypercholesterolemia, he was worked up for less conventional risk factors for CAD, and was found to have elevated levels of lipoprotein(a) (Lp(a)).

Conclusions:

In patients with premature CVD, Lp(a) dyslipidemia should be high on one's differential, meriting additional workup and possible treatment. Elevated levels of Lp(a) are independently and causally associated with an increased risk for CVD, and cannot be significantly improved with lifestyle modifications. Use of daily high dose niacin remains the most pragmatic therapy available to lower serum Lp(a) levels and to potentially reduce the incidence of CVD events.

Clinical Significance:

Elevated levels of Lp(a) have been associated with CAD, especially in patients with premature CAD without other dyslipidemias. Screening for Lp(a) is recommended for patients with premature CAD, familial hypercholesterolemia, family history of premature CAD or elevated Lp(a), or recurrent CVD despite statin treatment. Several studies have identified increased levels of Lp(a) as an independent risk factor that remains constant over time as well as having a causal relationship for CAD. Lifestyle modifications do not alter serum Lp(a) levels significantly because Lp(a) is a genetically determined dyslipidemia.

Diabetes: More than Foot Ulcers**Authors:** Wallace K, Sharlow C, Voss P**Institution:** Indiana University School of Medicine**Presenter(s):** Kasia Wallace (kalawall@iupui.edu); Christine Sharlow (csharlow@iupui.edu)**Presentation Time:** Saturday, 9:12 - 9:21am; Solano Room

ABSTRACT

Gas gangrene, a myonecrotic bacterial infection commonly due to Clostridium, can rapidly progress to septic shock especially in the setting of diabetes mellitus. Presentation typically includes fever, tachycardia, and foul-smelling discharge with gas formation in the wounded area. Major risk factors include trauma/surgery, diabetes, obesity, vascular disease, and immunosuppression. Skin cultures and imaging can solidify the diagnosis. Rapid treatment in the form of antibiotics and surgery is necessary.

Patient presented to ED with altered mental status, polyuria, polydipsia, SOB, fever/chills, weight loss, and fatigue. A labial cyst, present x 2 weeks, was now draining with surrounding cellulitis. On exam she had tachycardia, tachypnea, and hypertension. Diagnosis upon admission was sepsis, DKA, and toxic metabolic encephalopathy and antibiotics were started. Days later, after complaints of abdominal pain, the labial cyst was drained and blood, brown discharge, and air were expressed. Culture was mixed, with gram-negative rods, and gram-positive rods and cocci. CT showed inflammation and gas formation in the vulvar region and abdominal wall, suggesting necrotizing fasciitis. Debridement was completed twice. Wound vac placement was unsuccessful due to wound size.

Later in her stay, she started having bloody BMs, requiring transfusions. Colonoscopy was unremarkable, so a third debridement was performed and wound vac successfully placed and she recovered enough to be discharged.

This case shows the full-body nature of diabetes. While we think primarily of kidney failure and foot ulcers, there are many other life-threatening complications of diabetes that we, as physicians, need to be mindful of in terms of our physical exams, as well as patient education. It is crucial to advise patients that skin infections can happen anywhere, and to regularly do full-body skin checks to protect future patients from such tumultuous hospital courses.

An Inmate with a Bloody Nose- A Case Study on Adult Sinonasal Alveolar Rhabdomyosarcoma

Authors: Wiseman M, Sturm J, Li M, Machogu E

Institution: Indiana University School of Medicine

Presenter(s): Melanie Wiseman (mbumbalo@iupui.edu); Julie Strum (julneel@iu.edu); Mozhu Li (mozhli@iu.edu)

Presentation Time: Friday, 8:33 - 8:42pm; RM 237 Room

ABSTRACT

Epistaxis, nasal obstruction, and rhinorrhea can indicate to a medical provider that a patient has a cold, a bacterial sinus infection, or in this case sinonasal alveolar rhabdomyosarcoma. Rhabdomyosarcoma (RMS) is an aggressive malignancy of myogenic origin, and sinonasal RMS is the most common sarcoma in children.¹ Adult RMS has a worse prognosis, with studies showing an overall 10-year survival of 37% in patients over 28 years of age.²

A 36 year old African American female presented from prison to the ED for evaluation of left-sided nasal obstruction and small volume epistaxis. She reported being unable to breath through her left nostril despite daily use of Zyrtec and nasal irrigation. She also complained of left -sided facial weakness, numbness and diplopia. She had recently finished a 14-day-course of antibiotics for presumed sinusitis without improvement. Using a nasal endoscope ENT visualized a “yellow/firm mass obstructing the entire left nasal cavity approximately 2 cm posterior to pyriform aperture”. Nasal biopsies made the diagnosis of sinonasal alveolar RMS. The tumor board decided on a 21-day cycle of chemotherapy including doxorubicin, ifosfamide, and intrathecal methotrexate followed by probable surgery and radiation. Complications of her treatment included possible ifosfamide neurotoxicity during cycle 1 and a seizure with PEA arrest during cycle 3 requiring mechanical ventilation for 3 days. MRI showed progression of the tumor to the frontal lobes and subfalcine herniation. The decision was made to stop chemotherapy and administer palliative radiation.

This case demonstrates a unique and deadly subtype of RMS. Alveolar RMS has been shown to occur more frequently in adults and present with a more aggressive clinical course, increased reoccurrence, and decreased survival.³ This case also contains a feared complication of sinonasal tumors: extension and invasion into brain tissue. In this case, a bloody nose was an indication of deadly disease.

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Effectiveness of Bupivacaine Liposome Injectable Suspension for Postoperative Pain Control in Total Knee Arthroplasty: A prospective, randomized, double blind, controlled study

Authors: Aiello P, Freeman DC, DeClaire JH

Institution: Wayne State University School of Medicine

Presenter(s): Paige Aiello (paiello@med.wayne.edu)

Presentation Time: Friday, 12:27 - 12:36pm; Diplomat B Room

Dr. JH DeClaire has received royalties from Zimmer-Biomet. Dr. JH DeClaire was a paid consultant for Zimmer-Biomet. Dr. JH DeClaire received research support from Pacira Pharmaceutical, Inc. [a grant that covered the cost of liposomal bupivacaine for the purpose of the study].

ABSTRACT

Introduction:

Pain control following total knee arthroplasty (TKA) heavily influences timing of mobilization and length of hospital stay postoperatively. In TKA, liposomal bupivacaine demonstrated an advantage over femoral nerve block in its ability to control pain with earlier mobilization and shorter hospitalization. We compare the effectiveness of liposomal bupivacaine to ropivacaine in TKA postoperative pain control, including impact on early mobilization and length of hospital stay, when each is used in periarticular injection (PAI) as part of multimodal pain management.

