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A Patient's Right to Die-- What other options do we have?

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A patient’s right to die/physician assisted suicide remains a controversial topic both in the medical field and in the community at large, especially with recent high profile cases such as the Brittany Maynard case. Hospice & Palliative care physicians not infrequently face requests for hastened deaths from their patients. We describe two cases and discuss the ethical, legal and moral challenges, along with alternative options that can provide comfort and dignity at the end of life.

Cases: Ms A was a 76 yr old female on hospice care with lung cancer which had metastasized to bone and throat. Along with worsening pain, she also felt that she was choking on her secretions. Despite aggressive medical management, she continued to be in distress and pain and asked us to give her medications to help her die. After multiple meetings, a decision was made to pursue palliative sedation (PS). Mr S was a 71 yr old male with renal cell carcinoma, metastasized to brain, lung and liver. He was a retired epidemiologist, who valued his intellect and clear thinking highly. His functional status begun to decline and he was also having problems with word-finding. This distressed him greatly and he voiced wishes to stop all treatments and ‘end it all’. After discussions with his primary care physician and palliative care physician, he requested PS.

Conclusion: Both patients passed away two days after PS was initiated.

Clinical Significance: Palliative sedation can be an alternative for patients requesting hastened death. Palliative sedation differs from euthanasia/ physician assisted suicide based on intent: the intent remains palliation of refractory symptoms rather than hastening death. As clinicians, we may be faced with difficult end-of-life discussions. Understanding the legal, moral and ethical ramifications of the different options is crucial in helping our patients navigate this difficult time.

Post Abortion Care (PAC) in China

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Unintended pregnancy has been a globally challenging issue of public health. In case of China of recent decades, women who undergo induced abortions resulting from unwanted pregnancy not only tend to be younger, but also with higher rate of repeated abortion, which mainly attribute to lack of knowledge and health education on contraception. Starting from 2011, a public welfare program entitled “Caring for love: Post-abortion Care (PAC) Program” was co-initiated by China NGOs such as China Women Development Foundation, and Chinese Society of Family Planning of Chinese Medical Association (CMA) focusing on establishment of good practice PAC clinics among large and medium hospitals throughout China. Standardized post-abortion care procedure is set up and integrated into existing clinical process of induced abortion. To fully make the advantage of professional in setting of hospital, experienced healthcare providers are appointed as PAC counselors to help women and their
family members or partners on contraception. Main roles of PAC counselor includes providing advocacy lecture of induced abortion and its damages to reproductive health at waiting area, and face-to-face counselling on contraception choice and troubleshooting. More importantly, informed choice of a specific contraceptive method be made by most of women and partners to take into use with the help of PAC counselors. Over the past 3 years, this program has been extended to more than 170 prefectural level cities in 30 provinces of China, served more than 1 million abortion women. Moreover, standardized contraception counselling procedure has been established in 486 hospitals, in which the post-abortion immediate usage rate of high-efficacy contraceptives increase to 70-80% in average, meanwhile repeat abortion rate reducing from 40% to less than 10%.

A Culturally Tailored Education Intervention for Korean Seniors Increases Stroke Knowledge

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Poster number: 3

Disclosures: Dr. Vickrey serves on the scientific advisory boards for the Sports Concussion Institute and is a section editor for Stroke. She receives research support from NINDS, the US Veterans Administration Health Services Research and Development Service, UniHealth Foundation, and California Community Foundation, and she is or has recently been a consultant to EMD Serono Canada and Genentech.

Background: Stroke is a leading cause of death in Asian-Americans; stroke risk factor prevalence is higher among elderly Korean-Americans than Caucasians. However, few interventions target stroke recognition and response among Korean seniors.

Methods: An advisory panel of Los Angeles-area Korean-American leaders guided intervention development and ensured its cultural validity. Intervention content addressed unique cultural misperceptions about stroke among Korean elders, based on prior focus group findings. A 1-hour slide presentation on 5 stroke knowledge aspects (risk factors, symptoms, appropriate response, acute treatment time window, and treatments) was delivered by one of two Korean-speaking, non-neurologist health professionals to 257 Korean seniors at 2 adult day health care centers, 1 megachurch, 1 senior center, and 2 public housing facilities. Participants received a tote bag with pictures/messages about risk factors and acute treatment timeframe, and a sheet with key presentation messages. Knowledge was assessed via self-administered surveys prior to (pre-) and immediately after (n=242; post-) the presentation, and at 3 months (n=99). For each of 5 questions, participants chose answers from a list. Repeated measures analysis was used to assess changes in knowledge over time; gender, age, location, and years in US were covariates. Models accounted for missing data.

Results: Mean age=78.4 years; mean years in US=23.8; 63% were female. Knowledge increased from pre- to post-on all five questions (p-values range from p=0.0017 to p0.13).

Conclusions: This culturally-tailored intervention broadly increased stroke knowledge immediately afterwards, with persistent gains for 2 aspects. How to extend the intervention to sustain knowledge gains and whether these changes translate into behavior changes and improved outcomes should be tested.
Utilizing a Community Based Participatory Research framework to establish a Chicago Wide Community Consortium for Understanding Barriers to Calling 911 for Stroke – The CEERIAS Study.

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Poster number: 4

BACKGROUND: Stroke is a time-critical disease, and disproportionately affects minorities and disadvantaged populations, in whom access is more limited, and outcomes worse. Important gaps remain in our understanding of what motivates and prevents stroke patients and their family/friends from using EMS.

OBJECTIVES: We aim to (1) examine personal, community, and cultural barriers to calling 911 for stroke; (2) implement a culturally-adapted stroke awareness and action program using community-health workers (“stroke promoters”) in 2 multi-ethnic communities in Chicago; and (3) assess change in early hospital arrival and EMS use at 2 neighborhood hospitals before and after the community intervention.

METHODS: The Community Engagement for Early Recognition and Immediate Action in Stroke proposal was born out of community and patient observations and testimonials. These included clinical information from ‘home visits’ (conducted by NTA) that revealed poor penetration of the recent Illinois Stroke legislation and policies into minority neighborhoods of Chicago and hospital data that showed low EMS use in minority neighborhoods of Chicago. A Community Outreach Group was formed to monitor trends in EMS utilization in Chicago with representatives from 8 of Chicago’s 15 Primary Stroke Centers and the AHA/ASA. Five town hall events with minority community leaders and health care professionals noted (1) a community mistrust of the health care system; (2) a sense of nihilism that appropriate action or care would “make a difference” and (3) financial concerns about ambulance costs. A Community Advisory Board – comprised of the Chicago Fire Department, Department of Public Health, Consumers Advancing Patient Safety, Center for Faith and Community Health Transformation, Stroke Survivors Empowering Each Other and Chicago Hispanic Health Coalition was formed.

CONCLUSIONS: Full engagement with all stakeholders, including participating in proposal-writing activities occurred, and we were awarded a 3 year federally funded patient centered grant to address stroke disparities in Chicago.

Thank You For Your Service: Analysis of the Medical Services Provided at A Safe Haven’s Veteran “Stand Down” Event on Chicago’s West Side in Support of Homeless Veterans

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Poster number: 5

Background: Illinois is one of seven states with more than 10,000 homeless veterans. Access to health care is a major issue for homeless veterans, especially among those who suffer from mental illness, alcohol and/or substance abuse, or co-occurring disorders. In response to this problem, over 50 veteran-specific social and human service providers from major Chicago health institutions participated in an all-day event, modeled after the Veterans Health
Administration’s regular “Stand Down” series. The event delivered a community-based approach to provide education, outreach, resources, and overall support to homeless veterans.

Methods: The event was held at Douglas Park as part of the annual “Run! To End Homelessness” 5K race. Services included medical/dental screenings, housing, homeless prevention and job counseling, veteran benefits, employment services, mental health providers, housing and emergency shelters, legal services, veteran educational opportunities, free haircuts, and chaplain services. Volunteers served as navigators for each veteran, guiding them through the resource stations.

Results: Nearly 700 veterans attended the event and met with extremely positive feedback. Over 650 of these attendees were male and 35 were female. About 65 public and private organizations participated to provide a wide range of free services for the homeless veterans. The Medical “MASH Unit” provided primary care, podiatry, optometry, and alternative health services. Duffle bags with army surplus items and other in-kind donations were distributed to attendees.

Conclusions: Veterans are at risk for lack of health care and being homeless upon returning to the United States. Homeless veterans need coordinated support that provide secure housing, nutritional meals, basic physical health care, substance abuse care and aftercare, mental health counseling, personal development and empowerment opportunities. The addition of a dedicated medical component to the traditional Stand Down model served to offer veterans a trusted source of much-needed care and to enhance awareness among medical providers of their needs in our immediate neighborhoods.

Stroke awareness among community residents in Chicago

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Poster number: 6

BACKGROUND AND OBJECTIVE: Poor awareness of stroke risk factors and late recognition of stroke symptoms can result in delayed arrival to emergency department (ED) and treatment. We sought to assess stroke-related knowledge in Chicago.

METHODS: This was a cross sectional survey involving 143 respondents. Data on awareness of stroke risk factors, symptoms, and use of 9-1-1 were collected with the aid of a structured questionnaire over 2 months at community-based settings in the Chicago. We compared proportions of responses across age, gender, and ethnicity using appropriate tests.

RESULTS: Respondents ages ranged from 15-75 years, 60% female, 41% whites, 24% African-American, 21% Hispanic and 14% other. Respondents recognized hypertension (93%), family history (88%), and diabetes/obesity (85.3%) as stroke risk factors while reporting weakness (87.4%) and slurred speech (86.7%) as stroke symptoms. Surprisingly, 70% identified chest pain and 63% shortness of breath as stroke symptoms and caffeine use (54%) as a stroke risk factor. Younger respondents (15-18 years) were more likely to believe that chest pain and shortness of breath (p=0.002) were stroke symptoms rather than slurred speech (p= 0.005) despite being more likely to know a person with stroke (p=0.067). Compared with non whites, whites were more likely to consider weakness (p=0.015) and slurred speech (p=0.008) as stroke warning signs and race-ethnicity (p=0.005) and gender (p=0.008) as stroke risk factors. Although 93.4% of the participants responded that they would call 9-1-1 if witnessing a stroke, 23.8%
reported concerns about ambulance charges, 11.2% of being embarrassed, and 8.4% of being taken to “wrong” hospital.

CONCLUSIONS: Despite significant efforts made to increase public awareness about stroke, moderate deficits exist. Future educational programs should consider targeted outreach to younger populations who may live with stroke survivors and minority populations at higher risk for stroke. In addition, financial barriers to calling EMS should be addressed at a public policy level.

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**Sex and Gender Women’s Health Collaborative: A novel resource toward improving medical education and practice.**

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Poster number: 7

NEEDS AND OBJECTIVES: Suboptimal health outcomes for women stem in part from exclusion of incorporation of concepts of sex and gender differences into research, teaching, and medical practice. The Sex and Gender Women’s Health Collaborative (www.sgwhc.org) was founded to assist faculty and students to develop competency in Sex and Gender Based Medicine (SGBM).

SETTINGS AND PARTICIPANTS: SGWHC is led by a multidisciplinary board of academic faculty and nonprofit representatives, including the American Medical Women’s Association. It serves as a resource for SGBM content for researchers and health care professionals, distributes pivotal research information, and facilitates collaboration among individuals and organizations about SGBM.

DESCRIPTION: The SGWHC open-access e-repository of research and educational resources is located at www.sgwhc.org. Examples of resources that are available include a database of clinically relevant SGBM evidence identifying over 200 health topics. SGWHC provides expertise to academic institutions such as providing a peer review process for a nationally available SGBM curriculum (www.texastechsgbm.org) and the Laura W. Bush Institute of Women’s Health CME certificate series (http://laurabush.knowledgedirectweb.com/kd/10.cfm). Members have created teaching tools and case studies which are readily adaptable to medical school curricula. Mayo is working on assessing resident’s knowledge of SGBM topics and piloting curriculum to post-graduate learners. The site hosts a national database of practitioners who have completed applicable CME in SGBM activities. SGWHC (along with AMWA and other non-profit women’s health advocates) is a leader in developing the program for the first national SGBM Medical Education Summit in October, 2015. (www.sgbmeducationsummit.com) SGBM curriculum is currently being peer reviewed and will be piloted at different clinical sites across the country. DISCUSSION: SGWHC offers a comprehensive database accessible to health professionals and educators and serves as a pathway for global dissemination and collaboration in Sex and Gender Based Medicine.
Impact of global Health Interprofessional Medical Teams in Underserved Dominican Republic

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Poster number: 8

In 2005, the community of Peralta, was identified as the initial clinical care site for the Internal Medicine Global Health teams from Rush University (Chicago, Illinois). This determination was based on 6 factors: community need, the existence of strong community leadership and eventually a self-sustaining medical system, relative geographic and political stability, and accessibility and proximity to Chicago. Over the past ten years, 500 participants from specialties such as medicine, pediatric, General and pediatric surgery, ENT, Urology, anesthesia, and nursing as well as medical and nursing students. Cross-specialty teams work for 1 week at a time, providing primary care, public health services, and surgical interventions 5 times per year.

Establishing a strong partnership with the Peralta community was important to creating and maintaining continuity of care. Rush team leaders’ work closely with, Del Camino, a non-profit organization in Peralta to coordinate clinical visits throughout the year. Teams are categorized as primary care and/or surgical and are based on community needs. In the past decade, 700 surgeries were performed successfully. Surgical colleagues in the Dominican Republic provide follow up. This structure provides focus and efficiency for interdisciplinary medical teams to provide care for 800-1000 patients weekly. Medications are dispensed in a 4 month supply. Gaps in care are addressed by local health care workers. As a result of this teams’ successful collaboration they are in the process of developing a locally sustainable public health and primary care program and hope to replicate this model. This partnership has proved to be mutually beneficial through learning and training opportunities for Peralta citizens and students, residents and fellows from Rush University.

Interdisciplinary clinical teams significantly impact the health of a community by creating self-sustainability while educating future health professionals.

Wellness on Wheels – Making Healthy Choices Program: Improving the Health of Rural & Underserved Women in Indiana

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Poster number: 9

Indiana is 41st for overall health and is 45th out of 50 states, for Infant mortality. The 8th most obese state in the nation, Hoosiers pay $3.5 billion a year in obesity-related medical costs. The Indiana University National Center of Excellence in Women's Health (IUNCOE) a program of the IU School of Medicine - Department of OBGYN, seeks to improve the health of rural and underserved Indiana women through our WOW- MCH program by providing cardiovascular disease (CVD) risk reduction and preconception education; comprehensive follow-up and empowering women to make healthy behavior changes to improve their health.

WOW- MHC improves access to care, connecting 70% of those in the program to health resources and improving knowledge (CVD, preconception healthy lifestyle behaviors) by 80%. Providing health coaching and navigation to those with abnormal biometric screenings, over 60 % of participants make a healthy behavior change.

Utilizing a 42-foot bus to reach rural and underserved women, participants receive CVD risk assessments, biometric screenings, CVD risk reduction education, and tools to track their health and progress. Participants with abnormal results or poor lifestyle behaviors are followed up with by the health coach a 1,3 and 6 month intervals.
78% connected to resources
94.2% completely aware of healthy behaviors to improve pregnancy outcomes
85% increase in CVD Knowledge
82.8% are aware of effective contraception methods, including abstinence
97.2% are able to list different options of how they can be physically active
82.1% responded that they received useful resources
65% behavior change

Participants were more likely to make a behavior change when in the follow-up program for at least 3 months. Establishing a relationship with a health coach empowered our participants and the accountability became the motivator for change. WOW-MHC is a program that connects, educates and empowers Hoosier women to adopt healthy lifestyle behaviors.

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**Resident Physician Poster Presentations:**

**A Running Rash – Exercise Induced Urticaria**

Authors: Cathryn Luria, Hannah Kenninger, Theresa Rohr-Kirchgraber, MD  
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Poster number: 10

Physical activity is essential for health, and though injuries associated with exercise are not uncommon and are not usually life threatening, a “rash” that accompanies exercise should be more completely explored.

23 y/o female, PMH of exercise-induced asthma and GERD noticed a rash and intense itching when walking/running more than a mile for the last 2-3 years. The rash starts as pruritus on her thighs and spreads to her lower legs and trunk and resolves 20-30 minutes after exercise. It is associated with worsening asthma symptoms but no throat tightness, tongue swelling, or gastrointestinal symptoms. She had not previously experienced these symptoms when playing ice hockey in high school. Diphenhydramine taken after exercise has been tried but it is unclear if it helps. The rash has never been present when being seen by the physician, but she brings pictures in with her that appear urticarial. She wonders if she should continue exercising.

Exercise-induced urticaria, or cholinergic urticaria, is the presentation of hives after the onset of exercise. Hives may begin within six minutes after the onset of exercise. This reaction can also occur from passive increase in core body temperature related to fever or emotional stress. Beginning on the trunk and spreading to the extremities, the urticarial rash may be accompanied by bronchospasm. Resolving within 2-4 hours after the onset of symptoms, the exact mechanism of the reaction is not known. Histamine release, mast-cell activation, and exaggerated cholinergic response to body warming have been proposed as potential causes. Anti-histamines and reduction of exercise intensity may reduce symptoms. Unlike exercise-induced anaphylaxis, cholinergic urticaria is not generally associated with vascular collapse or laryngeal edema. Cholinergic urticaria is much more common than exercise-induced anaphylaxis. Exercise should not be curtailed and antihistamines and a beta-agonist before exercise may be helpful.
A Case of a Spontaneous Live Unilateral Twin Tubal Ectopic Pregnancy

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BACKGROUND: With increasing use of assisted reproductive technology, the rate of multiple gestations has been increasing and as such the incidence of twin ectopic pregnancy. The live twin tubal ectopic without use of infertility treatment is rare, complicating an estimated 1 in 125,000 pregnancies. In the literature there are only an estimated 100 case reports.

CASE: In this case report we present our own case of a patient with a spontaneous, live, unilateral, twin tubal ectopic pregnancy who presented with one of the highest recorded serum β-HCG levels, 53,847 mIU/ml. Ultrasound demonstrated two fetal poles, both with cardiac activity and the patient underwent surgical management.