Methods:

In this prospective, double blind, randomized, controlled study, 96 opioid naïve patients with a primary diagnosis of osteoarthritis undergoing a unilateral TKA were randomized into a control group: PAI of ropivacaine, ketorolac, morphine, and epinephrine in saline; 100cc and an experimental group: PAI of bupivacaine, ketorolac, morphine, and epinephrine in saline; 80cc plus 1.3% liposomal bupivacaine 20cc; total injection 100cc. All patients underwent TKA with a single surgeon at a single institution between May 2014 and March 2015. Patients with prior knee replacement, inflammatory arthritis, unicompartmental knee replacement, bilateral TKA, or opioid tolerance were excluded from the study. Postoperative pain management and physical therapy were standardized. The frequency and total use of oral and intravenous narcotic use was recorded during hospital stay. Visual Analog Pain scores, hours to ambulate 100 feet, and length of hospital stay (hours) were recorded.

Results:

The two groups (control N=49, experiment N=47) did not differ significantly in mean narcotic use per hour, total narcotic use during hospital stay (in units of hydrocodone) (experimental: 97.7mg±42.84; control: 89.6mg±58.57), length of hospital stay (experimental: 59.0±13.7hours; control: 60.3±23.7hours), time to ambulate 100 feet (experimental: 27.3±17.4hours; control: 26.4±19.4hours), or Visual Analog Score for pain on day 1 or day 2 postoperatively.

Conclusion:

There is no benefit in the use of liposomal bupivacaine compared to ropivacaine for postoperative pain control in TKA.

Coping with a code: Providing an academic framework to help third year medical students prepare for the practical and emotional reactions to attempted resuscitation

Authors: Brown A, Ma M, Macauley R, Nicholas C, Rabinowitz T, Leclair L, Larner R

Institution: Robert Larner, M.D. College of Medicine at The University of Vermont

Presenter(s): Melanie Ma (melanie.ma@med.uvm.edu); Alexandra Brown (Alexandra.e.brown@med.uvm.edu)

Presentation Time: Saturday, 8:36 - 8:45am; RM 232 Room

ABSTRACT

PURPOSE

At the University of Vermont, Advanced Cardiac Life Support (ACLS) training for fourth year medical students focuses on methodology. Third year students are, however, exposed to ACLS codes without a framework with which to help them cope with unfamiliar and troubling outcomes. We created a simulation-based session in which students witnessed a code and patient death followed by large group debriefing with written and verbal components targeted to emotional stress and coping. We hypothesized that students would benefit both academically and emotionally from this experience.

METHODS

Medical students beginning their third year were introduced to a simulated patient who subsequently experienced cardiac arrest, underwent a simulated code, and died. Students wrote a one-word reflection to summarize their initial reaction, followed by a large group debrief with a panel of critical care, palliative care, psychiatry, and spiritual care faculty. Students completed brief pre- and post-code session surveys to assess knowledge and emotional preparedness, and to evaluate the value of the experience.

RESULTS

105 students completed questionnaires. Following the session, knowledge of code team role and responsibilities improved (91% vs 100% ($p=0.0035$) and 83% vs 99% ($p=0.0001$) respectively); awareness of available mental health services increased (25% vs 90%, $p<0.0001$); and students' perception that they were 'not prepared' to witness a code dropped significantly (24% versus 0%, $p<0.0001$). 94% of students felt the session was either "somewhat" or "very helpful," and 99% "somewhat" or "strongly agreed" that the session was a valuable addition to the curriculum.

CONCLUSION

Students valued the code session as it improved their knowledge of code teams' roles and responsibilities, increased their sense of preparedness for witnessing a cardiac arrest, and increased their awareness of mental health services. Future directions include a follow up survey of the third year students, now nine months into clerkship, to assess lasting impact.

FTMS-Q: A Mnemonic to Improve Transgender Born Female History Taking

Authors: Genova R, Losso M, Danko M

Institution: Oakland University William Beaumont School Of Medicine

Presenter(s): Rafaella Genova (rgenova@oakland.edu)

Presentation Time: Saturday, 9:21 - 9:30am; Solano Room

ABSTRACT

Objective: There is a lack of consensus in interviewing transgender-born-female patients in OB-GYN outpatient clinics. Although there is an increasing amount of literature on how to be more inclusive and sensitive to these patients, there is no readily available guide on what questions to ask. FTM in the LGBT community stands for Female-to-Male transgender, giving rise to FTMS-Questionnaire. The use of FTMS-Q: Function (sexual/concealing practices), Testosterone/hormone therapy, Mental health/sexual abuse, and STIs education, enables providers to restructure the visit from a focus on traditional wellness assessment to identification and treatment tailored to this population.

Methods: The mnemonic was formulated with the help of healthcare professionals who work with the LGBT community. Twenty transgender-born-females participated on a survey assessing their experience with gynecologist and other primary care physicians. Participant's opinion the mnemonic was requested. Ten physicians were asked if they found the mnemonic to be potentially helpful, and if they had a list of health providers, such as mental health and endocrinology, with experience on LGBT community.

Results: From the group of patients, 83% felt their physician knew little about transgender health, 45% states their OB-GYN were their only physician, and 65% believed birth control pills are "extra female hormones", which they want to avoid. There was a positive response towards the mnemonic with the patient group, and some felt it would give an opportunity to touch on topics that they would hesitate to bring up, such as hormone therapy. Physicians agrees there is a need for such a guide, and believe they would use this mnemonic when needed. Only one physician had referrals for LGBT experienced providers.

Conclusion: We believe there is a need for a quick guide to help healthcare providers to better care for their transgender-born-female patients and physicians agree, therefore this mnemonic should be considered.

Cough, Cough..Colon Cancer

Authors: Hernandez C, Sandoval S, Metcalf M, Rohr-Kirchgraber T

Institution: Indiana University School of Medicine

Presenter(s): Cindy Hernandez (cindhern@iupui.edu); Sariely Sandoval (sarisand@iu.edu); Michell Metcalf (mimetcal@indiana.edu); Dr. Theresa Rohr-Kirchgraber (trohrkir@iu.edu)

Presentation Time: Friday, 7:39 - 7:48pm; Diplomat B Room

ABSTRACT

Background: Colorectal cancer (CRC) is the third most common cause of cancer death in the United States with approximately 134,490 new cases annually. Most patients with early stage CRC are asymptomatic and diagnosed from screening, such as in Familial adenomatous polyposis (FAP), an inherited condition causing thousands of polyps. Ninety percent w/ FAP develop CRC by age 45 and 2.1% of participants in a recent study at age 30 met criteria for more aggressive screening based on family history and 7.1 %met high-risk criteria by 50 years old. In patients aged 35 to 55 enrolled in a multispecialty group practice, 39% of patients reported they had not been asked about family history (FH), 46 % of patients with a strong FH did not know they should be screened at an earlier age, and 55 % with a strong FH had not received appropriate screening.

Case: A healthy 35 year old female presents for 1 month h/o non-productive cough and abdominal pain. ROS is negative. However, when asked about FH she reveals her Father and Grandfather have a history of colon cancer though she is unsure of the type. Based on her FH a colonoscopy is performed leading to her diagnosis and treatment of FAP.

Discussion: Family history is an important part of a visit and taking every opportunity to provide preventive care is essential. For an otherwise healthy young person, every interaction should be considered a chance to provide preventive services and in this case she was fortunate to be seen by a physician who took this opening.

Family history identifies those at risk and reduces morbidity and mortality by instituting earlier screening and treatment. Knowledge of risk factors allows families the opportunity to reduce their risk of developing more advanced diseases and make informed life decisions when the possibility of a disease is known.

Coordinating Services for Survivors of Human Trafficking

Authors: Himmelstein J, Carlough M, Tolleson-Rinehart S

Institution: University of North Carolina Gillings School of Global Public Health and University of South Carolina School of Medicine Greenville

Presenter(s): Jessica Himmelstein (himmelst@email.sc.edu)

Presentation Time: Friday, 7:57 - 8:06pm; Diplomat A Room

ABSTRACT

Hypothesis: Human trafficking has gained increased attention from the medical community. One study reported that 87.8% of those trafficked for sexual exploitation had contact with a health care provider, representing an opportunity for health care providers to intervene (Lederer and Wetzel 2014). Recent research has emphasized increased awareness and screening by health care providers as key to identifying victims of human trafficking (Simich et al 2014). However, once identified, survivors require comprehensive care to address short-term and long-term needs that ensure their safety, privacy and dignity.

This study aims to understand how health care providers can improve their knowledge and utilization of resources that community advocates say survivors of human trafficking most need.

Methods: This study synthesized a systematic review of the literature with four in-depth key stakeholder interviews to understand (1) the resources needed to aid survivors of human trafficking and (2) how medical providers can better understand and utilize these resources to refer identified victims. One community advocate's interview addressed resources most needed by survivors. Three medical providers' interviews addressed knowledge and utilization of resources by providers for referring patients.

Results: The literature review and the interviews exposed gaps in health care provider identification of victims and referrals to needed community resources. Identification difficulties result from lack of provider training and time constraints. Provider time constraints impair identification and referral in two ways: first, time constraints may prevent the use of screening tools. Second, time constraints prevent the development of a trusting provider-patient relationship.

Conclusion: Having an established interdisciplinary referral system seemed to overcome some of the time constraint barriers and provide the best coordination of aftercare services. These findings suggest the need for adequate referral protocols and partnerships with community stakeholders to better serve victims of human trafficking.

Prognostic Implications of Genomic Aberrations in Patients with Chronic Lymphocytic Leukemia at the Beaumont Health Cancer Center

Authors: Ifabiyi TO, Ogunleye FN, Micale MA, Jaiyesimi IA

Institution: Oakland University William Beaumont School of Medicine

Presenter(s): Tolulope Ifabiyi (tifabiyi@oakland.edu)

Presentation Time: Saturday, 8:09 - 8:18am; Embassy Ballroom

ABSTRACT

Hypothesis: We hypothesize that patients with Chronic Lymphocytic Leukemia (CLL) treated at Beaumont Health with a 17p or 11q deletion will have the worst prognosis while those with a sole 13q deletion will have the best prognosis.

Methods: A retrospective review of all patients diagnosed with CLL between 2010 and 2015 at the Rose Cancer Treatment Center was conducted, with a total of 151 patients identified. Demographic variables, types of cytogenetic abnormalities and their distribution were documented. SPSS 21 was used for data analysis and a Kaplan-Meier curve was plotted for survival. 12 and 36-month overall survival rates were analyzed by actuarial methods.

Results: The median age at diagnosis was 74 years, of which 59.6% (90) were male and 40.4% (61) female. Using a 12 and 36-month survival analysis, patients with a sole 13q deletion had a survival rate of 90.9% for both time periods. Conversely, Patients with a 17p deletion had the worst survival rate with 0% survival at 36-months. Those with a 11q deletion showed a 75% survival rate at 12 and 36-months, while those with trisomy 12 had a 81.8% survival rate for both time periods. In patients with both 11q and 13q deletions, the 12-month survival rate was 100% while the 36-month survival rate was 80%. Similarly, those with trisomy 12 and a 13q deletion had a 100% survival rate for both periods.

Conclusion: Patients with a 17p deletion have the worst prognosis, while those with a sole 13q deletion have the best prognosis. Interestingly, when a 11q deletion or trisomy 12 exists in combination with a 13q deletion, a patient's prognosis appears to improve compared to a sole 11q deletion or trisomy 12.

Suboptimal hepatitis B screening in Haitian patients

Authors: Ioannou S*, Rodriguez J*, Smith L, Gonzalez-Diaz J, Kobetz E, Martin P, Jones P

Institution: University of Miami Miller School of Medicine

Presenter(s): Stephanie Ioannou (s.ioannou@umiami.edu); Jennifer Rodriguez (j.rodriguez20@med.miami.edu)

Presentation Time: Saturday, 9:03 - 9:12am; RM 237 Room

* Indicates co-authors

ABSTRACT

Over 20,000 new cases of hepatocellular carcinoma (HCC) are diagnosed annually in the U.S. Early detection in high-risk patients is crucial to improving mortality. A significant barrier to appropriate cancer surveillance is failure to diagnose the underlying disease, particularly viral hepatitis B (HBV), which accounts for over 50% of HCC cases worldwide. Compared to national rates, acute HBV rates are higher in Florida due to immigration from neighboring HBV-endemic countries, with disease burden particularly high in non-Hispanic Blacks. It has previously been shown that screening for HBV in persons from HBV-endemic countries is suboptimal. CDC screening recommendations for HBV are complicated and many primary care providers are unfamiliar with them: persons born in countries where hepatitis B surface antigen (HBsAg) prevalence is greater than 2% should be screened. Appropriate screening allows for effective antiviral therapy. We conducted a retrospective chart review to determine the proportion of patients born in Haiti, an HBV-endemic country, who are screened for HBV. Those included were Black patients residing in communities with large Haitian populations, who were seen by Internal or Family Medicine clinics at the University of Miami with a minimum of two visits within a 5-year period, including a comprehensive physical exam. Three hundred patient charts were reviewed for markers of HBV infection including HBsAg, hepatitis B surface antibody (HBsAb), and/or hepatitis B core antibody (HBcAb) IgG. Bivariate and multivariate analyses identified that of 272 total patients in the final analysis, 29.9% were screened for HBsAg, 2.6% were seropositive; 15.1% were screened for HbsAb, 75.6% were seropositive; and 7% were screened for HBcAb, 10.5% were seropositive. Of 46 patients confirmed to be from HBV-endemic countries, 95.5% of which were Haitian, only 31.1% were screened for HBsAg, 15.3% were screened for HBsAb, and 9.2% were screened for HBcAb. These results suggest that individuals from HBV-endemic countries are not being adequately screened according to CDC guidelines.