CONCLUSION: In an era of increasing multiple pregnancies and use of β-HCG levels in determining the presence of a viable pregnancy, it is important to “always think ectopic” to expedite detection and treatment of this rare but dangerous diagnosis.

We Need to Do More, Be More: AMWA Resident Division Membership Survey

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Hypothesis: The AMWA Resident Division (AMWA-RD) has steadily grown over the past three years. However, there has not been a detailed assessment of how the division can further benefit its members. The purpose of this study is to evaluate the utility of the resident division and suggestions for improvement.

Methods: We prepared a cross-sectional survey via surveymonkey.com that included questions on demographics, interest in joining or establishing a local chapter, level of activity in AMWA, and suggestions on additional services.

Results: We received thirty three responses. Most responders were either in their first or second year (34% for both). 54% were Caucasian; 48% were single. Half were AMWA members for 1-4 years with 31% being members for 5-9 years; 72% of participants were not part of a local chapter with 28% stated that they do not have a local chapter; 30% stated they were interested in establishing a local chapter. 31% stated that being an AMWA resident member adds to their level of experience/satisfaction during residency/fellowship. For topics that were important to participants, 91% wanted topics on negotiation skills; 88% on career opportunities and obstacles; 78% on work-life balance, work-life policies, and networking skills; 66% on gender discrimination; and 53% on race/cultural discrimination and measuring life stressors. Most common suggestions for the centennial AMWA meeting included resident-oriented sessions on leadership opportunities, resident meet & greet function, a how-to-guide on starting a local resident chapter, and possible funding of new chapters.

Conclusion: The percentage of members interested in cultivating local chapters and potential for improvement in the division are significant. AMWA-RD has new direction in terms of growth and benefits to our members. With these improvements, we aim to see a larger presence of residents and fellows at annual meetings and general participation in AMWA.
Let's do the twist: A case of small bowel volvulus after dancing

Authors: Kathryn Meyer, Ashley Grigsby, Julie Welch  
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Poster number: 13

Case: Here we present a case of a 25-year-old female with primary small bowel volvulus discovered on diagnostic laparoscopy. The patient presented to the emergency department with acute abdominal pain after dancing with friends. Patient complained of severe abdominal pain and was unable to get comfortable; abdominal exam revealed a thin flat abdomen with diffuse tenderness and guarding. Patient smelled of alcohol and marijuana, but denied all other drug use. Concern for bowel ischemia secondary to illicit drugs was suspected. Abdominal CT with IV contrast was performed which demonstrated abrupt venous tapering of a portion of small bowel concerning for vascular compromise. Surgery was consulted and a diagnostic laparoscopy was performed to determine the source of vascular compromise, which revealed a portion of small bowel rotated 360 degrees on its long axis. This was reduced and blood flow was restored to the affected bowel precluding need for resection. The patient recovered well in the hospital and was discharged home without complications.

Conclusions: In conclusion, although uncommon, it is important to consider small bowel volvulus in the differential for patients presenting with signs of mechanical obstruction or mesenteric vascular compromise.

Clinical Significance: Small bowel volvulus is a rare but serious cause of small bowel obstruction. Most cases of small bowel volvulus in adults are caused by congenital abnormalities such as malrotation or can be secondary to post-surgical complications such as adhesion bands. Although our patient had previous abdominal surgeries, no adhesion bands were identified as the cause of her volvulus, nor did she exhibit any signs of malrotation. In the management of small bowel volvulus, early recognition and reduction are needed to relieve obstruction and maintain viability of the affected portion of bowel.

Hemoperitoneum in Twin Gestation

Authors: Dr. Giovanni Jubiz, Elizabeth Jerome MD, Dr. Renee Haynes  
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Poster number: 14

Case

Patient was a 31 year old female G2P0010, 33 weeks 6 days gestational age admitted with a chief complaint of severe abdominal pain and distention. Pregnancy was established via in vitro fertilization. Initially the pregnancy was with triplets, however five months prior to presentation she developed a right ectopic pregnancy. She had an uncomplicated laparoscopic right salpingectomy performed. The other two viable fetuses remained in utero. Patient was followed at a high risk obstetrics clinic and was hospitalized three weeks prior secondary to contractions. She was started on Procardia and missed several doses.

On admission, she complained of contractions every 6-7 minutes. Fetal heart tracing for both infants were category one. A biophysical profile showed living twin gestations, posterior placenta without evidence of abruption and biophysical profile 4/8 for both twins. An epidural was placed. Later that night, patient developed hypovolemic shock. Her blood pressured dipped as low as 72/45 and there was deterioration of the fetal heart tracing (category 3). Patient was prepared for an emergent c-section. There was a delivery of 2 viable fetuses, and she was found to have a hemoperitoneum. Approximately 3L of blood were found in the peritoneum cavity.
Conclusions
The clinical presentation of hemoperitoneum is nonspecific with abdominal pain, hypovolemia and signs of distress on fetal heart tracing being common. The greatest aid to determining a case of hemoperitoneum during pregnancy is clinical suspicion, followed by adequate monitoring (the yield of imaging is low, ultrasound provides the greatest likelihood of discovery).

Clinical significance
This case of spontaneous hemoperitoneum is important because it can contribute to high mortality with postpartum hemorrhage. During pregnancy, placental perfusion is mainly from uterine and ovarian arteries. There is hypertrophy of blood supply to uterus. Therefore the patient must be closely supervised by her physician to decrease morbidity and mortality.

Ovarian Cystadenoma In A Trafficked Patient

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Poster number: 15

CASE: An 18-year-old girl was referred to Adolescent Medicine for recurrent, severe abdominal pain over 1.5 years for which she had received care at a local emergency department and her pediatrician’s office. Pelvic ultrasound revealed a 9.0 x 5.3 cm multiloculated cystic adnexal mass abutting the left ovary. Testing revealed infection with multiple STDs. The patient disclosed sexarche at 13-years-old, an "estimated 150" sexual partners, prior suicide attempt, former heroin addiction and overdoses, abuse by her father, and 4 years of being trafficked for sex. She had been seen periodically by multiple health workers from age 12 years but had not disclosed the extent of her sexual or drug history prior to this visit. She voiced fear of addiction relapse with post-operative narcotic pain management and strongly preferred surgery at the children’s hospital with Adolescent Medicine specialists involved in her post-op care. After treatment for STIs, and after a brief loss to follow-up due to homelessness, the patient returned for laparoscopic reduction of torsed paraovarian mass with resection. The surgical team removed a cystic mass at the left adnexa, and ovary was preserved intact. Post-op, the patient reported pain well-controlled by ON-Q catheter. Pathology showed a 67 g, 7.9 x 6.1 x 3.1 cm partially collapsed lobulated cyst consistent with benign serous cystadenoma of the ovary. The patient was linked into social services at the initial Adolescent Medicine encounter and is currently working on her GED.

CONCLUSIONS: This case illustrates common warning signs for sex trafficking in youth who present to the medical setting for routine and/or delayed treatment of acute and chronic disease processes.

CLINICAL SIGNIFICANCE: Recognition of the warning signs of sex trafficking is critical to effectively intervening on behalf of these patients.
A Novel Universal Donor Frozen Fecal Microbiota Transplant Pilot Study in Pediatrics

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Jersey Poster number: 16

Hypothesis:
Recurrent Clostridium difficile infection (CDI) is a serious cause of morbidity in pediatrics. Oral Vancomycin, the current standard of care, fails 1/3 of patients, who develop relapses due to a perturbed bacterial milieu in the gut. Fecal Microbiota Transplant (FMT) is a promising therapy with over 90% efficacy in the literature whereby stool microbiota from a healthy donor is transplanted into a CDI patient to correct this dysbiosis. Due to logistical burden, technical inexperience, and lack of a standardized protocol for pediatrics, however, few pediatric centers perform FMT.

Our team established a novel frozen universal donor protocol which we hypothesize will streamline this process by carefully selecting a donor and keeping frozen ready-to-use transplant material on hand with no loss in efficacy.

Methods:
We perform a pilot observational prospective cohort study with a translational component using 16s nucleic acid microbiota sequencing. In the first phase, a universal microbiota donor was selected after screening donors from our Palo Alto and Boston-based teams. The samples were assessed for superiority by evaluating markers of gut health (butyrate concentration, Firmicutes/Bacteroides ratio, and overall bacterial diversity) and selecting the superior donor. In the second phase, which is currently underway, patients are undergoing FMT via colonoscopic introduction with microbiota sequencing pre- and post-transplant with the primary endpoint being recurrence-free resolution of CDI during the 10 week follow up period.

Results:
We will describe our experience between February and April 2015. The diversity of the microbiota will be quantified using Simpson’s Reciprocal Index of diversity for descriptive statistics and the rates of recurrence-free resolution will be reported.

Conclusions:
We expect that this novel form of FMT will have similar efficacy to the 90% rate reported in the literature and that this novel protocol will be feasible and allow increased breadth of our clinical practice going forward.

Resident Physician Oral Presentations:

The Beginnings of Something New: The AMWA Diversity and Inclusion Section Development Project

Authors: Vanessa al Rashida, Neelum T. Aggarwal, MD
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Background: The American Medical Women’s Association (AMWA) has been in existence for nearly 100 years. As the organization grew to over 8000 members, there was a parallel growth in the diversity of its membership. The goal of the Diversity and Inclusion (D&I) Section - formed during the 99th Annual Meeting – is to enhance the quality of life and the well-being of AMWA’s physicians, residents, medical and pre-medical students by raising
awareness of relevant issues in the racial/ethnic, military/VA, and LGBTQIA realm in order to remain integral, vibrant and contributing members of their medical communities. Because little information regarding needs specific to D&I issues existed, a membership wide needs assessment was undertaken.

Methods: We created a structured, cross-sectional survey via surveymonkey.com through weekly Newsflash emails to AMWA members. Questions included demographic information, past and present involvement in AMWA, and potential services that the D&I Section could provide through its Racial and Ethnic, Military/VA, and LGBTQIA subcommittees.

Results: Seventy-three people participated in the survey. The majority of responders were between 18-29 years (28.8%); 83.6% were heterosexual, 16.4% were from the LGBTQIA community; 67.1% were Caucasian; 45.2% spoke another language besides English; and 72.6% were current AMWA members. The D&I subcommittees could support members by connecting individuals to organizations doing similar work (47.9%), provide information about health/social issues within each subcommittee (49.3%), and help locate resources relevant to D&I issues in their community (45%). Reasons for joining the D&I Section were: keeping current with health issues relevant to D&I (62.7%), networking with others involved in women’s health and diversity issues (47.8%), and wanting to receive and/or disseminate information relevant to women’s health (44.78%).

Conclusion: There is significant potential for the D&I Section to implement services and benefits to its members, regardless of their background. This will help grow the organization.

The Obesity Epidemic: Taking the extra step towards making a change

Authors: Amanda Velazquez, Christina Tabit, Theresa M. Rohr-Kirchgraber, MD
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Identifying depression among obese adolescents is critical as there is a known association between these conditions. In a patient burdened by depression, the identification and treatment of the depression should be the first step in the management.

Case: 14 y/o obese Hispanic female w/ hx anemia and obesity, presented for vaccinations. Patient had no new concerns but her mother was concerned for the patient’s “constant fatigue, incessant napping, and unwillingness to get up in the morning to go to school.” Discussing lifestyle habits, she was embarrassed and withdrawn and appeared apathetic in creating weight loss goals. Confidentially, she tearfully disclosed feelings of depression, sadness and admitted to physical and verbal abuse as a child. She agreed to start treatment with medication and therapy to slowly incorporate lifestyle management strategies for weight loss with participation of her family.

Conclusions: There are numerous factors to consider for adolescents attempting weight loss, however, tackling these obstacles is inconceivable to a patient when burdened by depression. Treatment of depression is fundamental to making a step forward in lifestyle management of obesity.

Clinical Significance: In the last 30 years in the U.S., obesity has quadrupled among adolescents. Notably, Mexican-American and non-Hispanic black adolescent girls are disproportionately affected by obesity. Obese children and adolescents are more likely to be obese adults and with that comes the known increased risk of health complications such as cardiovascular disease, type 2 Diabetes, stroke, numerous cancers and osteoarthritis. The time is now to prevent the health decline of today’s young generation and one step in doing so is recognizing and addressing the barriers to weight loss, importantly, depression. The confidential interview is recommended to begin with all
patients aged 12+ and can be essential in exploring potential confounding problems, like depression, abuse, and sexual activity.

An Unusual Pelvic Mass in a Pediatric Patient

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Case:
Neurofibromatosis type 1 (NF-1, von Recklinghausen disease) is a genetic disorder (1 in 3500 live births) characterized by multiple café au lait spots, axillary and inguinal freckling, dermal neurofibromas and iris hamartomas (Lisch nodules). NF-1 is the result of a genetic mutation of neurofibromin 1, which results in the loss of inhibition of the Ras oncogene. The loss of the tumor suppressor effect of neurofibromin 1 is responsible for the range of pathological presentations of NF-1. This case describes a pelvic mass in a male pediatric patient with NF-1 who was seen by his pediatrician for one week of indolent abdominal pain and hematuria. Clinical assessment, laboratory, and imaging studies suggested a pelvic mass that potentially involved the bladder. Diagnostic laparoscopy demonstrated a mass in an omphalomesenteric remnant, which was resected and removed through a Pfannenstiel incision. Histological assessment yielded the identification of a gastrointestinal stromal tumor (GIST). Two years later the patient remains disease free of further intra-abdominal neoplasms.

Conclusions:
Pelvic masses are difficult to diagnose with clinical correlation, imaging, and laboratory studies alone. Diagnostic laparoscopy performed by a pediatric surgeon in a multi-institutional setting continues to be a powerful method for the efficient and safe evaluation of pediatric pelvic masses.

Clinical Significance:
NF-1, GIST and Meckel’s diverticulum are well known entities in isolation. This is the first case of all three disease processes in a pediatric patient, which may portend metachronous tumors. Multi-disciplinary management continues to be an important factor for excellent outcomes in rare pediatric disease processes.

Are They Too Old for Surgery? Safety of Elective Cholecystectomy in Nonagenarians

Authors: Busayo Irojah, Vanita Ahuja MD, MPH
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Introduction: Cholecystectomy is the most common general surgery procedure in patients over the age of 65. By 2050, it is estimated 2.0% of the population will be over 90. The purpose of this study is to assess the mortality of elective cholecystectomy in nonagenarians.

Methods: Using the ACS NSQIP database, a retrospective analysis of 1017 nonagenarians who underwent elective laparoscopic and open cholecystectomy between 2005 and 2012 was performed.
Results: A total of 1017 nonagenarians underwent elective cholecystectomy between 2005 and 2012. Two hundred twenty two (22%) of these were open and 795 (78%) were laparoscopic. The number of cholecystectomies increased by 800% over the study period. The overall mortality was 5.6%; significantly less for laparoscopic group (3.8% vs 12.2%; p<0.001). Although the mortality decreased over the study period (open 33.3% to 10%, laparoscopic 5 to 2.7%), it was not statistically significant. The median length of stay for open cholecystectomy was 9 days compared to 5 days for laparoscopic (p<0.001).

Conclusion: Cholecystectomy in nonagenarians has a high mortality. Hence preoperative optimization and adequate postoperative care is essential. The mortality and length of stay for laparoscopic procedures was significantly lower than for open procedures. We recommend that a laparoscopic procedure should be attempted in all patients and the threshold for conversion to an open procedure should be high.

Student Poster Presentations:

Gender Equality in Healthcare: A Diversity Education Series Focusing on Health Disparities in Women

Authors: Dena Abuelroos, Emman Dabaja, Stephanie Jurva, MSA, Kimberly Martin, MBA, Caryn Reed-Hendon, PhD, Stephanie Swanberg, Raymond Y. Yeow
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Poster Number: 17

Fostering diversity, cross-cultural capacity, and gender equality in medical students is vital, especially in today’s diverse society. Medical schools must produce culturally competent, compassionate physicians who can recognize and care for patients from diverse backgrounds, including female patients in relation to their race, ethnicity, socioeconomic status, age, religion and literacy level. It is just as important for faculty and staff to support students and nurture this diverse appreciation. A unique extracurricular programming series was developed spanning the first two years of undergraduate medical education to raise awareness of local health care disparities and provide community involvement opportunities for students, faculty and staff. This series was connected to the M1 and M2 curriculum and was also linked to national health observances or related university occasions. The events, in the form of a dialogue, focused on gestational diabetes, heart health, faith in medicine, and adolescent sexual health. A program evaluation survey was sent out after each session to the participants to reflect on how they will apply the knowledge in their practice as future physicians. Survey results indicated positive feedback from participants. Students commented on the relevancy and enlightening experience of the dialogue. Most medical school curricula have separate programs or weave elements of diversity and cultural competence into the pre-clerkship or clerkship years as outlined by national standards. Dialogues act as a medium to recognize diversity and gender issues, as well as health care disparities in the clinic and surrounding community. This successful series can be adapted to any curriculum to help nurture cultural competence for students, faculty and staff of any medical school community.
Overseeing the ovaries: Managing Systemic Lupus Erythematosus in a young woman

Authors: Amalia S. Lehmann BS, Julia F. Taylor MD, Theresa Rohr-Kirchgraber MD, Erin Vilano MD
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Poster Number: 18

Case: A 15 year-old female with a family history of Systemic Lupus Erythematosus (SLE) presented with 10 weeks of menorrhagia following her first Depo-provera injection. Lab evaluation revealed thrombocytopenia and anemia. She was also found to be hypertensive and tachycardic with an increased serum BUN/CR ratio. She was initially treated with hydralazine. She returned with continued menorrhagia along with edema, vomiting, malar rash and severe hypertension. Given her constellation of symptoms and positive ANA and lupus anticoagulant, she was diagnosed with juvenile SLE. Patient’s treatment plan includes cyclophosphamide and Lupron for menstrual suppression and ovarian protection.