Clinicodemographic predictors of the impact of infections on myasthenia gravis

Authors: Kukulka NA, Gummi R, Govindarajan R

Institution: University of Missouri School of Medicine at Columbia

Presenter(s): Natalie Kukulka (nak5zb@health.missouri.edu)

Presentation Time: Friday, 12:27 - 12:36pm; Diplomat A Room

ABSTRACT

Background:

Myasthenia Gravis (MG) is an autoimmune disease which necessitates use of long term immunosuppressive treatment and thus makes them vulnerable to infections. The objective of this study was to assess the impact of infections on MG and its exacerbations and identify the clinicodemographic predictors which contribute to MG exacerbations needing Emergency Department (ED) visits and hospitalizations.

Methods:

A retrospective chart review was performed on 127 MG patients between 2011 and 2016. All acquired infections (vaccine preventable infections-VPI included were pneumonia and seasonal influenza and vaccine non-preventable infections-VNPI including opportunistic infections) were noted for each patient, compared to the immunization records, and analyzed for their significance in MG exacerbation.

Results:

The average age of the cohort was 61.9 years, average disease duration 8.8 years, with 95% Caucasian population. A total of 212 flare-ups requiring 106 ED visits, 141 hospitalization, and an average admission for 6 days were noted. Infections were responsible for 34% of all MG exacerbations, 44% of ED visits, 40% of hospital admissions and second longest average duration of a hospital admission (approximately 7 days at total cost of \$11,000-14,000). VPIs were the most common reason for MG exacerbation needing an ED visit and hospitalization-60% whereas only 20%VNPIs needed ED visit and admission. Common VPIs included pneumonia 16.5% and influenza 11%. Two patients had developed infection despite vaccine (both influenza), whereas rest were not immunized. The most common VNPI was an upper respiratory infection at 20%. Older patients (both at the diagnosis and current age) were at an increased risk factor for VPIs ($p<0.05$) but not for VNPI.

Conclusion:

Infections are one of the most common triggers for MG exacerbations and contribute to prolonged admissions and hospital costs. Vaccine preventable infections are a common cause of MG exacerbation in older patients primarily due to lack of immunization.

Assessing Reasons for Delayed Discharge after Cardiac Surgery

Authors: Shan R, Whitman GJR, Schulmeyer R, Brown CH

Institution: David Geffen School of Medicine at UCLA

Presenter(s): MD (rshan@mednet.ucla.edu)

Presentation Time: Friday, 7:30 - 7:39pm; Diplomat B Room

ABSTRACT

Hypothesis: Reducing excessive length of stay after cardiac surgery is critically important for both hospitals and patients. With this goal in mind, a multidisciplinary team has worked to standardize protocols in cardiac surgery with the goal of decreasing length of stay (LOS) at Johns Hopkins Hospital. However, primary reasons for LOS>5 days have been unclear. To better prioritize quality improvement initiatives, we conducted a prospective observational study to identify reasons for prolonged LOS after cardiac surgery.

Methods: Data was collected daily from 6/8/2016 to 8/5/2016 on non-ICU cardiac surgery patients from postoperative day (POD) 4 until discharge. During multidisciplinary rounds, two research assistants collected from advanced practice clinicians the primary (and any secondary) reasons for failure to discharge. The reasons were recorded verbatim and placed into 41 predefined categories. A physician adjudicated any ambiguities.

Results: The primary reasons were available on 123 patients over 418 patient-days. Median age was 63 years (IQR 54-73) and 65% were male. CABG comprised 43% of surgeries. Median LOS was 7 days (IQR 5-10). The top three reasons for failure to discharge by all patient-days were: fluid-overload/oxygenation (25.7%), atrial fibrillation (9.3%), and anticoagulation (8.3%). With longer stay, the importance of fluid-overload/oxygenation diminished relative to other reasons (34.4% on day 1 of data collection vs. 14.4% on day 6 or later of data collection). The proportion of patients with failure to discharge on day 1 of data collection due to fluid-overload/oxygenation significantly differed by procedure (valve [12.2%], CABG/valve [17.1%], other [29.3%], CABG [41.4%], $p=0.02$).

Conclusion: Fluid-overload/oxygenation, atrial fibrillation, and anticoagulation were the most frequent reasons for failure to discharge after POD 4. Three quality improvement efforts have emerged from this data: optimization of diuresis, administration of preoperative amiodarone to prevent atrial fibrillation, and the possible use of novel oral anticoagulants.

The ethical implications of the medical community's failure to integrate Sex and Gender Based Medicine

Authors: Tashjian A

Institution: Albany Medical College

Presenter(s): Amanda Tashjian (tashjia@mail.amc.edu)

Presentation Time: Friday, 8:42 - 8:51pm; Solano Room

ABSTRACT

Case: A 60 year old female presented following an episode of acute chest pain. The patient's pain was preceded by worsening indigestion. The patient stated that she experienced similar symptoms prior to requiring coronary artery bypass grafting five years ago. Despite the patient's presentation, the medical resident argued that she was suitable for discharge on the basis of a negative preliminary workup; however, further workup demonstrated that the patient would ultimately require coronary stents.

Conclusion: Sex and Gender Based Medicine (SGBM) describes the influence of one's genetic makeup (sex) and representation as male or female in accordance with sociocultural constructs (gender) on determinants of health. This field has yet to be fully integrated into the clinical armamentarium, evidenced by the case described. Shortcomings which reduce the discipline's clinical applicability can be identified as: 1) the inappropriate enmeshment of SGBM and Women's Health, 2) the lack of a comprehensive body of knowledge pertaining to SGBM topics, and 3) the failure to adequately integrate SGBM into the medical school curriculum. Each shortcoming reveals ethical concerns and implications as analyzed through feminist bioethics, utilitarianism, and a principle approach, respectively.

Clinical Significance: The derivation of SGBM from the field of Women's Health hinders the complete exploration of the role of sex and gender on disease, which perpetuates the medical community's reliance on the male model as the "norm." In accordance with feminist bioethics, this leads to the continued oppression of women. The lack of a complete body of knowledge results largely from the inadequate inclusion of sex and gender as variables in research, thus failing to maximize utility for all persons. Lastly, inadequately educating future clinicians is a disservice to the students themselves, but also results in unsatisfactory care and undue harm to patients, as described by the principles of beneficence, non-maleficence, and justice.