Conclusions: This case demonstrates challenges managing disease progression while preserving fertility in a post-pubertal adolescent female treated with a gonadotoxic agent. Often in newly diagnosed SLE, therapy initiation is urgent and diagnosis is overwhelming. These factors and contraindications to hormonal treatments make many fertility sparing measures, such as cryopreservation, unavailable. According to ASCO 2013 guidelines GnRH agonists, such as Lupron, are not ideal to protect ovarian function but can be considered in emergency situations and can prevent menorrhagia and anemia. Female patients treated during reproductive years should be counseled on all fertility sparing options.

Clinical Significance: SLE is a devastating lifelong autoimmune disease affecting most organ systems. With diagnostic and therapeutic advances, survival has improved significantly making quality of life and long term side effects of increasing concern. Difficulties arise because both the disease itself and available therapies may cause organ dysfunction and undesirable side effects. Alkylating agents, like cyclophosphamide, are efficacious in treating life threatening rheumatic conditions, such as lupus nephritis, but have a well-established significant risk of premature ovarian failure, with rates as high as 50%. As SLE is most prevalent in young women, with a female-male ratio of 9:1 during child-bearing years, reproductive health is of particular concern.

Achy Breaky Heart: Fact or Fiction?

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Poster Number: 19

Stress induced cardiomyopathy, Takotsubo cardiomyopathy, apical ballooning syndrome, and “broken heart syndrome” are synonymous for a potentially fatal heart condition in which 80 to 100% of cases are in women aged 61-76. Weakening of the heart muscle wall is caused by acute physical stress, medical illness or, as its name suggests, extreme emotional stress such as the death of a loved one. Complications include acute heart failure, cardiogenic shock, LVOT obstruction, ventricular arrhythmia, ventricular rupture, and death. Physicians must suspect the diagnosis of stress-induced cardiomyopathy in order to avoid unnecessary fatal outcomes.

A 52 yo ♀ presents with SOB, chest pain, abdominal pain, and diarrhea. Her EKG indicated possible ischemic injury. The patient received an echocardiogram, during which the diagnosis of stress induced cardiomyopathy was made. Contributing factors at the time of diagnosis were emotional stress and pain. Subsequently the patient developed acute congestive heart failure with an ejection fraction of 25-35%. Fluid overload and hypertension were treated with furosemide and carvedilol and the symptoms resolved rapidly. Patient was discharged with appropriate
medications and referred to psychiatry for treatment of anxiety. Subsequent echocardiogram 18 days post discharge revealed an ejection fraction of 65-70% and resolution of the apical ballooning. Since discharge, the patient has not had a recurrence of the cardiomyopathy.

The majority of patients with stress induced CM are post-menopausal♀. Knowing the signs and symptoms of the diagnosis are imperative to instituting rapid and proper treatment to prevent life threatening outcomes. Continued monitoring is recommended as the recurrence rate is ~10%. The typical co morbid conditions for heart disease, HTN, Obesity, and Diabetes, may not be present with this stress induced cardiomyopathy and made lead some providers astray. Heart disease varies by gender and we must be aware of the unique features of heart disease in women.

A Stroke of Bad Luck: CVA in the Pediatric Population

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Case:
A 17-year-old black female with a past medical history significant for migraines of 8 years' duration initially presented to an urgent care center after the onset of left hand weakness and tingling. She had started experiencing difficulty gripping with her left hand and felt as if the arm was “hanging,” prompting her to seek care. Medications at that time included Topamax, ibuprofen as needed for headaches, and OCPs initiated three months prior. After evaluation, she was discharged without imaging with instructions to continue her current regimen.

The following day, she awoke with a right-sided frontal headache. Her sister then noticed she had left facial weakness with an asymmetric smile and inability to raise her left eyebrow. She went the ED, where an MRI revealed “focal areas of acute to subacute infarct/ischemia involving the right corona radiata and right frontal lobe.” A stroke workup for hypercoagulopathy revealed she is a compound heterozygote for the MTHFR A1298C and C677T gene variants, and folic acid supplementation was initiated.

Conclusions:
This case demonstrates the importance of considering stroke in the differential diagnosis for all patients presenting with focal neurologic deficits, regardless of age. Each year, over 795,000 people in the U.S. suffer from a cerebral vascular accident. Although the majority of affected individuals are over age 65, strokes can and do occur at all ages. In 2009, 34 percent of all stroke-induced hospitalizations were among people under age 65, with the risk of childhood stroke from birth through age 18 approximately 11 per 100,000.

Clinical Significance:
Stroke remains among the top 10 causes of death in children. Early recognition and treatment of strokes in the pediatric population is an important means of reducing morbidity and mortality.
Dying of a Broken Heart? Recurrent Takotsubo Cardiomyopathy

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Case: 57 year old female with a PMHx of atrial fibrillation s/p ablation, anxiety, and Takotsubo presented to the ED with palpitations and chest discomfort following a stressful event. Electrocardiogram showed sinus tachycardia of 128 and non-specific ST/T-wave changes in the lateral leads. Her blood pressure was 135/86. Antiarrhythmic agent reduced her HR to 106 and SBP to 90. Thirty minutes later the patient went into cardiogenic shock with a SBP of 35 by Doppler. Repeat electrocardiogram was unchanged. Troponin was 2.49. A CT scan of the chest showed no PE and bedside echocardiogram revealed basal and apical wall akinesis consistent with Takotsubo. The patient underwent an emergency cardiac catheterization demonstrating no coronary artery thrombus and an EF<25%. An aortic balloon pump was placed for support. The patient fully recovered and was discharged from the hospital within a week.

Conclusions:
The case represents recurrent Takotsubo cardiomyopathy which occurs in about 10% of patients with this disease. Although factors contributing to recurrence are unknown, it should be considered in post-menopausal women with cardiogenic shock and a history of Takotsubo.

Clinical Significance:
Takotsubo is a non-ischemic cardiomyopathy most commonly seen in post-menopausal women and accounts for 1-2% of suspected ACS. Takotsubo should be considered in the diagnosis of suspected anxiety attacks accompanied by ACS in this demographic, especially when onset is preceded by a stressful situation. The mechanism of Takotsubo is unknown but hypotheses include catecholamine excess, coronary artery spasm, and estrogen deficiency. Treatment with inotropes should be avoided. Patients presenting with Takotsubo have an excellent prognosis with 95% recovery rate. While medical treatment is necessary for addressing acute symptoms, lifestyle changes such as learning to cope with stress are crucial in preventing future attacks.

Barbie® even influences the blind! How a blind woman developed an Eating Disorder

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Eating disorders develop from a multitude of causes surrounding body image and how individuals perceive their physical body compared to deviations of their body to the “ideal physique.” The development of an ED is thought to develop from irrational thoughts, unrealistic expectations, and incorrect explanations. Several case reports of patients with blindness and EDs reported blindness preceding the EDs. Due to these documented situations, it can be concluded that visual exposure to one’s body is not necessary for the development of an ED.

Our patient is a 26 year old blind female who was diagnosed with an eating disorder (lowest BMI 15.8). The patient has been blind since birth and feels that her blindness has played a role in her body image disturbance. As she does not know what she looks like and is not able to visually compare herself to others, she used the contours of her Barbie doll as a guide for the ideal body. Our patient feels the need to lose weight just to make sure she looks...
appropriate since she doesn’t know what she looks like. In addition to feeling constant pressure to educate and make others feel comfortable about her blindness she is recovering from sexual, verbal and emotional abuse from her father.

Vision is not necessary for assessing one’s body and the blind are able to palpate body parts, bony prominences and skin folds relying on other sensory aspects in attempts to cultivate body image with a lack of corrective visual feedback to challenge perceptual distortions. Barbie® is an aspirational role model because of her thinness (her proportions are physically impossible for humans to attain) and beauty but also because of her depicted success. These exaggerated accomplishments can have both positive and negative effects on girls later in life. For our patient, her ideal body image was formed by her interaction with her Barbie® as well as worsened by her history of abuse.

Allergic contact dermatitis after using Prineo: Case Report and Review of Literature
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Poster Number: 23

Case:
The patient presented with erythema and pruritus around her incisions after a tissue expander to implant exchange of the left breast. She previously had a mastopexy for breast cancer. A review of reported allergies to medications and medications used during surgery did not reveal a possible cause for the rash other than the octyl-2-cyanoacrylate. All medications used in the second procedure were the same as those used in the first procedure. The patient was told to take Benadryl but only experienced mild relief. Only after removal of the octyl-2-cyanoacrylate did the patient experience complete abatement of her symptoms. The patient now lists octyl-2-cyanoacrylate to her allergies.

Conclusions:
This manuscript presents the rare complication of allergic contact dermatitis caused by using liquid adhesives during the closure of long incisions that has not been extensively documented in the literature. Octyl-2-cyanoacrylate is one example of a liquid adhesive used to close long wounds. Allergic contact dermatitis generally results upon second exposure to this adhesive. Patients who have had prior surgery that was sealed with a liquid adhesive should be monitored and counseled appropriately if they present with an erythematous rash around the incision sites. This report highlights a common immune mechanism of pruritic rash that is invaluable to the medical student.

Clinical Significance:
Today’s surgeon must be aware of the possibility of adverse immunologic reactions when using liquid adhesives. The long chain structure of current liquid adhesives make it less likely to cause allergic reaction since less formaldehyde is made upon its breakdown, but it must be included in the differential diagnosis. This possibility should be discussed with patients who have been previously exposed to octyl-2-cyanoacrylate.
Catastrophic Combinations: Suboxone, Benzodiazepines, and Alcohol

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Case: A 22-year-old male with a history of polysubstance abuse presented to the ED via EMS with altered mental status secondary to ingestion. Patient was found cyanotic with agonal respirations. His condition rapidly reversed with 1.2 mg of naloxone. Upon questioning, patient admitted to ingesting a combination of alcohol, alprazolam (Xanax®), and sublingual buprenorphine/naloxone (Suboxone®). Review of systems proved unremarkable with the exception of left-sided hearing loss. Patient was alert and oriented upon admission with tachycardia, hyperglycemia, urine positive for opiates, and an elevated ethanol level. He was admitted on observational status in the PCU per poison control and discharged 23 hours later. His recovery was uneventful aside from intermittent somnolent periods with slurred speech and a combative demeanor. No further naloxone was needed throughout the duration of his stay.

Conclusions: While buprenorphine overdose has been well-documented within the medical literature, there is little information regarding the consequences of abusing buprenorphine in combination with naloxone. Our case adds to this limited knowledge base to demonstrate that buprenorphine/naloxone, in combination with alcohol and benzodiazepines, may potentiate similar characteristics to severe opioid overdose including profound, rapid respiratory depression or arrest and temporary hearing loss. It is important for clinicians to recognize this potential for abuse, as there are several small differences that should be noted from established opioid overdose guidelines.

Lastly, it is important in special populations, specifically pregnancy, for the physician to have an open dialogue regarding this medication’s use.

Clinical Significance: Since its US introduction in 2002, buprenorphine/naloxone, a combination therapy used in the treatment of opioid dependence, has increased significantly. In 2013, there were 2.1 million ambulatory treatment visits related to buprenorphine, 90% of which involved buprenorphine/naloxone specifically. With this increasing incidence, it is important for clinicians to better understand this drug to appropriately manage a growing population of patients.

An Intracranial Petri Dish? Formation of abscess in a prior large stroke after decompressive hemicraniectomy

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Case:
Development of brain abscess following an infarction is a rare clinical condition. There have been 11 cases in the literature. Because of this uncommon complication following stroke, many patients were treated with potent antibiotics only and did not survive. We present two cases in which patients received aggressive surgical resection of brain abscess and survived. The analysis in the literature confirmed our finding that surgical intervention of brain abscess in post-stroke patients offers the most benefit.

A 58 year old male was transferred to our institution with left hemiparesis, hemisensory loss, neglect, and hemianopsia. CTA demonstrated large volume right hemispheric infarct. He underwent decompressive hemicraniectomy but developed fevers and swollen fontanelle 6 weeks later that did not improve with antibiotics.
MRI demonstrated progression of ring-enhancement of the old infarct and abscess formation was suspected. In this case, patient was then taken for resection of the infarcted brain tissue involved. The patient’s consciousness was also improved and was discharged with antibiotics treatment. The patient subsequently underwent cranioplasty with synthetic bone graft with no complications.

In another case, a 42 year old female was admitted to our institution with aphasia and weakness on the right side. CTA showed left MCA territory infarction and decompressive hemispheric craniectomy was performed. Patient recovered well but a brain abscess was suspected during a routine pre-operative CT before cranioplasty. Similarly, the suspected abscess was resected surgically and culture of abscess grew Pantoea agglomerans and Bacillus macerans. The patient underwent cranioplasty one month later and remained in good condition.

Conclusion:
Intracranial abscess is a rare but reported complication of stroke. However, if not treated properly and timely, the abscess could lead to fatal outcomes. It is imperative for clinicians to be aware of the possibility of abscess formation following an infarction so as to make the correct diagnosis in a timely fashion. Radiographs, particularly a ring-enhancing hyperdense lesion on diffusion weighted MRI or a ring-enhancing hypodense lesion on CT reflects the presence of an abscess.

Clinical Significance:
The literature review as well as our own case presentations suggest that treating the abscess with the conservative antibiotics was usually not enough; instead, the aggressive surgical resection of the abscess with antibiotics treatment following surgery offered the best outcome for patients.

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**Breaking Burn: Characterizing Burn Injuries Resulting from Methamphetamine Production**

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Poster Number: 26

Introduction: Increased fascination with illicit methamphetamine (MA) has led to a concomitant increase in MA production and abuse. MA producers often present with burn injuries that require extensive treatment. This research discusses the unique burn presentation and injury patterns seen at a major burn and trauma center due to MA explosions, thereby providing insight to this public health threat and economic burden.

Methods: This case-control study provides a retrospective analysis of records from patients with MA burns at the University of Rochester Medical Center over a 36-month period. Patients included sustained MA explosion burns and were treated in the stated period. Data-points included demographics, polysubstance usage, comorbidities, burn characteristics, intubation needs, procedural needs, graft qualities, hospital days, hospital charges, and physician reimbursement. MA explosion burns were compared to a control group based on TBSA.

Results: Our burn database analysis identified ten confirmed MA burn patients. This study found a significant difference between MA burn patients and the control for the following variables: polysubstance usage, inhalational injuries, number of procedures, length of stay, employment status, commercial insurance rate, cost of treatment, and primary physician reimbursement.

Conclusions: MA burn patients commonly present with inhalational injuries, upper extremity and facial burns, higher procedural requirements, prolonged LOS, low rates of employment and commercial insurance, and higher treatment costs. This high-risk community lacks counseling and attention from medical professionals. To address
this public health issue, further studies regarding treatment and preventative interventions for MA producers are recommended.

Applicability of Research to Practice: This abstract discusses the unique presentation and injury patterns seen in MAP burn patients and outlines effective treatment strategies, providing insight to this novel public health threat.

Global health challenges & patient advocacy initiatives: Eradication of avoidable blindness at a charitable secondary-care eye hospital in rural Bihar, India

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Blindness persists as a major global health issue, especially in developing countries. India carries an estimated one-fifth of the global blindness burden, encompassing cases which are largely avoidable (preventable or curable). Charitable eye hospitals operating with resource-limited infrastructures are at the forefront of restoring vision to high volumes of the most impoverished and illiterate. Netra Jyoti Seva Mandiram (NJSM) in rural Bihar is a secondary-care eye institution serving proximal districts of 160km radius. Through efficiency-maximizing, streamlined process logistics of care delivery, NJSM is able to examine 300-500 patients and perform 50-70 operations per day. 65% of the patient population is female. This analysis, conducted in the four-month period (10/14-1/15), aims to assess how NJSM combats avoidable blindness and identify challenges that can be addressed through patient advocacy measures. We will focus on the major causes of avoidable blindness: corneal opacity (preventable) and cataract (curable). To evaluate prevention of corneal opacity, our focal patient populations will include patients with (i) xerophthalmia and (ii) corneal ulceration. Xerophthalmia cases will be staged by the WHO classification, noting reversible, keratomalacia and complicated cases. Corneal ulcer cases will be stratified by type, extent of corneal involvement, and reported contraindicated steroid use. To assess treatment of cataract, we will compare phacoemulsification versus small incision cataract surgery (SICS), describing patient gender distribution, frequency, efficiency, cataract stage and type, complication rates and visual outcomes. Results from this study will be used to propel patient advocacy initiatives focusing on education, resource mobilization, infrastructure optimization and public health measures.

Cervical Cancer Screening in Perinatally Infected HIV+ Adolescents and Young Women

Authors: Dr. Karla Maguire, Anam Khaja, Dr. Jorge Garcia, Dr. JoNell Potter, Lunthita Duthely, Nelly Mendez-Diaz, Lindsay Smith, Barbara Messick
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Study Objective: To examine cervical screening outcomes among perinatally HIV-infected adolescents and young women to determine the incidence of abnormal results and pathology.

Design: A retrospective medical record review was conducted among a cohort of perinatally HIV-infected adolescents and young women, ages 13-24, who were followed for gynecological care between 2007 and 2013 at a university-affiliated pediatric infectious disease clinic. Patient demographics, HIV medical history, reproductive variables, Papanicolaou (Pap) smear testing and cytology results were selected for descriptive analysis.
Results: Among 60 patient records reviewed, the mean age at first Pap was 18.3 years (SD 2.2, range 13.3-23.1). Fifty-three percent (32) of these first Pap results were normal, while 15% (9) showed Atypical Cells of Undetermined Significance (ASCUS), 31% (18) Low Grade Squamous Intraepithelial Lesions (LSIL), and 2% (1) High Grade Squamous Intraepithelial Lesions (HSIL). The patient with the HSIL result at first Pap had a colposcopy result of cervical intraepithelial neoplasia grade one (CIN 1), which cleared to ASCUS over three years. One patient with a normal first Pap was HSIL on her follow-up Pap four years later. On follow-up colposcopy procedure, results showed CIN 2; however, the patient declined having a loop electrosurgical excision procedure (LEEP). Her most recent Pap smear result was LSIL.

Conclusions: Pap smear testing was conducted among sexually active, perinatally-infected adolescents at an earlier age than is recommended for the general population, as guidelines suggest that HIV-infected adolescents should start cervical cancer screening within one year of onset of sexual debut. The vast majority of these Pap tests, however, were normal or low-grade. While there is limited data on screening perinatally-infected young women, this study suggests that cervical cancer screening among this population could follow general screening guidelines beginning with Pap testing at age 21.

Implementation of a Sustainable Patient Education Program in a Student-Run Free Clinic

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Poster Number: 29

Hypothesis: The University of Miami Mitchell Wolfson Sr. Department of Community Service San Juan Bosco Clinic (SJB) is a weekly, student-run free clinic that provides medical care to an uninsured population in Miami-Dade County. Concurrent with national trends, the SJB patient population has a high prevalence of diabetes, dyslipidemia, and hypertension – health issues that benefit from patient education and counseling. Unfortunately, due to high patient volume, there is often insufficient time during the patient’s clinical encounter to provide comprehensive and effective patient education.

Methods: In order to address this issue, a sustainable patient education model that takes advantage of the considerable time patients spend in the waiting room of the SJB clinic was created. This model brings in medical student volunteers to provide patient-education consults focused on evidence-based recommendations on diabetes, hypertension, dyslipidemia, nutrition and physical activity. The emphasis of our education is on disease pathology and the role of lifestyle modification, and the sessions are designed to mitigate barriers presented by the variable levels of patient literacy. In order to ensure active participation, the patient is encouraged to set a goal at each consult, and their progress is monitored at future visits.

Results: Thus far, the model has been implemented during internal medicine clinic nights. The program is being assessed with a survey that evaluates patient learning and satisfaction. The results demonstrate that patients find high value in the education sessions. Analysis of how many patients achieve their goals is forthcoming as more patients are seen in follow-up visits. In the coming year, the program will be expanded to include additional sub-specialty clinic nights.

Conclusions: The waiting room consult model offers an effective and sustainable strategy to provide patient education in a high-volume, limited-resource walk-in clinic setting and allows students to gain invaluable experience in patient counseling and education.
Vitamin D and Multiple Sclerosis: Important for People of Color, Too?

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Background: Multiple sclerosis (MS) is an immune-mediated disease that often strikes young, healthy women. In MS, the body’s pro-inflammatory T-helper (Th) cells destroy myelin surrounding CNS neurons. Neurological symptoms including weakness, paresthesia, and ataxia are associated with the inflammation and subsequent demyelination. Epidemiological data suggest that the incidence of MS increases with distance from the equator. Populations near the sunny equator have increased biosynthesis of vitamin D, which is an important regulator of immune responses and is known to inhibit the proliferation of Th cells. Evidence shows that higher serum 25-OH vitamin D levels correlate with decreased incidence of MS.

Case: A 20-year-old black female presented with a 5-day history of right-sided numbness, hand weakness, facial droop, dizziness, and diplopia. On neurological exam, the patient had ataxia and impaired right-sided sensation. MRI revealed demyelinating lesions involving the cerebral hemispheres, brainstem, and cervical and thoracic spinal cord. MS was confirmed by CSF findings, and treatment with corticosteroids was helpful.

In the preceding eighteen months, this patient had reported intermittent paresthesia, weakness, dizziness, and vision changes to her physician. Her symptoms were attributed to orthostatic hypotension. At that time, she was found to be vitamin D deficient, and she proved non-compliant with supplementation. At the time of her MS diagnosis, her serum 25-OH vitamin D level was essentially unchanged.

Discussion: MS is marked by episodes of CNS dysfunction separated in space and time, and symptoms can be vague. Diagnosis by history alone is sometimes difficult, and careful examination, imaging, and laboratory testing are necessary. Our discussion will focus on the earliest symptoms of this patient, as well as the role of vitamin D in MS, a correlation that has been established in Caucasian populations but has been more difficult to prove in people of color.

Not Your Ordinary Headache: Delayed Diagnosis of Herpes Simplex Encephalitis

Authors: Leighe Lincoln, Sasha Wee
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Case:
A thirty year old woman presented to the emergency department with a fever and intermittent headache for three days. CT scans done during that time were normal and she showed no neurological deficits. She declined a lumbar puncture, and was sent home on amoxicillin and ondansetron. Two days later she was found unresponsive and was admitted to the ICU. On admission, she was started on acyclovir. MRI showed diffusion restriction in the right temporal lobe and insula. EEG showed subclinical seizures in the right temporal lobe. CSF PCR was positive for HSV-1. Her clinical course was complicated by intubation, continued altered mental status, aspiration pneumonia, and difficulty with speech and swallowing. She was transferred to a rehabilitation ward to continue her recovery.

Conclusions:
In a patient with clinical symptoms of HSE, normal brain imaging, and no focal neurological signs, empirical
treatment with acyclovir should be started promptly, and may be discontinued once HSE has been ruled out. Even
with treatment, neurological sequelae remain common, affecting 44-62% of survivors. However, delay in treatment
leads to higher morbidity and mortality. Thus, a heightened index of suspicion is needed if infectious encephalitis is
on the differential.

Clinical Significance:
Herpes simplex encephalitis (HSE) is the most frequent cause of sporadic fatal encephalitis in adults. 90% of cases
are due to HSV-1 with the remainder due to HSV-2. Although the incidence of HSE in the general population is
low, without treatment, mortality reaches 70%. The diagnostic use of CSF PCR, as well as treatment with acyclovir,
has greatly reduced mortality to 9-11%. This case study highlights the challenges in early diagnosis of HSE. HSE
often presents with nonspecific symptoms, such as fever, headache, altered mental status, focal neurological signs,
and seizures. Lumbar puncture is essential for diagnosis.

The Development of a Cardiology-Cognitive Clinic at the Rush Heart Center for Women

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Poster Number: 32

Background: Multidisciplinary clinics providing comprehensive heart care to women are becoming increasingly
popular. We report on the design of a new clinic at the Rush Heart Center for Women (RHCW).
Objective: The Cardiology-Cognitive Clinic aims to collaborate with experts from specialized fields, including
cardiology, cognitive neurology, nutrition, and dietetics, to deliver personalized cardiological care to female
outpatients.

Methods: In 2010, RHCW pledged to continue providing comprehensive patient care by introducing cognitive
screenings. Subsequently, 150 patients were asked to complete a survey to assess the level of interest in participating
in such studies.

Completed forms were returned by 120 patients; 83 patients (89% female; 56 Caucasian, 20 African American, 3
Asian/Pacific Islander, 4 no response) reported an interest in being contacted for future studies, most of whom were
50–59 or 60–69 years old. Thus far, 18 persons have been contacted. They completed a brief survey and are under
evaluation for clinical trial eligibility.

Further, 40 patients underwent cognitive and neurological evaluation, including questions on difficulty in (1)
recalling brief conversations/lists, (2) remembering how to perform a task, (3) identifying words, (4) maintaining
orientation, (5) paying attention, and (6) controlling mood. Cognitive screening was performed to detect cognitive
impairment or dysfunction. Of the contacted RHCW patients, 25% exhibited mild cognitive impairment. The
findings were communicated to the patients and their RHCW counterparts in real-time collaboration, to discuss
management strategies and/or clinical trial participation.

Conclusions: The Cardiology-Cognitive Clinic is a new multidisciplinary model for heart risk management and
optimal brain health preservation. By providing cognitive screening and cardiac evaluation, it focuses on
maintaining cognitive function, preventing stroke, and improving the quality of life by following a healthy lifestyle.
The current prevalence of cognitive impairment is not negligible, and further longitudinal assessment is required to characterize such impairment and its sequelae.

Please don't tell my mom. Treatment of minors: Their rights and our obligations

Authors: Ashley Narsinghani, Lindsey Taylor, MD, Theresa Rohr-Kirchgraber, MD
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Poster Number: 33

Patient confidentiality in the treatment of minors is a controversial topic that has stirred many debates. Rules and laws regarding treatment of minors have been established both at the federal and state levels, though exceptions and loop-holes have left both patients and physicians confused.

16 year old female and her mother presented with two episodes of dizziness and fainting at school within the past week and was evaluated by a resident physician. Confidentially, the patient denied current or recent sexual intercourse. Urine pregnancy test was obtained however, and was positive. The positive results were revealed to the patient confidentially. The patient was encouraged to reveal the pregnancy, either herself or via physician, to her mother while in the office. The patient requested that the results not yet be revealed to her mother until she was able to speak with her boyfriend. The resident reported patient's request to staff physician, and the staff physician insisted that the patient's mother be told in the office before discharge. Ultimately, the resident physician told the patient's mother the pregnancy results against the patient's request.

Unfortunately, minors are generally unaware of their rights to consult with or seek treatment from medical professionals on a confidential basis. Likewise, physicians and health professionals are under-educated about when they may provide services to teens absent of parental knowledge and/or consent. Specifically, many are uncertain what to do in cases of pregnancy, abortion, and STD treatment. In some states, physicians have the option to inform parents their child is seeking services related to sexual health care, substance abuse, and mental health care. The decision of informing the parents is left to the physicians’ discretion and what he or she considers to be in the best interest of the minor or necessary for the minor's health.

Type 2 Myocardial Infarction: Post Cataract Surgery- A Case Report

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Poster Number: 34

Case:
A 75-year-old female presented to the emergency department with chest tightness and progressive dyspnea, 3 hours after cataract surgery. She had prior cataract surgery 1 week ago without complications. However, during the second cataract surgery, she had increased intraocular pressure and was given multiple eyedrops, including a combination drop, brimonidine tartrate 0.2%/timolol maleate 0.5%. A half hour after the procedure, she started to not “feel quite right”. She has a history of severe asthma, well controlled on medication, and Raynaud’s phenomenon, with no recent episodes. This episode did not feel like a typical asthma exacerbation. She tried her at home nebulizer without any resolve of symptoms, at that time she presented to the ED. After further work up with EKG, transthoracic echocardiogram, and left heart catheterization, it was determined she had a type 2 myocardial infarction likely due to coronary spasm caused by her combination timolol and brimonidine ophthalmic solution.
Conclusions:
This patient had a type 2 MI due to the combination ophthalmic solution given during her cataract surgery. Though other drops were given, after further information it was determined the only new drop during the current cataract surgery was the combination drop. All other drops had been given at previous surgery with no reactions. The coronary spasm was likely not due to either drug alone, however, the combination therapy with unopposed agonism was the likely cause of this type 2 MI.

Clinical significance:
This case is presented to report the development of type 2 MI after the use of combination timolol/brimonidine ophthalmic solution. It will hopefully serve as a warning and reminder of the importance of careful risk and benefit analysis prior to prescribing or administering ophthalmic solutions. Also presented is a list of ways to administer eye drops to decrease risk of systemic reactions to ophthalmic solutions.

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Gender Assignment in Mixed Gonadal Dysgenesis

Authors: Rebecca Gerber, Katherine Hubert MD, MPH, Mark Cain MD
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Poster Number: 35

Case Description: An infant born at 33 weeks gestation, a product of twin delivery with in-utero fertilization, presented with ambiguous genitalia in the first day of life. The child exhibited labioscrotal fusion, enlarged phallus and severely hypospadiac urethral meatus, and no palpable gonads. Pelvic ultrasound indicated the presence of a uterus with no identifiable gonads. The patient’s karyotype was 45,X/46,XY. Given the patient’s ambiguous phallic structure and lack of gonads the child was preliminarily assigned a female gender. Upon return to clinic at 3 months of age the patient had an elevated testosterone level (88ng/dL), as well as an increase in phallic size and a palpable gonad in the left hemi-scrotum. MRI confirmed a normal appearing uterus and the appearance of a normal testicle in the left groin. After multidisciplinary evaluation by endocrinology and urology, the patient was reassigned a male gender due to the presence of a left testicle, increased testosterone level and phallic growth. Surgical reconstruction at 11 months of age included staged hypospadias repair and scrotoplasty, left orchiopexy, hysterectomy and right streak gonadectomy.

Conclusions: This patient presented with 45,X/46,XY germline mosaicism, the most common karyotype found in patients with mixed gonadal dysgenesis. The infant was initially assigned a female gender due to ambiguous genitalia and presence of a uterus with no identifiable gonads. By 3 months of age, however, the left testicle descended into the scrotum and the patient’s testosterone levels were sufficient for some development of male secondary sex characteristics. This led to the reassignment to male gender.

Clinical Significance: This case demonstrates the importance of flexibility in the timing of gender assignment in patients with disorders of sexual differentiation. Although some parents may prefer early gender assignment and surgical intervention, the gender assignment may change depending upon changes in clinical findings as the child matures.
A Horse in Zebra’s Clothing: A Case Study of Hemoptysis

Authors: Rachel Thies, Maria DeGuzman-David, M.D.
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Hemoptysis describes the expectoration of blood from beneath the vocal cords. The initial evaluation often involves ruling out Mycobacterium tuberculosis, but there are many other causes of hemoptysis. Ms. G, a 71-year-old female presented with chief complaint of intermittent hemoptysis for 18 years. She had a well-detailed history of each occurrence and diagnostic studies performed. She noted the hemoptysis commenced after working to restore an old farmhouse in 1998. Her past medical history was significant for a positive PPD and 12 months of isoniazid treatment in 1976. She had a right mastectomy in 1979. Prior to breast cancer, she had a history of 13-pack year smoking and second hand exposure from her former husband. After her divorce she have an episode of rheumatoid arthritis (RA) in her hands with subsequent immunosuppressive therapy. She denies any RA symptoms at present except occasional right hip pain. She was advised to pursue right hip replacement, but has at present been able to treat with ibuprofen. She denies dyspnea or cough except during which she will expectorate approximately 15mL of blood 2-6 times per year. Other history includes hyperlipidemia and coronary artery disease. Her current medications include lipid lowering agents, vitamins, and ibuprofen. In the past, bronchoscopy and chest computed tomography have been indeterminate. After initial consult, infectious disease was involved and QuantiFERON® TB Gold was positive. Pulmonology was consulted and repeat computed tomography did reveal fibrotic change in the lung. Pulmonology has confirmed this is a case of a rare extra articular manifestation of RA in which Ms. G suffers occasional bronchiectasis and hemoptysis. Rheumatoid arthritis is a common condition affecting over 1 million Americans, which has many extra articular manifestations. This was a classic example of how seemingly common condition can masquerade the “horse” as a “zebra”.

Pictorial Essay: Second Twin or Molar Pregnancy? Progression of a Uterine Mass in Early Pregnancy

Authors: Irene Tsung BS/MS, Bharathi Muthusamy BS, Chemen M. Tate MD
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Background: The hydatidiform mole or molar pregnancy is defined by abnormal trophoblastic proliferation. Molar pregnancies occur when one or two sperm fertilize a normal oocyte or an oocyte without DNA. Therefore, they can consist of two sets of paternal DNA and no maternal DNA, in the case of a complete mole, or two sets of paternal DNA and one set of maternal DNA, in the case of a partial mole. Without the utilization of early ultrasound, patients often present clinically with heavy vaginal bleeding due to extensive proliferation of abnormal trophoblastic tissue. Clinicians rely on ultrasonography to show a characteristic “snowstorm appearance” or cystic spaces spread throughout the uterine cavity. With the more routine use of ultrasound in early pregnancy, molar pregnancies are increasingly being diagnosed at earlier stages and can be misinterpreted as missed or incomplete abortions or multifetal pregnancies due to a lack of characteristic findings.

Case: We present a 27-year-old G2P0010 woman who presented at 6 gestational weeks with vaginal spotting, cramping, and back aches. 2D sonography, obtained for first trimester bleeding, initially follows the embryonic demise of a 6 week intrauterine pregnancy in the presence of a complex fundal mass. The initial differential diagnosis of the mass included subchorionic hemorrhage, submucosal fibroid, and debris from inevitable abortion. However, subsequent images show the development of a gestational sac, yolk sac, and possible fetal pole from the uterine mass.
Conclusions: Based on pathologic findings, final images, higher than normal HCG levels, and large tissue volume at uterine evacuation, an early-stage, nonhydropic, partial molar pregnancy was assumed.

Clinical Significance: Molar pregnancy can be misdiagnosed early in pregnancy due to the absence of classical imaging findings. The presented case demonstrates the importance of considering molar pregnancy in the setting of unidentified uterine masses early in pregnancy.

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**Potential barriers to inflammatory bowel disease education visits for newly diagnosed pediatric patients**

Authors: Analise Peleggi, George Russell, MD, MS; Jessica Kerr, MPH; Carlie Arbaugh, BS; Frederique Verly, BA; Tracee Saslowsky, PNP; Susan Dybowski, CPNP; Janis Arnold, MA, LICSW; Lori Hartigan, RN; Leslie Higuchi, MD, MPH

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Poster Number: 38

Inflammatory bowel disease (IBD) education visits at Boston Children’s Hospital (BCH) are clinical encounters at the main campus during which newly diagnosed patients are provided with information about disease pathophysiology, anticipatory guidance, and community resources.

Hypothesis: A percentage of newly diagnosed IBD patients did not receive an IBD education visit. Patients with education visits will differ from those without visits in certain patient, clinic, and care experience factors.

Methods: We identified patients diagnosed at BCH between September 2012 and December 2013 and determined who had a documented IBD education visit. Age at diagnosis, sex, primary language, disease type, primary IBD provider, primary IBD clinic, IBD-related hospitalizations, IBD family history, home zip code, and insurance type were collected from the electronic medical record. Chi Square, Fisher Exact, and Chi Square Exact tests were used when appropriate, with \( p \leq 0.05 \) significance.

Results: Of 111 patients who met inclusion criteria, 59 (53%) were male and median age at diagnosis was 14 years (IQR: 11, 17). Seventy-three patients (66%) had a documented IBD education visit. Of these, 75% completed their visit within 25 days of diagnosis (median: 14 days). Patients diagnosed in January, February, or March had a lower percentage of education visit delivery compared to those diagnosed in other months (\( p=0.05 \)). Patients with public insurance coverage were more likely to receive a visit compared to those with exclusively commercial coverage (83% vs. 61%, \( p=0.04 \)). Comparing patients with visits vs. those without, there were no significant differences in other examined factors.