Discussing Sexual Health with Physicians: The Patient's Perspective

Authors: Thappa S, Lindsay L, Capozzi B, Sahni S

Institution: Touro College of Osteopathic Medicine

Presenter(s): Sarah Thappa (sthappa@student.touro.edu); Laurie Lindsay (Lindsay.laurie@student.touro.edu)

Presentation Time: Friday, 8:33 - 8:42pm; Solano Room

ABSTRACT

Hypothesis: Sexual health is an integral part of one's overall health and wellbeing; however, it can be a sensitive and personal topic. Patients may not feel comfortable speaking about sexual health for a multitude of reasons, not limited to social, educational, or religious reasons. With a multicultural heterogeneous population, we studied the local community of Harlem, NY and their perspectives towards discussing sexual health with their healthcare providers. We sought to better understand the patient-physician relationship in regards to discussing sexual health.

Methods: Osteopathic medical students from TouroCOM Harlem's OB/GYN Student Organization used a 12-question survey of local community member who attended the TouroCOM Fall Health Fair. The survey gathered demographic data including age, sex, race, religion, education and questions about personal feelings towards the patient-physician relation in regards to discussing sexual health. Questions addressed participants' personal feelings and their expectations of physicians in discussing sexual health. Survey data was collected, tabulated and analyzed for statistical significance. IRB approval was obtained for this study.

Results: There were a total of 46 [11 male; 32 female; 3 unanswered] participants with an average age of 52.16 ± 18.02 years. Majority of participants were African American or Hispanic [39/46;84.7%]; of Christian faith [33/46;71.7%]; with a variety of education: 23/46 with high school or less, 21/46 with college or greater. It was found that regardless of age, sex, race, religion or education, participants strongly agreed that sexual health is important to overall health and felt comfortable discussing with their physicians. Majority of participants also strongly agreed that physicians discussed sexual health and practices with them.

Conclusion: Participants, regardless of demographics, reported they strongly agree that their sexual health is important and discussed with their physicians with a level of comfort, departing from the literature. Further larger studies are needed to confirm these findings.

Evidence-Based Institutional Policy Changes to Prevent and Treat Substance Use Disorders in Medical Students

Authors: Voit A, Halbach A, Hall M

Institution: University of Maryland School of Medicine

Presenter(s): Antanina Voit (antanina.voit@som.umaryland.edu)

Presentation Time: Friday, 12:18 - 12:27pm; Embassy Ballroom

ABSTRACT

Hypothesis: The lifetime prevalence of substance use disorders (SUDs) among physicians is 10-12%, and chemical dependency often begins during training. There is almost no recent, comprehensive data on medical student substance abuse. A better understanding of the current magnitude of SUDs among students should lead to increased institutional awareness and prioritization of substance use prevention and treatment.

Methods: We assessed the current prevalence of SUDs and of co-occurring symptoms among trainees in North American medical schools through a systematic review of original research indexed on MEDLINE under the topics of medical student wellness, impairment and drug use. Published documents detailing evidence-based practices for addiction treatment were also reviewed, including those available from Cochrane Reviews and SAMHSA Center for Substance Abuse Treatment.

Results: Medical students report moderate rates of alcoholism and prescription drug abuse, and report high rates of depression, burnout and suicidal ideation. We found that in the United States there are medical schools that do not have explicit policies and procedures for evaluation and treatment of impaired students with SUDs, despite 47 states having Physician Health Programs that advocate for impaired physicians. Unlike licensed physicians, medical students often have no impartial advocates for their recovery and have limited options for recourse against detrimental professional repercussions. We suggest evidence-based institutional policy changes that can improve effective prevention and rehabilitation of addiction in medical students, particularly changes in unethical practices that exist in rehabilitation of SUDs, including lack of uniformity among monitoring standards and punitive responses.

Conclusion: Medical students suffer from SUDs and co-occurring symptoms at rate similar to the general population. Teaching institutions should implement and adhere to evidence-based practices for treatment and prevention for SUDs to prevent and minimize the detrimental consequences of student impairment.

Sex-Specific Outcomes Reported in High-Impact Orthopedic Journals

Authors: Corn K, Mciff T, Mason BS, Templeton K

Institution: Indiana University School of Medicine

Presenter(s): Karsen Corn (karcorn@iu.edu)

Presentation Time: Friday, 7:57 - 8:06pm; Solano Room

ABSTRACT

Hypothesis: In this study, we compare orthopedic journals and analyze their commitment to publishing rotator cuff and knee osteoarthritis research that reports sex-specific outcomes. We hypothesized that specialty journals would report more sex-specific outcomes than general orthopedic journals. We also hypothesized that knee osteoarthritis research would report more sex-specific outcomes than rotator cuff research due to prior knowledge of sex-specific differences in knee osteoarthritis.

Methods: We reviewed four different high-impact orthopedic journals. These journals included the Journal of Bone and Joint Surgery (JBJS), Clinical Orthopaedics and Related Research (CORR), the American Journal of Sports Medicine (AJSM), and the Journal of Arthroplasty (JOA). JBJS and CORR were both searched for rotator cuff and knee osteoarthritis research. As specialty journals, AJSM was searched for rotator cuff, and JOA was searched for knee osteoarthritis research. The first 100 articles per journal per topic were included. If there was any further analysis of sex beyond the statement of how many men and women were included in each experimental group, a study was designated as successfully reporting sex-specific outcomes.

Results: JBJS publishes significantly more articles reporting sex-specific outcomes with research pertaining to knee osteoarthritis than rotator cuff injuries ($p = 0.00009$). In regards to specialty journals, JOA publishes significantly more articles reporting sex-specific outcomes with knee osteoarthritis than AJSM does with rotator cuff injuries ($p = 0.043833$). No other significant differences were found.

Conclusion: Sex-specific outcomes are more widely reported in topic areas where there are already well-known sex-based differences. It is our opinion that sex-specific outcomes should be analyzed across all fields of orthopedics. It is our recommendation that further research is done in this area to include more journals and topics.

Barriers of Reproductive Health During Deployment

Authors: Glavy J

Institution: FAU Charles E. Schmidt College of Medicine

Presenter(s): Jena Glavy (jglavy2014@health.fau.edu)

Presentation Time: Saturday, 9:12 - 9:21am; RM 232 Room

ABSTRACT

Introduction: The deployment setting presents challenges to health care, particularly impacting reproductive health. Women are serving in the Armed Forces at increasing rates. More than 350,000 women are serving, with 97% of reproductive age. This population of women carries a higher unintended pregnancy rate, including during deployment, compared to the general U.S. population. In light of the recent removal of the military's ban on women serving in combat and all military jobs open to women, reproductive health during deployment will require thorough assessment and new policy implementation.

Objective: This abstract reviews current articles and policies regarding reproductive health access among deployed U.S. servicewomen.

Methods: A systematic review of the barriers of health care during deployment was conducted by reviewing current military policies and recent studies and surveys.