Conclusions: Sixty-six percent of newly diagnosed IBD patients received education visits, with 75% completing their visit within one month of diagnosis. Patients diagnosed in January, February, or March had a lower rate of education visit completion. Patients with at least one public insurance provider were more likely to receive an IBD education visit.
**The Effect of Rectal Irrigation on Successful Feeding in Patients with Gastroschisis**

Authors: Kelsey Koch, Sarah A. Jones-Sapienza, M.D., FACS  
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Poster Number: 39

**Introduction:** Delayed intestinal motility in gastroschisis patients post surgical closure leads to longer hospitalizations in the NICU. Our clinical observations suggested that rectal stimulation in the form of rectal irrigation increases intestinal motility and leads to shorter periods between closure surgery and successful initiation of feeding, thereby shortening hospital stays.

**Methods:** All patients born with gastroschisis between 1/1/2009 and 4/30/2014 and treated at Sanford Children’s Specialty Hospital, a community hospital in Sioux Falls, SD, were enrolled in a retrospective study. Data regarding day of life (DOL) at which abdominal closure was performed, DOL rectal irrigation began and ended, DOL contrast enema was performed, DOL feeding was successfully initiated and total attempts at feedings was collected. Patients who underwent rectal irrigation or contrast enemas were compared to patients who did not have any form of rectal stimulation.

**Results:** 38 patients born with gastroschisis were evaluated and categorized based on whether rectal stimulation had occurred in the form of rectal irrigation or an enema. The DOL to successful feeding were plotted as a histogram and fit with a gamma distribution. Of the participants, 84% received rectal stimulation while 16% did not receive any rectal stimulation. It is predicted that 90% of patients who do not receive rectal stimulation would have a successful feeding by day 20 (CI 95%, P>0.250) compared to DOL 36 (CI 95%, P=0.008) if rectal stimulation occurs. A linear regression model was used to determine 34% of the patients underwent additional surgeries beyond the primary closure with results showing that for every surgery performed, the days of life to feeding increase by 7.96 (P=0.0005).

**Conclusion:** There is a significant increase in the time to successful feeding in patients whom require additional closure surgeries. There is also an increase in time to feeding in patients in whom rectal stimulation is performed. It should be noted that stimulation in the form of an enema or irrigation was used to look for anatomical problems or to stimulate intestinal motility if feeding was taking longer than anticipated.

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**Longitudinal Ophthalmology Care in the Indigent Population – Familial History Considerations**

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Poster Number: 40

**Case:** Glaucoma damages the optic nerve and can cause irreversible blindness. Many factors can increase a patient’s risk for glaucoma, most importantly age, black race, family history, and elevated intraocular pressure. Our patient, a 55-year-old African American female with a family history of glaucoma, was seen at an income-restricted free community health clinic for her 8-year-history of hypertension. She had not had an eye exam in over 12 years and was referred to a free ophthalmology clinic in Norfolk, VA. Although she had several risk factors, including a first-degree relative with the disease, our patient was completely uneducated about her risk and unaware that glaucoma is a familial disease. During her exam, the patient’s intraocular pressure was measured at 23 mmHg OD and 21 mmHg OS, making her a glaucoma suspect needing further evaluation.
Conclusions: Our patient is at significantly increased risk; however, she was unaware due to lack of education and care in her community. In addition to risks presented by family history and age, her race is a large factor; one population-based study found the age-adjusted rate of glaucoma in blacks was 6.6 times that in whites, and that blindness occurred ten years earlier. This case illustrates that proper education and access to care is vital in detecting degenerative diseases such as glaucoma. Patients with familial history necessitate greater attention.

Clinical Significance: Norfolk, VA is one of many communities with unique needs, with 18.2% of the population, 58% of whom are black, living in poverty. At onset of glaucoma symptoms, irreversible damage to the optic nerve has already occurred, making early detection a primary concern. Detection is significantly harder in populations with little healthcare education and limited access to ophthalmology services due to lack of insurance and free services. Special attention needs to be allocated to these areas.

Panels, Plays and Projects: Increasing awareness of women’s unique health care needs among future health care providers

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Poster Number: 41

Background

The role of women in medicine, as both patients and healthcare providers, is constantly evolving. During the last decade, scientific consensus and medical knowledge has expanded to recognize women’s distinct anatomical and physiologic status. Women’s risks of acquiring diseases, their social exposures, and how diseases may manifest differ from men. Therefore, healthcare providers should receive training that highlights women’s specific health care needs. We propose that this exposure can begin in the medical school setting via activities sponsored by branches of the American Medical Women’s Association.

Methods

The AMWA branch at Rush University partners with doctors and community organizations to educate future health care providers on topics of women’s health such as breast cancer, pelvic floor health, domestic violence, and eating disorders. In particular, Rush AMWA’s productions of “The Vagina Monologues” serve to increase awareness regarding the patient experience and issues of sexual health in the community. Rush AMWA events also facilitate mentorship opportunities with women leaders and women in underrepresented specialties by hosting networking dinners and inviting mentors to speak on panels. Rush AMWA has supported local community organizations with shared goals through fundraisers and service projects.

Conclusions

Rush AMWA’s events and activities have fostered interest and increased awareness of women’s health issues amongst the student body of Rush University demonstrated by student attendance and student event evaluations. Through robust fundraising efforts for local community organizations Rush AMWA has demonstrated its continued commitment to the health and wellness of women in the Chicagoland area. And finally, by providing opportunities for mentorship and networking our organization has contributed to the future success of young female leaders in the
healthcare field. Through these events and activities Rush AMWA has accomplished its goal of increasing awareness of women’s specific health care needs in future health care providers.

The Role of Hyperglycemia and Diabetes on Clinical Outcomes After Thermal Injury

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Poster Number: 42

Hypothesis: The proinflammatory and hypermetabolic state post-burn injury results in hyperglycemia. Admission hyperglycemia is associated with negative outcomes in burns. We evaluated the impact of hyperglycemia, with or without diabetes, on outcomes post-burn. We hypothesize hyperglycemia is associated with increased mortality post-burns regardless of diabetes status.

Methods: A retrospective review of patients ≥20 yrs admitted to the burn center from 2008-2013 was conducted (n=1048). After excluding non-thermal injuries (n=139) and transfers from an outside facility (n=417), 492 patients were analyzed. Diabetes was coded based on presence in clinical notes. Hyperglycemia was defined as admission glucose ≥150 mg/dl. Patients were classified into the following groups for analysis: no hyperglycemia without diabetes (–H,-D), no hyperglycemia with diabetes (-H,+D), hyperglycemia without diabetes (+H,-D), hyperglycemia with diabetes (+H,+D). Outcomes were in-patient mortality, hospital length of stay (LOS) and discharge status. Parametric data are represented as mean±standard deviation and non-parametric data as median(interquartile range). Univariate and multivariate analysis using logistic regression models were performed, as appropriate.

Results: Diabetics were significantly older than non-diabetics (-H,+D=60.68±14.08 and +H,+D=55.81±14.77 vs – H,-D=44.94±15.89). Total body surface area burn (TBSA) was different between +H,-D vs –H,-D [17.25(19.00) vs 7.13(9.00), p=0.001] but not between the other groups. There was no difference between sex, race, inhalation injury, or obesity between groups. On univariate analysis, hyperglycemia with or without diabetes and diabetes without hyperglycemia resulted in higher mortality compared to those without either risk factor. Hyperglycemia with or without diabetes was associated with longer LOS and decreased likelihood of being discharged home. On binary logistic regression with TBSA, age, diabetes, hyperglycemia, obesity, race and gender as covariates, only age, TBSA, and diabetes were significant predictors of mortality (Area under ROC = 0.932).

Conclusions: Hyperglycemia and diabetes are associated with worse outcomes after burns but the interplay between the two is not fully understood.

Progression of a sore throat: A case of bilateral peritonsillar abscesses

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Poster Number: 43

Bilateral peri-tonsillar abscesses, although a rare diagnosis, can have serious medical consequences if not diagnosed and treated promptly. The condition may initially present as a common sore throat, and diagnosis relies on an astute and thorough physical exam to guide evaluation and management.
Case: A 14y/o 109kg female, with a history of multiple strep throat infections presented with a 5-day history of worsening sore throat. Patient complained of odynophagia, dysphagia, and cough; had no signs of fever, vomiting, or ear pain. Physical exam revealed a congested nasal mucosa, hypertrophic turbinates, edematous soft palate bilaterally with adjacent tonsils 4+, mild trismus, a moderately muffled voice, and tender jugulodigastric nodes bilaterally. Patient was afebrile with a positive monospot, negative rapid strep swab, and a WBC count of 18.2x10^6. Soft Tissue Neck CT revealed findings consistent with bilateral palatine tonsil abscesses with near obstruction of the oropharyngeal airway.

Sore throat is a common chief complaint. While most cases are self-limited, treated with over the counter medications to alleviate symptoms, in rare cases infection may advance. This case exemplifies how an every day common illness can progress into a serious medical condition. The incidence of peritonsillar abscesses (PTA) is 30 per 100,000, with about 45,000 cases annually. The majority of these cases are unilateral with classic findings of palatine arch swelling and contralateral deviation of the uvula. In contrast, bilateral peritonsillar abscesses, can be more difficult to recognize on physical exam due to symmetrical findings. Although unilateral PTA can be diagnosed on history and physical exam, bilateral PTA require additional testing such as intraoral ultrasound or CT imaging. Both unilateral and bilateral PTA may present with severe sore throat, “hot potato” voice, trismus, drooling, and dysphagia. Treatment methods of PTA include needle aspiration, incision and drainage, or tonsillectomy and are used congruently with antibiotics. If treatment is not provided in a timely manner, complications of PTA include sepsis, jugular vein thrombophlebitis, airway compromise, and progression into the parapharyngeal space, skull base, or mediastinum.

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Comparison of two different types of revisional distal gastric bypass procedures

Authors: Faezeh Razjouyan, M.S., Jason Spiker, B.S., Andrew Villanueva, B.S., Daniel Tran, M.D.
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Poster Number: 44

Gastric bypass surgery is a standard modality for the treatment of morbid obesity and related co-morbidities. However, weight loss failure following Roux-en-Y gastric bypass (RYGB) constitutes a major concern since it is poorly understood and may lead to the need for revisional surgeries. There are several methods of performing revisional procedures. We reviewed all of the literature reporting the conversion to distal Roux-en-Y gastric bypass (D-RYGB) as a method of revision, of which there are two types. Type 1 D-RYGB describes a technique in which the common bowel limb was made to be 150 cm in length, the Roux limb at 100 cm, and a very long unmeasured biliopancreatic (BP) limb. Type 2 D-RYGB in which the common limb was made to be 75 cm, the BP limb at 25 cm, with a very long unmeasured Roux limb. However, there is no consensus as to which type has better outcome. This study aims to investigate these procedures and determine the outcomes. Type 1 D-RYGB has better weight loss outcome but higher complications.
**A Hidden Colony of Mucormycosis**

Authors: Cindy Agu, Nabeeh Hauter, Virginia Auguste, MD, Saqif Hasan, MD  
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Poster Number: 45

Case:  
A 45 year old male with a history of substance abuse, hepatitis B and HIV (CD4 181) on Highly Active Anti-Retroviral Therapy (HAART), was admitted for the evaluation of a suspicious lung mass. On admission, the patient was asymptomatic denied fever, cough, weight loss, and night sweats. Computed Tomography (CT) of chest in the ED showed a right hilar lung mass, suggestive of lung cancer. The patient underwent bronchoscopy and results showed a small area of necrosis in the posterior wall of the right middle lobe. Bronchial washing showed numerous aggregates of neutrophilic exudates in the background of necrosis and no tumor cells were observed. Periodic Acid Schiff (PAS) and Silver stain were positive for pneumocystic carinii and fungal organisms consistent with mucormycosis. During his hospitalization he was treated with intravenous Amphotericin B, Caspofungin and oral Bactrim. He was discharged with advice to continue PCP therapy for 21 days and to continue treatment for mucormycosis until radiological improvement is noted.

Conclusion:  
Mucormycosis is a rare fungal infection that can be acquired through the inhalation of spores. Mucormycosis species are angioinvasive and infarction of infected tissues in a hallmark of the disease. Patients with pulmonary mucormycosis can typically present with fever and severe hemoptysis. Here we reported a case of an asymptomatic HIV patient with a suspicious lung mass, which, turned out to be pulmonary mucormycosis with a concomitant pneumocystic carinii infection.

Clinical Significance:  
Our patient’s presentation was not of the norm. This case proves to be interesting because an immunocompromised patient with a mucormycosis infection at the stage in which the patient arrived in, should be severely ill and in possible distress. A case such as this is one that should be kept in the minds of physicians, as illnesses do not always present in the same way.

**From Bone to Stone: Primary Hyperparathyroidism and Urolithiasis**

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Poster Number: 46

Background: Primary hyperparathyroidism (PHPT) is predominantly (85%) caused by a single parathyroid adenoma and by multiple adenomas (15%) and parathyroid carcinoma (<1%). Most patients in the US affected with PHPT show little or no symptoms. However, the disease can have many complications, including: renal stones, loss of bone mass, and hypercalcemic and neurocognitive symptoms. Urolithiasis is another frequent problem in the general population and can be quite debilitating in the acute phase. Generally, patients with PHPT who develop stones are more often young and male.

Case: A 30 year-old female with a known history of primary hyperparathyroidism and hypercalcemia presented with urolithiasis. The patient had no family history of endocrine problems. Workup demonstrated PTH value of 150, Vit D at 15, Ca 6.74, and a urinary creation of calcium at 393mg/24 hours. The patient also reported having abdominal discomfort. A parathyroid scan showed retention of tracer in an area inferior and posterior to the left thyroid lobe.
An ultrasound of her neck showed no masses in the parathyroid area and two 3-mm cysts in left lobe of the thyroid gland. The patient elected to undergo a minimally invasive parathyroidectomy with intraoperative PTH monitoring. Discussion: PHPT must be distinguished from other endocrine diseases that produce similar symptoms. PTH concentration, hypercalcemia, and clinical presentation are important considerations for determining diagnosis. Research supports surgical intervention for symptomatic patients with PHPT and evaluation for surgery for asymptomatic patients. Parathyroidectomy usually cures primary hyperparathyroidism, resulting in normalization of biochemical values and an increase in bone mineral density. Stone formation is most common among young patients. Primary Hyperparathyroidism increases the chance of stone formation in affected patients. After surgery, the risk of recurrent stone episodes is reduced in PHPT patients to that of the rate among patients with idiopathic stone disease. Conversely, patients who do not receive surgery usually experience worsening disease.

Natalizumab Treated Multiple Sclerosis Patient Presenting with Encephalitis—An Unexpected Viral Etiology

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Poster Number: 47

A 61-year-old presented to the emergency department with acute onset of nausea, vomiting and headache. One month prior to admission, she was being treated with Natalizumab for Multiple Sclerosis (MS). After demonstrating two reports of seroconversion for JC virus antibodies, the drug was discontinued. Given the patient's history, there was concern for Progressive Multifocal Leukoencephalopathy (PML) upon admission. The initial cerebrospinal fluid examination yielded a negative result for JC virus and herpes simplex virus (HSV) PCR. An MRI of the brain revealed a new right temporal lesion. Due to the high suspicion for HSV encephalitis, a lumbar puncture was repeated with a positive result for HSV. The patient was treated with intravenous acyclovir and showed symptomatic improvement by day five of treatment. Today, she has demonstrated full clinical recovery.

Because Natalizumab treatment is associated with an increased risk of developing PML due to reactivation of JC virus infection, it can be incorrectly assumed that a MS patient presenting with encephalitis may have PML. However, in this case, the clinical picture hinted towards HSV encephalitis rather than PML. The clinical clues prompted reassessment of CSF with a second lumbar puncture. This case demonstrates the necessity of recognizing cognitive bias in medical decision-making, particularly the issue of premature closure. Had we not considered the clinical behavior of the disease and persisted with the suspicion of PML, the patient would not have received the necessary antiviral therapy that resulted in her recovery.

Liposarcoma- The Inconspicuous Cancer

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Poster Number: 48

Case: A 76 year old female with past medical history of hypertension, hyperlipidemia and glaucoma was admitted for an abdominal mass which was discovered on routine examination after she underwent a skin excision for basal cell carcinoma on her right lower leg. Patient denied any symptoms attributed to the mass including abdominal pain, nausea, vomiting or constipation. On physical examination, patient’s abdomen was notably distended, bowel sounds hypoactive, firm palpable mass, no tenderness in any of the four quadrants on palpation, and dullness on percussion. On computed tomography (CT), a large partially calcified fat containing mass throughout entire abdomen was
shown to be displacing the normal abdominal contents. The patient underwent surgery in which exploratory laparotomy, resection of abdominal pelvic mass, extended kocherization, colopexy, pexy of transverse colon, retroperitoneal exploration was done. Two retroperitoneal masses were resected from the patient weighing 5200 grams. The first mass measuring 27x20x10.5 cm and the second measuring 30x22x14.

Conclusion: Pathology showed evidence of a liposarcoma, a soft tissue sarcoma. Liposarcomas are a rare type of malignant cancer of adipocytes. They can occur in any part of the body, but mostly found in the muscles of the limbs or in the abdomen. Particular attention should be given to the geriatric population, where certain conditions such as liposarcoma are more common but can be overlooked.

Clinical Significance: Proper physical exam during doctor patient encounters can help determine the need for further evaluation of suspicious masses. This results in early intervention, which is key in preventing future medical complications in a patient’s life. Had this patient’s abdomen not been examined, her mass could have made her susceptible to intestinal obstruction and compromised her adjacent organs as it increased in size. The importance of detecting a condition before symptoms begin in a patient can be life saving.