Results: Multiple surveys and studies have reported problems with obtaining access, inadequate counseling pre-deployment, and lack of supportive attitudes. One study found that 33% of deployed women could not access the desired contraceptive method, 59% did not discuss options prior to deployment, and 41% had difficulty getting a refill. Basic hygienic needs are often not met, such as limited running water and bathroom facilities. Menstruation places a heavy burden on women in the combat zone. Many women desire menstrual suppression, but few report addressing this issue and are unaware of the possible treatments. Additionally, there is stigma associated with seeking medical care and a lack of female providers in the military was reported as another deterrent.

Conclusion: There is a growing awareness to women's health care during the harsh environments of deployment; however, many issues have not been adequately evaluated and researched. Limited access, knowledge, and support are factors that can be addressed in the future. Increasing pre-deployment education and discussing long-term contraception would be beneficial for women serving their country overseas.

An Evaluation of Cascading Mentorship Through Speed Dating Workshops: A Pilot Study by the American Women's Medical Association at UC Davis School of Medicine

Authors: Clark A, Miller K, Sarma N, Sadovnikova A, Azenkot T, Aminololama-Shakeri S

Institution: UC Davis School of Medicine

Presenter(s): Nandini Sarma (nsarma@ucdavis.edu)

Presentation Time: Saturday, 5:24 - 5:33pm; Diplomat B Room

ABSTRACT

Hypothesis: Women in medicine face many career obstacles, including equal access to opportunities and resources, work-life balance, and unconscious bias. Despite increasing numbers of women in medical schools, compared with men, women in medicine are underrepresented in leadership roles, have lower likelihood of promotion, and are less likely to become professors. Therefore, there is a need for successful women leaders to individually mentor junior faculty, residents, medical students, and undergraduates. This evaluation describes and compares three speed mentoring events using a cascading model planned by the University of California, Davis (UCD) American Medical Women's Association (AMWA) chapter.

Methods: Each event was held at the home of a senior faculty member and focused either on senior faculty mentoring medical students, residents, and junior faculty, or medical students mentoring undergraduate students. Workshops were evaluated via an online survey and focus group feedback. Demographic data from online surveys was summarized using Excel. Qualitative data collected from these two evaluation forums were thematically analyzed and coded.

Results: Overall, 100% of respondents across all career levels found the events to be somewhat or very valuable, and would attend a similar event again. Respondents identified the following aspects of the events to be beneficial: diversity of specialties and career stages; informal, non-campus environment; small group size and large mentor: mentee ratio; mentors who are interested in mentoring; and formalized structure.

Conclusions: This program design is unique in creating an event where networking can occur between multiple levels of career development simultaneously and adds to the current literature around mentorship by combining two models of creating mentoring relationships. This discussion may suggest an effective way for medical schools to encourage mentorship among women at all levels of training.

Women's Leadership Development Program (WLDP)

Authors: Furnari M, Pincus A, Adhikary S, Ager E, Berroth M, Dischinger H, Hedmann M, Huang C, Ing S, Konigsfeld K, Lewis B, Marr M, Munn A, Narayan S, Sutherland P, Priest KC

Institution: Oregon Health & Science University

Presenter(s): Alexandra Pincus (pincus@ohsu.edu); Dr. Megan Furnari (furnari@ohsu.edu)

Presentation Time: Saturday, 8:18 - 8:27am; Embassy Ballroom

ASBTRACT

The Women's Leadership Development Program (WLDP) was co-founded in 2016 by medical students and faculty at Oregon Health & Science University (OHSU) to affirm, empower, and engage the full potential of women medical students. The WLDP curriculum aims to support participants facing the challenge of being women-identified in medicine (e.g., unconscious bias, structurally-ingrained power dynamics, pay discrepancies) while celebrating the unique viewpoints and experiences of participants as they grow from early learners to professionals. The program is comprised of 10 sessions facilitated by OHSU women faculty on the topics of resilience, gender and leadership theory and leadership skill development. Each session incorporates interactive discussions, exercises to promote independent thought and inquiry, and self-discovery. Some lectures are open to all medical students with co-sponsorship from the AMWA student chapter. The OHSU School of Medicine and Medical Society of Metropolitan Portland awarded \$6,000 total to fund this program. The long-term goal is to increase the leadership capacity, diversity, and future success of women physician trainees at OHSU. The 2016 application cycle to the WLDP was highly competitive, resulting in 30 accepted scholars, triple the initial goal. Each participant is part of a small group ("family") to create closer community within the larger cohort setting. The cohort-chosen values include: inclusivity, equity, truth, empowerment, confidence, participation, vulnerability in safe spaces, giving voice to unspoken stories, strength, and ambition. The program has already empowered female students to find their voices and potential for making change happen. Many WLDP participants ran for student government positions and won, the student chapter of AMWA was re-started after several years of latency, and a number of students in the first and second year classes have expressed interest in applying next year.

A Gendered Analysis of Perceptions on Parenthood and Pregnancy During Residency

Authors: Kin C, Desai P, Mueller C

Institution: University of California, Riverside School of Medicine

Presenter(s): Pooja Desai (pooja.desai@medsch.ucr.edu)

Presentation Time: Saturday, 8:54 - 9:03am; Diplomat B Room

ABSTRACT

Hypothesis:

Many medical residents are parents, pregnant, or considering children. We have yet to understand how these evolving social roles impact residents nearing parenthood, and how men and women approach these challenges differently. In this study, we investigate the different anxieties and perspectives felt by men vs. women regarding pregnancy and childbearing during residency, and the underlying drivers of those attitudes.

Methods:

A 69-question survey was administered to 776 residents from 23 specialty programs at Stanford University with a 57% response rate. 265 respondents were female, while 179 were male. Questions were either categorical responses or scaled on a 5-point Likert scale. Responses were analyzed with IBM SPSS using Student T-tests and Chi-Squared tests.

Results:

Male and female residents are equally likely to consider having children or more children (74.16% and 72.73%, respectively). Females, more than males, were the primary caretaker of their children on weeknights ($p=.005$) and relied upon others such as nannies or daycare sources to care for their children during weekdays ($p<.001$). Females were also more concerned about professional perception ($p=.031$) and impact on their future careers should they have children during residency ($p<.001$). They were more concerned about burdening their colleagues with covering their work while taking maternity leave ($p<.001$). In contrast, males, more than females, felt that family leave was unavailable to them ($p=.024$).

Discussion:

Our results suggest that residency programs are being reactive, not proactive, when preparing for their residents to have children. Women, in particular, are affected, despite men and women equally desiring more children. Furthermore, the stress of childbearing during this challenging period does not appear to be assuaged for those who have already had one child. We recommend multiple institutional changes that can help accommodate the inevitability of childbearing during residency, for the well-being of residents and the betterment of patients.