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Professional Breastfeeding Hotline Helps Nursing Mothers Continue Breastfeeding

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Poster Number: 49

The Oklahoma Breastfeeding Hotline was launched in 2009 as a resource to “nursing mothers, families, partners, prospective parents, and health professionals seeking breastfeeding support and information” (“Breastfeeding Hotline,” 2015). Funded by the Oklahoma Department of Health, the OU Medicine lactation team administers the hotline seven days a week, twenty four hours a day utilizing International Board Certified Lactation Consultant (IBCLCs) staff. The purpose of our research is to quantify the ease of using this resource, determine value of the information given by the IBCLCs, and learn where women would have looked for help if the hotline were not available. We also want to assess the relationship between the mother’s satisfaction with the service and the length of time she breastfed. Surveys, consisting of twelve questions, were conducted via telephone with breastfeeding mothers who had previously called the hotline and at the time of their call granted permission for a follow-up satisfaction survey. One hundred seventy-nine mothers, all of whom called the hotline from December 2013 to September 2014, completed the survey. 93.8% of women were either satisfied or very satisfied with the ease of calling the number and 92.7% were either satisfied or very satisfied with the information they received from the IBCLC. We also found that the mean breastfed time was significantly longer for the moms who were satisfied with the information given from the registered lactation consultant than the moms who were dissatisfied (7.83 months vs. 4.12 months with p=0.0347). 96.6% said they would call the number again if need be and 30.9% reported they would have called no one if the hotline were not available. In the comments section of the survey, 63 of the women expressed their appreciation for the service and hoped that it continues to be available to breastfeeding mothers in the future. Overall, our data show that the Oklahoma Breastfeeding Hotline is a valuable resource to breastfeeding mothers and has the potential to be implemented in other states.

Lifestyle Education for Patients in the High-Risk Breast Cancer Clinic

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Introduction:
Attention to breast cancer risk reduction has become an increasing priority since clinical trials have demonstrated the efficacy of the use of risk reduction agents. Women at high risk for breast cancer due to family history or biopsy findings are eager to learn what lifestyle modifications they may employ to keep their risk as low as possible.

Methods:
We conducted a PubMed search over the past ten years using the key words nutrition AND breast cancer risks. We then categorized our findings, addressing intake of: 1) quality fats; 2) foods that stabilize insulin levels; 3) fiber; 4) fruits and vegetables; and 5) vitamin D. We also included the importance of weight control, exercise, and avoiding lifestyle, industrial, and medical risks.

Results:
We developed a patient education tool to be provided at a woman’s initial presentation to the high-risk counseling clinic at Michigan State University. The tool explains how lifestyle choices affect the risk of breast cancer and what a woman might do to keep her risk as low as possible.

Discussion:
This educational tool has the potential to serve as an approach to best practices not only in high-risk breast clinic settings, but in venues addressing a variety of other diseases because many lifestyle changes are not specific to breast cancer. The major advantage of its use is that it empowers patients to promote healthy lifestyles outside of the clinic and into their homes and community.

Bicornuate Uterus Twin Pregnancy with Uterine Rupture, A Case Report

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Case: A 26 year old woman with a history of bicornuate uterus gravida 2 para 0010 presents with moderate bilateral lower abdominal pain radiating to the back at 22 weeks gestation, following normal ultrasounds at 13 and 17 weeks gestation.

Conclusions: MRI reveals a twin pregnancy in the rudimentary horn of the bicornuate uterus. Patient was hospitalized and observed for 5 days. Patient elected not to terminate and due to worsening pain, an emergency exploratory laparotomy was performed. The procedure revealed a small uterine rupture and resulting hemoperitoneum. A cornual resection was performed. The patient recovered well, but the fetuses did not survive.

Clinical Significance: In a review of the literature, cases of twin gestations in bicornuate uteruses are extremely rare. Early identification and intervention are important to the management of bicornuate pregnancies to prevent severe complications, including uterine rupture, hemoperitoneum, and infertility.

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Poster Number: 52

The United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) is the core comprehensive Primary Health Care provider for 5.1 million Palestine refugees in the Near East (Jordan, Lebanon, Syria and occupied Palestinian territory: West Bank and Gaza strip).

In Jordan UNRWA’s operations span across 24 health clinics in 4 different geographical areas, which provide primary care to about 2 million Palestinian refugees in Jordan. In 2012, the number of total medical consultations among UNRWA clinics in Jordan was reported as 1,943,057, with an average of 87 daily medical consultations per doctor.

Since the beginning of the unrest in the Syrian Arab Republic, Jordan has witnessed a significant increase in number of Palestinian as well as Syrian refugees putting an extreme strain on the healthcare resources available to assist the refugee populations.

Due to a strong limitation of the resources and the especially high medical needs of the refugee populations displaced by armed conflict, the use of most effective and efficient medical practices is crucial. There is a growing recognition of the need to maximize efforts to bring evidence-based practice into resource poor areas, which can lead to significant gains in healthcare outcomes. Expert opinions and personal experience are not sufficient to provide high quality care for underserved patient populations. Healthcare providers in underdeveloped countries have learned to tolerate a high degree of uncertainty in their daily practice and relay on poorly generalizable evidence.

UNRWA implemented cross-sectional study to investigate drug prescription patterns among 24 health clinics in Jordan. The aim of the study was to introduce a global evidence based blueprint for prescription practices among all UNRWA clinics serving Palestinian refugees.

A Year in Review: Reflecting on Student and Faculty Experiences in the First Year of a New Interprofessional Student-Run Free Clinic

Authors: Laura Seewald, Michael Andrew Yu, Katherine Derbyshire, Tamzin Batteson  
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Presenter: Laura Seewald, laura.seewald@my.rfums.org  
Poster Number: 53

Introduction: Interprofessional teams have been shown to improve health outcomes. To educate students about interprofessionalism while providing comprehensive, interdisciplinary free care to the underserved population in the North Chicago Area, students at Rosalind Franklin University (RFU) opened the Interprofessional Community Clinic (ICC) in September 2013. Primary care is provided through our Interprofessional Teams (IP Team), with each team consisting of three students from different professional programs. Additionally, we have expanded our specialty services from an initial four to nine. These include pharmacy consults, individual psychology counseling,
physical therapy, multilingual communications, podiatry, women’s health, ophthalmology, diabetes education, and social services. The aim of this presentation is to discuss volunteer and faculty experiences and the clinic’s evolution throughout its first year.

Methods: To determine, in a survey of student and faculty who have volunteered at ICC: 1) quality of patient care; 2) effectiveness of clinical model; 3) attitudes about interprofessionalism in ICC; 4) learning experience of students; and overall clinical experience. The survey was constructed as a between-group design using 4-point Likert scales to express level of agreement or disagreement with the given statement. The questions were designed to address a variety of dimensions related to the ICC such as overall experience, thoughts on clinic flow, closeness with other professions and related topics.

Results: Over 250 individual patients have received care at ICC in our first year, while over 330 individual students from eight professional programs have volunteered. The above-described surveys are currently being collected from students and faculty to assess their clinical, interprofessional, and educational experiences at ICC and will be presented once all data are collected.

Conclusions: In its first year, the ICC experienced tremendous growth. The results of our student and faculty surveys will help us better understand areas in which we are succeeding and areas that still need to be improved or expanded to better meet the needs of the North Chicago community.

Someone like Me: The Effects of Pipeline Programs on the Diversity of the Medical Field

Authors: Adys Mendizabal, B.S., Jones, Nora L. PhD. Reeves, Kathleen A, M.D. Aggarwal, Neelum A, M.D., al Rashida, Vanessa, M.D.
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Poster Number: 54

Hypothesis: Increasing diversity in medical school can have a direct effect on reducing the health disparities that exist in the United States. Despite an increasingly racial/ethnically diverse population, 6% of all licensed physicians in the United States identify themselves as African American or Hispanic.

Purpose: The purpose of this study was to review the data supporting the need to increase the number of underrepresented minorities in medicine, and to identify programs and strategies that have been used by medical schools to achieve these goals.

Methods/Results: Studies on racial and ethnic congruency in medicine showed that diversity enhancement in medicine can narrow healthcare disparities. Multiple approaches to foster engagement of underrepresented minorities in the medical field were identified. We reviewed published data from pipeline programs implemented at twenty two medical schools between 1970 and 2001 and characterized their programs, based on demographic characteristics, types of programming and activities delivered and characteristics of each summer program.

Along with restructuring of the admission criteria, the implementation of pipeline programs has been identified as a promising tool to increase minority representation in medicine. Summer pipeline programs provided a strong emphasis in exposing students to the basic science curriculum, as well as reading and learning skills. Most program participants were successful in matriculating to medical schools, and those who matriculated saw the pipeline programs as helpful tools in their adjustment into medical school.
Conclusion: The implementation of pipeline programs has helped medical schools enhance their diversity, and in some institutions, this has translated to a more diverse faculty. Along with the benefits that a diverse environment would bring to an academic institution, increasing the number of underrepresented groups can improve healthcare access for minority groups. We conclude with a call for pipeline programs in order to increase diversity in the medical field.

What a Hematoma was Hiding

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Case Description: An 80-year-old man consulted his nurse practitioner for a slow, progressive, painless enlargement of his right groin for months. A CT scan showed a 6.8x11x8cm right lateral rectus abdominal muscle mass appearing as a large rectus hematoma. His symptoms did not resolve in the following weeks, so an ultrasound was performed, showing nodular masses in two areas measuring 3x3x2cm and 5x6x3cm. A needle biopsy was consistent with desmoid-positive mesenchymal tumor. He was referred to urology for further evaluation. On physical exam, a large right inguinal mass was present. A second CT scan showed the mass with abdominal wall involvement, no vessel involvement, and no metastasis. Urology and plastics made plans to remove the mass by resection, right radical orchiectomy, and reconstruction. During the operation, resection of the mass required removing his rectus fascia and the overlying skin due to its large size and required careful resection off of the femoral triangle and corporal bodies. Additionally, the neurovascular bundles of the penis were taken. Frozen sections were sent to pathology; margins at the junction of the left spermatic cord and the left testicle and of the pubic bone were positive for sarcoma, resulting in bilateral orchiectomy and partial resection of the pubic bone. Plastics followed with an anterior lateral thigh/tensor fascia lata flap of the abdominal wall and the penis.

Conclusions: This case illustrated the difficulty in identification of liposarcoma with CT scan and the value of ultrasound and needle biopsy. Additionally, the complexity of the liposarcoma growth made resection challenging, leading to wide margin resection and extensive reconstruction.

Clinical Significance: The frequency of liposarcomas presenting as an enlarging inguinal mass is uncommon, making the diagnostic and surgical approach challenging. Follow up for initial benign diseases is crucial for the identification of underlying pathology. Early recognition of liposarcoma is critical in its management.

Resolution of Postmenopausal Vaginal Bleeding with Cyclophosphamide in a Patient with POEMS Syndrome

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Background: POEMS syndrome (Polyneuropathy, Organomegaly, Endocrinopathy, M protein, and Skin changes) is a very rare condition. It is a rapidly progressive disease with a median survival time of 165 months and a 5-year-post-treatment survival rate of 60%. POEMS was first described in 1938 when a patient presented with hyperpigmentation, peripheral sensorimotor dysfunction, plasmacytoma, and elevated spinal protein. It took another
18 years before two additional cases were documented. And while nearly ninety years have passed since its discovery, POEMS remains poorly understood.

Case: A 54-year-old Caucasian female who presented for gynecologic consultation for postmenopausal vaginal bleeding, rapidly progressive weight loss, ascites, and bilateral lower extremity pain and weakness. Gynecologic malignancy or primary peritoneal cancer was highly suspected given the constellation of symptoms and rapid onset. However, after a comprehensive evaluation including imaging studies, laboratory studies, and consultations with multiple oncologic specialists, malignancy was ruled-out. Finally, a diagnosis of POEMS syndrome was made. The patient was lost to follow-up with gynecology due to a bedridden state but presented for follow-up of vaginal bleeding at the time treatment with cyclophosphamide was initiated. Within 72 hours of cyclophosphamide treatment for POEMS, all vaginal bleeding ceased. Subsequently, the patient began to recover from the other effects of her illness.

Clinical Significance: Consultations for vaginal bleeding in women with complex medical conditions are common. In severely debilitated patients, surgical intervention is often unsafe and medical treatment options are limited and sometimes ineffective. Further, treatment with chemotherapy agents for POEMS carries significant side effects and is not always initiated. The presented case describes a potential treatment option for vaginal bleeding in a woman with a rare medical condition and may aid clinicians weighing the pros and cons of initiating chemotherapy in a patient with POEMS syndrome.

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REACH Initiative Granting Healthcare to Trafficked Survivors (RIGHTS) Program

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Poster Number: 57

Hypothesis
Minnesota has one of the highest incidences of sex trafficking in the country. In order to bridge the unmet healthcare needs of this vulnerable population, Mayo Medical School students provide comprehensive, trauma-informed healthcare through the RIGHTS (REACH Initiative Granting Healthcare to Trafficked Survivors) program.

Methods
This project is a collaboration between Mayo Medical School, the Mayo Clinic, the Salvation Army Good Samaritan Clinic, Olmsted County Victim Services, and Breaking Free (a non-profit organization). The Olmsted County Victim Services and Breaking Free refer victims to the REACH program.

First year medical students interested in this program receive training that includes coaching on trauma-informed care and provision of healthcare services. As second year students, these trained “RIGHTS Patient Advocates” not only provide free primary care services, but also assist with insurance enrollment. They are supervised by a RIGHTS trained primary care physician. Furthermore, patients are referred to the Mayo Clinic, accompanied by their RIGHTS Patient Advocate, for additional tests, labs, and specialty care at no cost.

The logistics of this program are coordinated by RIGHTS Champions, four student leaders. These leaders set up appointments, communicate with all partners, implement the yearly training program, and monitor quality of the program.
Results
42 Mayo Medical School students have been trained in providing care for sex trafficking victims. The RIGHTS program has provided healthcare for one sex trafficked victim and one victim of domestic violence since 2012.

Conclusions
Students have gained exposure to providing care for sex trafficking victims, navigating the healthcare system as an advocate, and building relationships with community partners. Challenges that we have encountered and continue to overcome include: communication with community partners, raising awareness of the services provided by this program, and the bottleneck of receiving patient referrals from community partners.

The Long-Term Influence of Survivors Teaching Students® on Medical Student Learning

Authors: Alexa Shepherd, B.S., Jayson Field, M.D.
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Poster Number: 58

Hypothesis: Survivors Teaching Students® (STS®), a program that educates medical students on ovarian cancer and survivorship care through the use of the “patients-as-teachers” model, is effective in producing long-term retention of concepts.

Methods: Previous evaluations of the STS® program have included pre- and post-tests administered on the same day as the presentation. In order to determine if students retain the presented information, this study sent an additional survey six months after the presentation to the third year medical students at Oakland University William Beaumont School of Medicine. The post-survey contained the same seven multiple-choice questions as the pre-test and three new questions to determine use of knowledge and interest in the field. Composite data from the pre-test, post-test, and six-month post-survey were compared for retention of ovarian cancer facts and understanding of survivorship care concepts.

Results: Forty-nine medical students completed the pre- and post-test on the day of the presentation. Nineteen medical students completed the 6-month post-survey. When asked to list three ovarian cancer symptoms in the survey, 77.19% of the symptoms listed by students were one of the four symptoms described in the Ovarian Cancer Symptoms Consensus Statement. Additionally, one student has reported that she was able to diagnose a patient with ovarian cancer based on the information taught.

Conclusion: While additional studies on the STS® program outcomes are needed, the results of this pilot study provide evidence of the program’s success in promoting long-term retention of concepts. Furthermore, it provides a basis for research into the use of this unique teaching model for other concepts in the medical school curriculum.
The Improvement of Psoriasis in Pregnancy: A Closer Look at the Immunology

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Poster Number: 59

Background: Immunological changes in pregnancy are associated with improvements in some pre-existing autoimmune skin diseases. Estrogen is hypothesized to be partially responsible by creating a shift from Th1 to Th2 immunity. As predicted, psoriasis (a primarily Th1 mediated disease) tends to improve in pregnancy. However, the mechanism by which estrogen induces immunological change remains poorly understood.

Objective: To evaluate the effect of estrogen on psoriasis.

Methods: We performed an English-language PubMed search of articles from September 2004 to September 2014 combining the key terms “psoriasis”, “estrogen”, “autoimmune disease” “pregnant.”

Results: The effect of estrogen on psoriasis will be described in this presentation with a focus on the immunologic mechanism of improvement.

Conclusion: Estrogen up-regulates Th2 cytokines (IL-4 and IL-10) and down-regulate Th1 cytokines (IL-2, interferon gamma, IL-12). The down-regulation of Th1 cytokines serve to prevent fetal rejection. It's been shown in mice and humans that failure to shift from a Th1 to a Th2 system results in increased rates of spontaneous abortion. This shift was initially shown in murine systems by decreased mixed lymphocyte reactions of splenocytes and increased antibody production during pregnancy. Antigen stimulated splenocytes were then shown to produce less Th1 cytokines and more Th2 cytokines when derived from pregnant mice. Additionally, antigen and mitogen stimulated peripheral blood mononuclear cells derived from patients with normal pregnancies demonstrated a decrease in the production of IL-2 and IFNγ and an increase in production of IL-4 and IL-10. Together these observations support the shift from a Th1 to Th2 mediated immunity, which may explain the improvement of Th1 mediated diseases like psoriasis. The improvement of psoriasis during pregnancy is a unique opportunity to gain insight into autoimmune disease pathogenesis and may encourage new, future treatment strategies involving hormonal therapy.

Susceptibility Weighted Imaging in Pediatric Arterial Ischemic Stroke: A valuable alternative for the non-invasive evaluation of altered cerebral hemodynamics.

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Poster Number: 60

Background and purpose: Susceptibility weighted imaging (SWI) provides information about blood oxygenation levels in intracranial vessels. Previous articles showed that SWI focusing on venous drainage can provide non-invasive information about the degree of brain perfusion in children with arterial ischemic stroke (AIS). The goal of our study was to evaluate the influence of SWI venous signal pattern in predicting 1) stroke evolution and 2) development of malignant edema in a large cohort of children with AIS.

Materials and methods: A semi-quantitative analysis of venous signal intensity on SWI and diffusion characteristics on diffusion tensor imaging (DTI) was performed in 16 vascular territories. The mismatch between areas with SWI-
hypointense veins and decreased diffusion was correlated with stroke progression on follow-up. SWI-hyperintense signal was correlated with the development of malignant edema.