Sex and Gender Based Medicine National Student Survey: An Analysis of Free Text Comments

Authors: Herrmann A, Tashjian A, Ramineni T, Ramakrishnan R, Jenkins M

Institution: Albany Medical College

Presenter(s): Alyssa Herrmann (herrmaa@mail.amc.edu)

Presentation Time: Saturday, 8:18 - 8:27am; Diplomat A Room

ABSTRACT

Hypothesis: Sex and gender based medicine (SGBM) focuses on how the genetic determination of sex and social constructs of gender influence determinants of health. In 2015, a national survey gauging medical students' perception of the inclusion of SGBM in their curriculum was completed. Included in the survey was the option to free text comments. Through analysis of these comments, we sought to determine recurring themes and gather a better understanding of the complex nature of students' perspectives on SGBM.

Methods: An anonymous survey was sent by email to members of five US medical student organizations, yielding 1,097 responses. The survey included yes/no, multiple choice, and graded attitude/awareness questions in addition to space for free-text comments. Comments were reviewed and recurring themes were quantified.

Results: Eighty-nine students left individual comments. 42 of 89 reported that a specific topic may not have yet been covered at their stage of training. 35.7% expressed hope that a given SGBM topic would eventually be covered. 7.9% discussed the need for improved inclusion of LGBTQ topics in the survey and their curriculum. Four students reported the availability of optional SGBM coverage and 2 students reported inclusion of information following specific student inquiry. 4.5% commented that inclusion of SGBM is either unnecessary or detrimental to medical education.

Conclusions: Further analysis of comments elucidated recurring themes, allowing for improved understanding of our original survey results. Many first and second year students were not exposed to or did not recognize coverage of SGBM topics. However, the belief that these topics would be addressed prior to graduation was common. Students' desire to further include LGBTQ topics highlights the need to expand on the influence of gender when discussing this topic. Comments supporting and opposing the inclusion of SGBM gave voice to quantitative data and emphasized students' concerns and areas in need of improvement.

Implementation of an American Medical Women's Association Medical Student Journal Club

Authors: Morris A, van Veen T, Levine D

Institution: Wayne State University School of Medicine

Presenter(s): Alexandra Morris (almorris@med.wayne.edu); Tara van Veen (tvanveen@med.wayne.edu)

Presentation Time: Friday, 7:39 - 7:48pm; RM 232 Room

ABSTRACT

Hypothesis:

Journal clubs in many forms have been implemented at the physician, resident, and medical student level, however there is a lack of information regarding importance and design of a journal club for medical students that is specific to women's health issues and women's advancement in medicine. This research assessed the impact of a women's health journal club delivered to medical students. In medical schools, these discussions could potentially engage students in difficult decisions and prepare us for the challenges of the medical field.

Methods:

The journal club was implemented among the Wayne State University School of Medicine AMWA chapter on a monthly basis. The majority of the participants (20/23) were female and in the M1 or M2 year. Surveys were given before (2 questions) and after (16 questions) the journal club to all the participants. The majority of questions were answered on a scale of 1-5 (1--no knowledge level or strongly disagree and 5--well informed or strongly agree). Article selection focused on the use of SSRI's in pregnancy (9 participants), infertility among female physicians (9 participants), and the impact of gender on physician style (5 participants). Descriptive statistics were used and calculated based on the number of students answering each question.

Results:

Before the journal club, mean knowledge level was 2.56, which increased after the journal club to 4.1. 91% of students were very likely to attend another journal club. Students agreed 4.41 that the journal club will help them discuss difficult decision making with their future patients. 95% of students answered yes to a statement that the journal club inspired them to talk about this topic with people who did not attend or are not in medical school.

Conclusions:

The AMWA journal club successfully engaged medical students in discussions on key issues in women's health.

Influence of Female Orthopaedic Surgery Faculty on Female Residency Applicants

Authors: Munger AM, Heckmann N, McKnight B, Hatch III GF, Omid R

Institution: Keck School of Medicine of the University of Southern California

Presenter(s): Alana Munger (amunger@usc.edu)

Presentation Time: Saturday, 8:27 - 8:36am; Diplomat B Room

ABSTRACT

HYPOTHESIS: Although females now account for almost half of medical students in the U.S., orthopaedic surgery continues to fall behind in its ability to recruit female applicants. Prior research has postulated that a lack of mentoring from female faculty may contribute to this trend. The objective of this study was to determine whether a higher percentage of female faculty correlates with a higher percentage of female applicants to orthopaedic surgery residencies.

METHODS: Data for residents, residency applicants, medical school graduates, and full-time faculty in the U.S. from 2005-06 through 2013-14 was collected from the Accreditation Council for Graduate Medical Education and the Association of American Medical Colleges. A linear regression analysis was used to compare trends between surgical subspecialties and a Spearman rank correlation was used to assess for a correlation between orthopaedic surgery female applicants and orthopaedic surgery faculty members.

RESULTS: A total of 101 U.S. medical schools were included in our final analysis. Females accounted for 48.7% of medical school graduates but only 14.9% of orthopaedic surgery applicants. Females accounted for 13.2% of full-time orthopaedic surgery faculty during this period. Over the period examined, an increase in female applicants was most strongly associated with the percent of orthopaedic surgery female instructors (Rho 0.2042) and female associate professors (Rho 0.2000), and least strongly associated with female assistant professors (Rho 0.1630) and female professors (Rho 0.1259). Over the period examined, all other surgical subspecialties saw a significantly greater increase in female residents compared to orthopaedic surgery.

CONCLUSIONS: Orthopaedic surgery had the smallest increase in female residents over the nine-year period examined. U.S. medical schools with a greater percentage of female orthopaedic surgery faculty members correlated with a greater increase in the percentage of female orthopaedic surgery applicants.

Curricular Redesign of a Health Education Intervention for Women Detained in a Large, Urban Jail

Authors: Tobin G, Richardson E

Institution: Rush Medical College

Presenter(s): Grace Tobin (grace_e_tobin@rush.edu); Emma Richardson (Emma_Richardson2@rush.edu)

Presentation Time: Saturday, 9:03 - 9:12am; Diplomat B Room

The authors jointly received an Arnold P. Gold Summer Fellowship Grant to support this work.

ABSTRACT

Background: Jails are an important interventional target for health promotion and disease prevention within a high-risk population with limited access to health-based education and healthcare in the surrounding community. Compared to the general US population, women who are under correctional supervision have higher rates of prior trauma, mental health conditions, and chronic illnesses.(1-3) Despite these risk factors for poor health outcomes, women report higher barriers to accessing healthcare services.(2)

Intervention and Aims: Rush University health professional students assumed leadership of a health education intervention at Cook County Jail in Chicago, Illinois in January 2016. As the existing curriculum was not well tailored to address the distinct needs of this population, the entire curriculum was redesigned from May to August 2016. The three aims of the redesign were to: (1) provide accessible, actionable, and relevant health information; (2) empower women in their health decision-making; and (3) foster positive interactions between health professional students and women detained in the jail. **Methodology:** A 10-lesson curriculum was designed—including a 75-page facilitator guide for student volunteers and a 35-page booklet for distribution to participants in the jail. New elements were incorporated into existing topics (e.g. pre-conception planning and abortion into the “Family Planning” lesson), and new lesson topics were created (e.g. “Mental Health and Wellness” and “First Aid and Emergency Response”).