Results: 24 children with a confirmed diagnosis of pediatric AIS were included in our study. Follow-up images were available for 14/24 children. Middle cerebral artery (MCA) stroke progression on follow-up was observed in 5/6 children with and 2/8 children without mismatch between areas of initial SWI hypointense veins and areas of restricted diffusion on DTI. This mismatch showed statistically significant association (p=0.03) for infarct progression. Post-ischemic malignant edema developed in 2/10 children with and 0/14 children without SWI-hyperintense veins on initial SWI (p=0.07).

Conclusions: SWI-DTI mismatch predicts stroke progression in pediatric AIS. SWI should be routinely added to the neuroimaging diagnostic protocol of pediatric AIS.

Intramuscular 17-hydroxyprogesterone caproate vs vaginal progesterone in women with a history of spontaneous preterm birth: a retrospective cohort study

Authors: Ciara Johnson, Daniel Jackson, David R. Deschamps, Eric Knudtson, Ravindu Gunatilake, Marvin Williams, Asal Fathian, Jennifer J. McIntosh
Institution: The University of Oklahoma College of Medicine
Presenter: Ciara Johnson, ciara-johnson@ouhsc.edu Poster Number: 61

Hypothesis: Treatment with intramuscular 17-hydroxyprogesterone caproate (17OHP) for women with a prior spontaneous preterm birth (SPTB) and vaginal progesterone (P4) for women with a short cervix is standard of care. The homogeneity of these populations, as well as the successful studies using vaginal progesterone in women with a prior SPTB, suggest ambiguity in treatment options. We hypothesized that 17OHP and P4 would have a similar effect on the rate of recurrent SPTB.

Methods: We performed a single-institution retrospective cohort study evaluating delivery outcomes for women with a history of SPTB treated with either 17OHP or P4. Primary outcomes included mean gestational age at delivery and SPTB less than 37 and 34 weeks. Univariate analysis was performed using chi-square and student’s t-tests. Multivariate analysis was performed using linear and logistic regression. We also performed a cost analysis.

Results: During the 2-year study period, 27 women received 17OHP and 44 women received P4. Baseline characteristics were similar between the groups. Mean mid-trimester cervical length was similar in both groups (mean difference 4.42mm, CI -1.0-9.04). Mean gestational age at delivery between treatments was not statistically significant (mean difference 0.44 weeks, CI -1.039-1.917). Those treated with 17OHP or P4 had similar odds of delivering at less than 37 weeks (OR 0.319, CI 0.69-1.47) or less than 34 weeks (OR 1.90, CI 0.29-12.53). When controlling for relevant covariates, treatments had no effect on gestational age at delivery. Based on Oklahoma state Medicaid reimbursement rates, the cost savings for using P4 are $7,121.90 per pregnancy ($164.50 vs $7,286.40 per pregnancy).

Conclusions: There were no significant differences in treatment effect. Given the cost differential of treatments ($7,121.90), a randomized trial demonstrating equivalency could result in significant cost savings.
Comparing students' behaviors, attitudes, and knowledge on sun protection

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Poster Number: 62

Objective: To compare the sun protection behaviors, attitudes, and knowledge of medical and non-medical students at Florida International University.

Methods: We evaluated behaviors, attitudes, and knowledge using an online survey instrument designed by the research team. The survey link was emailed to all medical students. Non-medical respondents were obtained in the University Center during lunch hours and given a link to complete the survey. We sought to measure their percent correct scores in the knowledge portions and evaluate differences in their attitudes and behaviors on sun protection.

Results: 129 medical students and 166 non-medical students completed surveys. The average knowledge score was 71.6% (95% CI: 60.3-82.9) for medical students and 60.0% (95% CI: 48.7-71.3) for non-medical students (p<0.001). The groups were significantly different in 4 out of 11 possible attitudes. Medical students expressed a high belief in their risk for skin cancer (OR 9.8, 95% CI: 4.6-20.8). The groups were significantly different in 3 out of 8 possible behaviors. Medical students were much more likely to report indoor tanning bed use in their lifetime (OR 5.4, 95% CI: 2.1-13.8). They were also more likely to have heard of the ABCD guidelines for monitoring suspicious skin lesions (OR 11.1, 95% CI: 6.4-19.2).

Conclusions: This survey highlights the need for more dermatology education in U.S. medical schools. Although medical students scored higher on the knowledge portion of the survey, evidently there are gaps in that knowledge as evidenced by the low averages. Skin cancer is the most common type of cancer in the U.S. but also the most preventable. Sun avoidance and protection behaviors can effectively reduce the risk of developing skin cancer later in life. A non-dermatologist physician will initially evaluate most skin lesions. Future primary care physicians especially must be able to advise their patients on safe sun exposure and be aware of the early signs of skin cancer.

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The role of PI3K p110delta in gain-of-function Shp2 neutrophil ROS production and myelomonocytic progenitor infiltration of peripheral tissue

Authors: Deng, Lisa; Li, Xing Jun; Mikan, Robert A.; Chan, Rebecca J.
Institution: Indiana University School of Medicine
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Poster Number: 63

Juvenile myelomonocytic leukemia (JMML) is a fatal myelodysplastic/myeloproliferative neoplasm that affects young children. Conventional chemotherapy is ineffective and the only curative treatment is allogeneic bone marrow transplant, yet 50% of children will relapse and succumb to leukemia. JMML patients commonly present with a hyperinflammatory syndrome and mortality is due to infiltration of myelomonocytic progenitors, monocytes, and macrophages into extramedullary tissues, leading to bleeding, infection, and organ failure. Given the hyperinflammatory nature of JMML, we surmise that an altered, hostile bone marrow microenvironment promotes the egress of myelomonocytic progenitors from the bone marrow to peripheral tissues and leads to poor engraftment of normal donor cells following allogeneic stem cell transplant. Previous studies in our lab have shown that the PI3K subunit, p110delta, uniquely promotes JMML progression and hypersensitivity to growth factors. In preliminary studies, we found that mice expressing gain-of-function mutant Shp2 (Shp2D61Y, one of the most common mutations found in JMML) have greater numbers of neutrophils in the spleen, which is normalized upon genetic
inhibition of p110delta. Further, Shp2D61Y-expressing neutrophils overproduce reactive oxygen species (ROS) in response to various stimuli. Given the crucial nature of PI3K p110delta in innate immunity, we hypothesize that specific inhibition of p110delta will reduce hyperinflammatory neutrophils, inhibit neutrophil migration and progenitor cell egress from the bone marrow to peripheral organs, and yield a favorable bone marrow environment for improved donor WT cell engraftment. To address this hypothesis, we stimulated Shp2D61Y bone marrow-derived myeloid cells with serum opsonized zymosan and, using a luminol-based assay, observed that ROS production was decreased by the p110delta-specific inhibitor, GS-9820, in a dose-dependent manner. To examine if increased ROS is causative for increased progenitor egress in Shp2D61Y-expressing mice, we injected mice with a granulocyte-depleting antibody 1A8, and successfully depleted peripheral blood progenitors based on flow analysis. We found that animals with depleted granulocytes retained more hematopoietic progenitors (KIT+) in the bone marrow compared to animals treated with the isotype control, and had an increased number of colony-forming units measured by methylcellulose-based assays. These studies suggest a novel mechanism for p110delta’s role in JMML progression and are a step towards generating the necessary pre-clinical studies to introduce p110delta inhibitors into clinical trials for JMML patients.

Laparoscopic Appendectomy: Who Falls Through the Cracks?

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Poster Number: 64

Introduction: Laparoscopic appendectomy (LA) is well accepted as a standard treatment for patients with acute appendicitis. However, the types of complications and the patients likely to suffer them are not well characterized. The purpose of this study was to characterize the types of complications that occur after LA and to determine factors for complication occurrence.

Methods: A retrospective review was performed to include patients 15 years and older undergoing a LA (CPT code 44970) between January 1, 2009 and April 1, 2014 at a single institution. Demographic data, imaging, pathology, operative reports, length of stay, complications, and relevant history were obtained. Bivariate and multivariable analyses were used to determine risk factors for complications.

Results: 625 patients met inclusion criteria. Complications occurred in 14.6% (n=91) of patients. The 3 most common complications were organ space infections (n=45, 7.2%), superficial surgical site infection (n=23, 3.7%) and ileus (n=15, 2.4%). After bivariate and multivariable analysis, age (45-54yrs vs 15-24yrs – OR 4.14 95%CI 1.83, 9.37), perforated appendix (OR 6.85, 95% CI 3.99, 11.80), and pain prior to surgery (5-7 days vs ≤1 day OR 4.37 95%CI 1.46, 13.14) were associated with complications. Of all LA only one procedure related complication was noted (0.2%) due to a trocar placement injury, but no further complications occurred.

Conclusions: Despite being considered minimally invasive and perceived as safe, LA is associated with complications in nearly 15% of patients undergoing the procedure. Patients who are of middle age, with history of prolonged pain and perforation are at increased risk of suffering complications. Earlier recognition of the signs and symptoms of acute appendicitis in this atypical age range could result in fewer complications overall for LA. Future research should focus on possible areas of intervention in this vulnerable patient population.
**Histopathological analysis of tumor necrosis factor-α inhibitor therapy induced psoriasiform eruptions**

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Poster Number: 65  
Disclosures: Dr. Fernandez, receives honoraria as a lecture speaker and Advisory Board member of Abbvie

Hypothesis: Tumor necrosis factor-α inhibitor therapy paradoxically induces psoriasis which can be characterized histologically and correlated clinically.

Methods: A total of 50 biopsies taken between January 2006 and January 2014 from 41 Cleveland Clinic patients who developed psoriasiform cutaneous eruption after TNF-α inhibitor therapy were histologically evaluated. Results were correlated with retrospective clinical information.

Results: Of 50 biopsies, 43 (86%) were from women and 7 (14%) were from men. Eight patients had more than one biopsy. The time span between onset of reaction and time of biopsy was an average of 10 months. Histologically, major inflammatory reaction patterns included “psoriasiform” (either guttate or plaque-type) (56%), “spongiotic” (22%), “pustular” (8%), “perivascular inflammation” (6%), “focal interface dermitis” (4%), “neutrophilic dermatosis” (2%), and folliculitis (2%). Neutrophils were present in the epidermis (78%) and/or stratum corneum (82%) in most biopsies. Stratum corneum microabscesses were noted in 42% of cases. Dermal histopathological findings included presence of plasma cells (62%) and eosinophils (32%). No trend was observed between histologic characteristics and medication type. Characteristics did not significantly differ depending on time period between rash onset and biopsy date.

Conclusion: TNF-α inhibitor therapy can induce a variety of cutaneous eruptions in patients, including spongiotic, pustular, and psoriasiform, with psoriasiform being the most common. We report comprehensive histologic analysis of the largest cohort TNF-α inhibitor-induced psoriasiform biopsies to date. The large cohort in this study allowed better characterization of clinical and histopathological parameters to improve future diagnosis. Further research into the mechanism underlying the reaction is required.

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**Role of TSP-1 in Leptin-induced Vascular Complications**

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Poster Number: 66

Hypothesis: Hyperleptinemia is a putative trigger for development of atherosclerosis; however, underlying mechanisms by which leptin induces lesion development remain poorly understood. We reported that leptin upregulates expression of a pro-atherogenic protein, thrombospondin-1 (TSP-1), in human aortic smooth muscle cells (HASMC) in vitro. The goal of this study was to investigate whether TSP-1 plays a direct role in leptin-induced atherosclerosis in vivo.

Methods: Male ApoE/- and TSP-1/-/-/ApoE/-/- mice at 17 weeks of age on regular chow diet were treated daily with PBS (vehicle control) or leptin (5µg/g, i.p.) for three wks. Plasma samples were used to measure total and FPLC-fractionated cholesterol levels using InfinityTM Cholesterol Reagent. Atherosclerotic lesion severity was determined by en face Oil red O staining of lipid content; morphometry of lesion size, collagen content and cell
proliferation. Lesion development was further evaluated in a mouse model of hyperleptinemia and atherosclerosis (KKAy+/-/ApoE-/-) using en face and high-frequency ultrasound imaging.

Results: Although leptin-treated TSP-1-/-/ApoE-/- mice had lower plasma cholesterol levels compared to leptin-treated ApoE-/- mice, FPLC fractionation of plasma lipids indicated that this difference was not attributable to VLDL and LDL levels. Leptin significantly increased atherosclerotic lesions in aortic vessel walls of ApoE-/- mice, but there was a significant decrease in lesion area in leptin-treated TSP-1-/-/ApoE-/- mice. Aortic root morphometry showed reduction in lesion size, collagen content and cell proliferation in TSP-1-/-/ApoE-/- vs ApoE-/- mice in response to leptin. Finally, obese KKAy+/-/ApoE-/- mice with endogenous hyperleptinemia developed increased atherosclerotic lesions and significant decrease in ascending aorta and trans-aortic arch internal diameter, revealed via ultrasound imaging, vs. age-matched lean littermates.

Conclusions: These data demonstrate that knockout of TSP-1 protects ApoE-/- mice against leptin-induced atherosclerosis. Together, our results suggest TSP-1 as a putative therapeutic target in hyperleptinemia-induced atherosclerosis.

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Pain, discomfort, and embarrassment during high-resolution anoscopy among women: a potential barrier to care?

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Poster Number: 67

Background: High-resolution anoscopy (HRA) is utilized for microscopic evaluation of the anal canal in patients at increased risk for HPV-induced anal dysplasia. The purpose of this study was to evaluate patients’ knowledge about HRA and assess their perceived level of pain, discomfort and embarrassment before and after HRA. Provider perception of patient pain, discomfort and embarrassment was also assessed.

Methods: HIV-positive women scheduled for HRA at an urban university medical center were surveyed to assess knowledge of HPV and HRA before and after their HRA procedure. Perceived pain, discomfort and embarrassment were evaluated using a 100mm visual analogue scale (VAS). Providers’ perception of their patients’ level of pain and discomfort was assessed using a similar VAS.

Results: Of the 55 women surveyed, the mean age was 46 (SD 10), 80% were black, and 60% achieved at least a high school degree. One-third (36%) were not familiar with the HRA procedure, and 64% reported limited knowledge. The mean level of anticipated HRA pain differed significantly from actual pain experienced (p=0.00). Similarly, anticipated discomfort differed significantly from discomfort reported post procedure (p<0.05). Providers perceived that patients would experience less pain and discomfort than what patients actually reported (pain: p<0.05, discomfort: p<0.05).

Conclusions: This study demonstrated that patients anticipated greater pain and discomfort than was actually experienced. In contrast, providers anticipated that patients would experience less pain than reported. Consequently, providers need to enhance patient education and address patient concerns regarding anticipated pain and discomfort associated with the HRA procedure.
Re-organization of Neural Circuitry during Age-Related Hearing Loss

Authors: Nikkee Amin, Shobhana Sivaramakrishnan, PhD
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Hypothesis: During age-related hearing loss (AHL), listeners fail to discriminate between different sound frequencies. Neural circuitry in the inferior colliculus (IC), a midbrain auditory nucleus, gets reorganized, reducing the low-to-high frequency profile into a flat mid-frequency range. We hypothesized that the loss of frequency discrimination in the IC resulted from a loss of local connections between frequency bands.

Methods: To examine reorganization in the IC, we used voltage-sensitive dyes to optically image activity in IC slices of C57BL/6 mice, a model of AHL. Recordings were made during early onset AHL at postnatal day 35 and compared with normal hearing CBA/Ca mice. The effects of inputs were analyzed using antagonists of inhibitory Gabergic receptors (gabazine) and of excitatory glutamatergic NMDA receptors (APV). Loss- or gain- of function was recorded in (1) local circuitry within frequency laminae by stimulating the ipsilateral afferent lateral lemniscal tract and (2) commissural connections between the two colliculi by stimulating the contralateral IC.

Results: In the CBA/Ca control mouse, activity decreased in APV and increased in gabazine. Activity in C57BL/6 mice increased in gabazine, however, activity further increased in APV. The increase in APV was observed with both lemniscal and commissural stimulation. The optical images also indicated that the commissural axons themselves were not affected.

Conclusion: The results suggest that glutamatergic NMDA mediated transmission is reduced during AHL, preventing APV from affecting NMDA receptors. The increase in response to APV in the C57/BL6 mice suggests the presence of disinhibition, resulting in increased excitability of neurons. Therefore, excitation-inhibition balance is specifically affected in early-hearing loss, with a net loss of inhibition and increase in excitation.

This study can help to develop intervention techniques at the level of the midbrain and circumvent the effects of peripheral damage, allowing high frequency inputs to the central auditory system.

Retinal gene therapy for CNGB3-associated achromatopsia

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Disclosures: Christine Kay MD: AGTC (research funding for Achromatopsia clinical trial), Foundation Fighting Blindness (career development award which supports research on achromatopsia), Second Sight (independent medical safety monitor).

Hypothesis: CNGB3/Nrl double knockout is an appropriate cone mouse model to study achromatopsia, a congenital retinal cone disorder caused by CNGB3 gene mutation. This mouse model can be used with clinical parameters from an ongoing clinical trial to develop retinal gene therapy.

Methods: Western blotting was performed on wild type and CNGB3/Nrl double knockout retinal samples. Gel electrophoresis separated proteins in each sample according to size and electrical charge. Wet transfer moved proteins from gel to polyvinylidene fluoride membrane. Membrane was incubated with one of twelve primary antibodies: AGTC-anti-CNGB3, CNGA3 combo, CNGA3-C, CNGA3-L, ab87491, CNGB3-sc99179, CNGB3-C,
CNG3-sc2197, Gat2-sc390, Blue-Millipore, Red-Green Millipore, or MW1-sc22117. Then membranes were incubated with secondary antibodies. Infrared imaging of transfer membranes allowed for visualization of antibody binding sites, which correspond to protein size.

Results: Of twelve antibodies tested, six demonstrated literature value protein sizes. CNGA3-L, CNGB3-sc99179 and Gat2-sc390 antibodies detected CNGA3 (~72kDa), CNGB3 (~92kDa), and Gat2 (~42kDa) proteins in wild type and CNGB3/Nrl double knockout samples. Blue-Millipore, Red-Green Millipore, and MW1-sc22117 antibodies detected cone opsins (~48kDa) in wild type and CNGB3/Nrl double knockout samples.