Outcomes: The new curriculum has been used to lead 30 sessions, with an average of 29 women participating in each session. Additionally, the curricular materials have been used to train 15 additional student volunteers.

Future Direction: Student volunteers submit participation and curricular feedback data each week through a survey-based instrument to enable iterative revisions of the curriculum. The data collected will be used as part of a future quality improvement assessment.

References:

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3. Maruschak LM, Berzofsky M, Unangst,J. Medical Problems of State and Federal Prisoners and Jail Inmates, 2011–12. U.S. Department of Justice, Bureau of Justice Statistics. Revised 2016.

Gender Differences in the Distribution and Nature of Industry Payments to Physicians

Authors: Tringale KR, Marshall D, Mackey TK, Connor M, Murphy JD, Hattangadi-Gluth JA

Institution: UC San Diego School of Medicine; UC San Diego School of Graduate Education

Presenter(s): Kathryn Tringale (krtringale@ucsd.edu)

Presentation Time: Saturday, 8:45 - 8:54am; RM 237 Room

JHG has research funding from Varian Medical Systems (Palo Alto, CA), unrelated to the current study.

ABSTRACT

Hypothesis

We hypothesized that after controlling for physician and practice characteristics, including specialty, men physicians would be more likely to engage and receive payments from biomedical industry compared to women physicians.

Methods

We conducted a retrospective, population-based study with all allopathic and osteopathic physicians licensed to practice in the United States (National Plan & Provider Enumeration System [NPPES]) linked to 2015 Open Payments reports of industry payments to physicians. Outcomes were compared between genders and across specialty categories (surgery, primary care, medical specialists, medical interventionalists) using univariable and multivariable regression models adjusting for physician and practice characteristics.

Results

In 2015, \$2.4 billion in industry payments were made via 10.2 million transactions to 449,960 physicians. Men surgeons (odds ratio [OR] 1.29, 95% confidence interval [CI] 1.26-1.31, $P < .001$), primary care physicians (OR 1.38, 95% CI 1.36-1.40, $P < .001$), medical specialists (OR 1.15, 95% CI 1.13-1.17, $P < .001$), and medical interventionalists (OR 2.03, 95% CI 1.97-2.10, $P < .001$) were more likely than women within each group to receive general payments. Men interventionalists received 14.4% greater payment value (95% CI 13.6-15.3, $P < .001$) and 1.96 times as many general payments (95% CI 1.90-2.02, $P < .001$) as women. Men in surgical (OR 5.47, 95% CI 4.44-6.74, $P < .001$) and interventional (OR 5.96, 95% CI 2.79-12.66, $P < .001$) specialties were more likely than women to hold ownership interests in biomedical industry. Men in all specialties, including surgery (OR 38.58, 95% CI 22.35-66.60, $P < .001$) and primary care (OR 8.52, 95% CI 3.75-19.37, $P < .001$), were more likely than women to receive royalty and licensing payments.

Conclusions

Across physician specialties, men were more likely than women to have financial ties with industry in 2015. These gender discrepancies may reflect different practice value systems or gender-specific biomedical industry targeting that could influence clinical practice. Gender-biased physician marketing and industry interactions should be closely scrutinized.

Vision Loss Disparities in the United States

Authors: Tsai GJ, Lopez R

Institution: Royal College of Surgeons in Ireland

Presenter(s): Grace Tsai (gracejtsai@gmail.com)

Presentation Time: Saturday, 8:54 - 9:03am; Diplomat A Room

ABSTRACT

Hypothesis:

Vision loss (VL) is a serious public health challenge. More than 3.3 million Americans 40 years or older are legally blind or have low vision. Vision objectives are included in Healthy People 2020, a national disease prevention initiative that identified opportunities to improve the health of all Americans. Addressing VL disparities will help to enhance the quality of eye care in the nation's vision health programs.

Methods:

We used adult participants' data of the National Health and Nutrition Examination Survey (NHANES) during the 1999-2008 cycles to examine the disparities of VL in the US. Vision loss was categorized as uncorrected refractive error (URE) if visual acuity was worse than 20/40 on presentation but improved to 20/40 or better with autorefraction, or visual impairment (VI) if it was worse than 20/40 in the better-seeing eye after autorefraction. Race/ethnicity, educational attainment, working status, nativity/citizenship status, and economic status (poverty-to-income ratio, $PIR < 1$, 1-1.99, 2-3.99, ≥ 4) were categorized based on the survey design. Age- and sex-standardized prevalence (SP) estimates and stratification were presented. All analyses were performed using SAS survey procedures. The mobile examination center weights were used in all analyses; weights for combined cycles were constructed following the NHANES analytic guidelines.

Results:

Based on race/ethnicity, SP of URE (SPURE) and VI (SPVI) were highest among Hispanic (8.4%, 95% CI (CI): 6.9-9.9% and 2.2%, CI: 1.4-3.1%, respectively), whereas they were lowest among non-Hispanic whites (3.8%, CI: 3.4-4.2% and 1.2%, CI: 1.1-1.4%). Based on education, SPURE and SPVI were highest among those with less than a high school education (HS) (7.8%, CI: 6.9-8.6% and 2.4%, CI: 2-2.9%), whereas they were lowest among those with more than HS (3.9%, CI: 3.5-4.4% and 0.82%, CI: 0.66-0.97%). Based on work status, SPURE and SPVI were highest among nonworking participants who were not in the labor force (6.3%, CI: 5.4-7.3% and 2.2%, CI: 1.8-2.5%), whereas they were lowest among working participants (4%, CI: 3.6-4.4% and 0.62%, CI: 0.36-0.88%). Based on immigration status, SPURE and SPVI were highest among non-citizens (10%, CI: 8.1-11.9% and 2.6%, CI: 1.4-3.8%), whereas they were lowest among US natives (4.5%, CI: 4.1-4.8% and 1.4%, CI: 1.2-1.5%). Based on economic status, SPURE and SPVI were highest among those with $PIR < 1$ (9.2%, CI: 8-10.4% and 3%, CI: 2.2-3.9%), whereas it was lowest among those with $PIR \geq 4$ (3.1%, CI: 2.7-3.6% and 0.78%, CI: 0.54-1.02%).

Conclusions:

VL disparities exist in the US. URE and VI were more prevalent among Hispanics, those who were less educated, non-citizens, not in the labor force, and those who had lower income. This suggests a need for interventions to promote better quality vision care among the socioeconomically disadvantaged groups.