Conclusions: Since the CNGB3/Nrl double knockout retina only has cones, the presence of bands corresponding to cone opsins in both groups supports the use of CNGB3/Nrl double knockout as a mouse model for CNGB3-associated achromatopsia. Further testing is required to develop intravitreal injections with this model for gene therapy.

An R24/NIH grant funded clinical trial, “Clinical and Genetic Characterization of Individuals With Achromatopsia” (ClinicalTrials.gov Identifier: NCT01846052) has been underway to observe disease parameters in humans. Patients participate in a Farnsworth color vision test, reading speed test, visual field and acuity tests, fundus photography, optical coherence tomography, brightness tolerance test, and electroretinogram at 6 month intervals over 18 months. This observation will be the foundation to test the future gene therapy in humans.

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**Efficacy of the PODD communication tool in patients with Rett Syndrome**

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Poster Number: 70

Hypothesis: Rett Syndrome (RTT) is an X-linked neurodevelopmental disorder that primarily affects females. Patients with classical RTT suffer from severe impairment/loss of purposeful hand movements and expressive speech that leads to severe limitations in their ability to communicate/express themselves. However, RTT patients have strong eye gaze, which can be utilized for communication using a tool known as Pragmatic Organization Dynamic Display (PODD). The purpose of this research is to 1) determine how applicable PODD is as a communication strategy in RTT patients, 2) identify subpopulations of RTT patients where this communication strategy may be effective/ineffective, and 3) identify the optimal setting for successful PODD implementation.

Methods: Forty-eight girls, aged 3-24 years old, with genetically-confirmed RTT were identified as patients recommended PODD whose families/speech therapists have been offered formal training. The families and/or speech therapists of these patients were asked to complete a survey about using the PODD system. Surveys for 42 patients (88%) were completed. These respondents were split into two groups: Communicators (64%), those who can use PODD to communicate at least one pragmatic function, and Non-Communicators (36%), those who do not communicate with PODD.

Results: Statistical analyses revealed that Communicators were significantly more likely to use a 12-symbol PODD version, use the tool with multiple communication partners, and use the tool both at school and at home. Most Communicators learned to initiate communication after less than a year of PODD use. Furthermore, there was no correlation between disease severity and communication.
Conclusions: RTT patients can successfully communicate with the PODD system regardless of clinical symptoms or disease severity. Factors that improve PODD outcomes include using a 12-symbol PODD, using PODD throughout daily activities, and using PODD with multiple communication partners.

**Structural and Mechanistic Causes of Drug Induced Liver Injury: A Database of Hepatotoxic Drugs and their Non-Hepatotoxic Analogs**

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Poster Number: 71

The potential for drug induced liver injury (DILI) of investigational drugs is of concern to researchers, clinicians, and government regulators. Historically, preclinical animal studies have only detected 50-70% of drugs that cause hepatotoxicity, which is concerning because idiosyncratic drug hepatotoxicity is the most common cause of post-market warnings and withdrawals. Yet, while DILI is a significant clinical safety issue, its overall prevalence in pharmaceutical drug development is very low (2-3%). Several pharmaceutical companies have published their preclinical hepatic safety screening strategies intended to guide drug discovery toward the selection of candidate compounds with a potentially lower risk of DILI. However, an independent survey of those screening algorithms reveals that most of their “validation” test sets were comprised of a distribution of test drugs weighted heavily in favor of presumably hepatotoxic compounds. Moreover, many of their test compounds were false DILI positives because the criteria by which they were designated as hepatotoxic may likely be inaccurate from a clinical causality perspective. Consequently, there is a need for a standardized system by which specific withdrawn drugs and their benign structurally related marketed analogs can be definitively classified as hepatotoxic (H) and non-hepatotoxic (NH), respectively, in order to create an unbiased validation test set for use in future preclinical DILI screening strategies.

Using FDA labeling information, published literature, and clinical safety reports from the NIH LiverTox database (http://livertox.nih.gov), we developed a comprehensive system for identifying and classifying these drugs as H vs. NH in structurally and pharmacologically related pairs. Ultimately, this approach enabled creation of a database of published information regarding structural alerts for withdrawn drugs associated with DILI, putative mechanism(s) of liver injury, and observation (or absence) of potentially harmful reactive drug metabolites. This approach is intended to help companies to develop a screening strategy to identify and/or mitigate issues related to liver safety of clinical drug candidates.


2 Senior, John. “How can we reconcile the inherent conflicts?” Drug-Induced Liver Injury (DILI) Conference XIV (March 20, 2014), College Park, Maryland.
**Cellular Mechanisms Underlying the Use of Striatal Stimulation for the Treatment of Traumatic Brain Injury**

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Poster Number: 72

Hypothesis: The therapeutic benefit of deep brain stimulation (DBS) has expanded into many indications including traumatic brain injury (TBI). A previous study in the Eskandar Lab demonstrated that DBS in the ventral striatum improves performance of task learning in a rodent model of TBI. Whole genome analysis (WGA) demonstrated increased expression of neuroproliferation, neuroplasticity, and neuroprotection genes. This project hypothesizes that immunohistochemical markers will further demonstrate increased neuroproliferation and neuroplasticity, as well as decreased neuroinflammation and injury, when treatment with DBS is applied following TBI.

Methods: Mice underwent a unilateral controlled cortical impact injury and were implanted with sham or stimulating electrodes targeted to the ventral striatum. At 2, 5, 7, or 14 days after stimulation, brains were extracted for immunohistochemical analysis. Regions evaluated included: hippocampus, anterior rostral migrating stream (RMS), striatum (STRT), subventricular zone (SVZ), and perilesional space (PLS). Three categories of markers were studied based on WGA: neuroproliferation (BrdU, NeuN, DoubleCortin, and GFAP), cell migration and plasticity (Synaptophysin and GAP43), and cell injury, scarring or death (Caspase 3, Iba-1, and FluoroJade-B).

Results: Animals treated with DBS showed increased markers of neuroproliferation, with more co-labeled BrdU+/NeuN+ and BrdU+/DoubleCortin cells in the SVZ, RMS, and PLS. Synaptophysin and GAP43 expression was also increased, demonstrating augmented mechanisms of neuroplasticity. Markers of cell death and axonal injury such as Caspase 3, Iba-1, and FluorJade-B were decreased demonstrating an attenuation of the deleterious effects involved in post-injury gliosis and axonal degeneration.

Conclusions: We found that following TBI, animals treated with DBS showed increased markers of neuroproliferation, neuroplasticity, and neuroprotection. These findings begin to elucidate the cellular mechanisms underlying the therapeutic benefit of DBS following brain injury.

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**Motivations for Compliance with Bracing in Adolescent Idiopathic Scoliosis**

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Poster Number: 73

Hypothesis: The objective of this study is to determine the factors that most impact compliance and non-compliance with bracing in adolescent idiopathic scoliosis.

Methods: Study participants included females between 10 and 16 years of age diagnosed with adolescent idiopathic scoliosis and prescribed a Boston DLSO brace to be worn for 16 hours/day. Each completed a “Scoliosis Compliance Questionnaire” comprised of the SRS-22 Questionnaire and five original sections related to the participant’s attitude toward their scoliosis, the challenges to bracing, motivations to wear or not wear their brace, and potential interventions that might impact compliance. This study received IRB approval and parent/guardian consent for participation was obtained.
Results: 39 participants completed the questionnaire. Among the many factors evaluated, several trends stood out. On the SRS-22 portion of the questionnaire, participants scored the lowest in the Self Image and Mental Health domains. When asked to identify the most and least challenging situations to wear their braces, participants identified school (19.4%) or the summer months (27.8%) as the most challenging, while the majority identified home (38.9%) and while sleeping (27.8%) as the least challenging. Of the potential interventions suggested, greater than 60% of study participants identified having a friend/peer to talk to who also wears a brace for scoliosis (71.1%) and a greater variety of clothes that they could wear over their brace (60.5%) as factors that would cause them to wear their brace more often. Common motivations for complying with bracing included a desire to avoid surgery and keep one’s scoliosis from getting worse.

Conclusion: The results of this study draw attention to several factors of importance to patients who are prescribed braces for treatment of adolescent idiopathic scoliosis and which could serve as potential sources of intervention to increase brace compliance, such as introducing patients to peers with the same diagnosis.

Comparison of radiographic characteristics of renal cell carcinoma (RCC) brain metastases treated with vascular endothelial growth factor (VEGF)-directed therapies or radiotherapy

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Poster Number: 74

Hypothesis: In metastatic renal cell carcinoma (mRCC), an increased frequency of brain metastases (BM) has been observed. We hypothesize that the response of BM to VEGF-directed therapies may be superior to the response to radiotherapy, owing to the fact that these small molecules can likely penetrate the blood-brain barrier.

Methods: Patients (pts) with mRCC BM were identified from an institutional database. Selection of pts was further refined to pts who had received either VEGF-directed therapy during their diagnosis with BM or radiotherapy directed to their BM. Only those pts with brain MRI straddling systemic therapy and radiotherapy were selected. Imaging studies were anonymized and transmitted to an independent radiologist for review. Descriptive statistics were applied to characterize the change in sum of long axis dimensions (SLD) in two separate groups: (1) pts treated with VEGF-directed therapy and (2) pts treated with radiotherapy.

Results: Of 276 pts with mRCC in our institutional database, 34 pts with BM were identified. Of these pts, 6 pts had serial MRI assessments at timepoints straddling receipt of VEGF-directed therapy. Pts had received sunitinib (n=2), sorafenib (n=2) or bevacizumab (n=2). A further 13 pts received radiotherapy with MRI imaging straddling delivery of either stereotactic radiation therapy (SRT) and whole brain radiotherapy (WBRT). Of these 19 patients, all patients had clear cell histology, and 13 patients were male. In pts receiving VEGF-directed agents, the average change in SLD of BM was -13.8%. In pts receiving radiotherapy, the average change in SLD was -6.5% (-13.0% in pts receiving SRT and +2.0% in pts receiving WBRT). Qualitatively, greater tumor necrosis and lesser rim enhancement was observed in post-treatment scans amongst pts receiving VEGF-directed agents.

Conclusions: This pilot study suggested greater CNS response with VEGF-directed therapy as compared to radiotherapy. Multicenter collaborations are underway to validate these results in larger series.
Outcomes of Sacral Neuromodulation in Patients with Prior Surgical Treatment of Stress Urinary Incontinence and Pelvic Organ Prolapse

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Introduction: To evaluate prior stress urinary incontinence (SUI) or pelvic organ prolapse (POP) surgery’s impact on sacral neuromodulation (SNM) outcomes.

Hypothesis: Complex patients with overactive bladder symptoms that have had prior SUI/POP surgery will have excellent sacral neuromodulation outcomes compared to those without these prior surgeries.

Methods: Women enrolled in our prospective database that had SNM and urinary incontinence (UI) were grouped by history/no history of SUI/POP surgery. Outcomes, measured at 3, 6, 12 and 24 months with voiding diaries, Interstitial Cystitis Symptom/Problem indices (ICSI-PI), Overactive Bladder Symptom Severity (OAB-q SS)/Health related quality of life (HRQOL), and Global Response Assessment (GRA) were analyzed with Pearson’s Chi-square, Fisher’s Exact, and Wilcoxon rank sum tests.

Results: Of 108 of 210 women with prior SUI/POP procedures, more had prior hysterectomy (p<0.001). Stage 2 implant rates were similar between groupsICSI-PI, OAB-q SS and HRQOL did not differ between groups at any time point. ICSI-PI scores improved over time (p<0.0001 for both groups). On diaries, SUI/POP group had more UI episodes/day at 1 year (p=0.027) and lower volume/void at 2 years (p=0.041). A higher proportions of SUI/POP patients leaked urine at 6 (92% vs. 73.2%; p=0.009) and 12 months (92% vs. 67%; p= 0.002). On GRA, a lower proportion (40% vs. 60%; p=0.037) had improved urgency at 6 months. Fewer SUI/POP patients reported moderately/markedly improved symptoms at 12 (51% vs. 71%; p=0.045) and 24 months (42% vs. 66%; p= 0.031). Satisfaction rates were similar between groups and the majority in each group would undergo SNM again.

Conclusions: Although SNM improves voiding symptoms in women with prior SUI/POP procedures, underlying voiding/pelvic floor dysfunction may limit level of improvement.

Improve Parental Attitudes Towards Vaccinations through an Educational Session

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Hypothesis: Recently, parents have been concerned about vaccine safety, efficacy, and perceived risk of disease, leading to increased rates of refusal and use of alternative immunization schedules. Following an educational session on childhood vaccinations, we hypothesized that there was improvement in parental attitudes towards vaccinations and towards following the Advisory Committee on Immunization Practices (ACIP) recommended schedule.

Methods: During the study, a vaccine educational session was presented to first time parents who have 3-12 month old infants and are participants in Beaumont Hospital’s Parenting Program. The session addresses information and importance of each vaccine, possible adverse effects, and common myths about immunizations. Parents expressed concerns, participated in a discussion, and had individual questions answered. Each parent had the opportunity to complete a pre-session and an identical post-session survey assessing parental hesitancy towards vaccinations. The survey scores were compared using a paired t-test analysis to determine the efficacy of the educational session in improving parental attitudes towards vaccinating in accordance with the ACIP recommended schedule.
Results:
The research has shown that implementing the vaccine educational session resulted in a decreasing trend in parental hesitancy towards childhood vaccinations. Individual hesitancy factors have also been analyzed, with the most interesting being a 48.6% reduction in hesitancy towards children receiving multiple vaccines at a single visit and a 25.7% reduction in concern about a serious adverse reaction from the vaccines.

Conclusions:
Due to the demonstrated decreasing trend in parental hesitancy towards vaccinations, the session may be incorporated in parenting programs at Beaumont and other institutions. The session successfully educates parents about vaccination myths and may increase childhood immunization rates.

Post-Transplant Cyclophosphamide (PTCy) to Promote Immune Tolerance after Reconstructive Transplantation

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Poster Number: 77

Hypothesis: Routine clinical use of reconstructive transplantation (RT, hand and face transplants) has been limited by the risks related to required long-term, high-dose immunosuppression to avoid rejection. Here we implemented a novel protocol to induce immune tolerance and avoid the need for maintenance immunosuppression.

Methods: Murine orthotopic hindlimb transplants (OHLTx) or full-thickness skin transplants (FTSTx) were performed across a full MHC barrier. Treatment consisted of peritransplant non-myeloablative total-body irradiation and T-cell depletion, followed by BMT and PTCy. No further immunosuppression was given after POD3. Mechanistic studies included peripheral blood chimerism and vβ T-cell receptor (TCR) staining, mixed lymphocyte reactions (MLR,) and adoptive transfer experiments.

Results: Untreated FTSTx or OHLTx recipients rejected their grafts within 14±1 and 8±1 days, respectively. The PTCy protocol alone without BMT increased FTSTx survival to 32±8 days, while PTCy treatment plus BMT extended FTSTx survival indefinitely (>POD150.) OHLTx uniquely differ from FTSTx and SOT because they contain an intragraft, vascularized bone component that can independently function as a BMT. Of note, protocol-treated OHLTx recipients, both with and without BMT, showed indefinite graft survival. Additionally, chimerism was significantly higher in all OHLTx groups compared to FTSTx recipients. Highest chimerism levels were present in BMT augmented OHLTx recipients. Long-term survivors had decreased expression of donor-specific vβ TCRs, indicating a central tolerance mechanism. Furthermore, tolerant animals showed donor-specific T-cell unresponsiveness in vitro by MLRs and in vivo by acceptance of secondary donor-matched FTSTx and acute rejection of third-party skin. Tolerance robustness was further underscored by adoptive transfer experiments and infusion of naïve T-cells into long-term survivors.

Conclusions: This PTCy-based protocol induced robust tolerance in a fully allogeneic murine model of RT without recipient preconditioning. This represents a rapidly translatable, clinically applicable treatment strategy that will serve as groundwork for new stem cell-based methods to broaden the clinical utility of RT.
Feasibility, acceptability, and preliminary efficacy of Promotora-Led Diabetes Prevention Program in Hispanic women (Latinas)

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Poster Number: 78

Hypothesis: The purpose of this study is to test the feasibility, acceptability, and preliminary efficacy of a Promotora-Led Diabetes Prevention Program (PL-DPP) among Hispanic women (Latinas). This pilot study is an adaptation of the Diabetes Prevention Program lifestyle intervention delivered by lay health workers, or promotoras. It is the first to focus only on Latinas, the demographic group with the highest lifetime diabetes risk. We hypothesized that participants would experience weight loss and cardiometabolic health improvements during this study period.

Methods: Twenty Latina adults with prediabetes were enrolled in this single-arm pilot trial of PL-DPP. Participants underwent a year-long lifestyle intervention consisting of 24 sessions divided into 14 weekly core sessions and 10 post-core sessions offered either biweekly or monthly. Each session was led by one promotora in Spanish. The primary outcome was weight change over the 12-month study period.

Results: Eighteen participants (90%) completed at least 10 sessions and one was lost to follow-up at 12 months. Overall, patients reported high levels of satisfaction with PL-DPP. The mean pre-post change in weight was significant at 10.8lbs (4.9kg), which corresponded to a 5.6% reduction in body weight. Forty-two percent of pilot participants achieved the 7% weight loss goal. Significant pre-post reductions in waist circumference, diastolic blood pressure, LDL cholesterol, and insulin levels were also observed. There were modest reductions in A1C and fasting serum glucose, which were not significant.

Conclusions: The PL-DPP demonstrated feasibility, acceptability, and preliminary efficacy in a high-risk population of Latinas. Future research exploring this intervention in a randomized clinical trial should explore factors impacting its effects with both qualitative and quantitative methods.

Fifth Metacarpal Morphology and its Relation to Locomotor Behavior in Anthropoid Primates

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Poster Number: 79

Hypothesis: Nonhuman primate anatomy can provide insights into the locomotor behavior that preceded human bipedality. Primate metacarpals should be adapted to either mobility or stability according to the demands of the primary locomotor hand postures used by a species. Here, we test this hypothesis for the carpometacarpal joint surface of the fifth metacarpal (Mc5). Greater dorsal canting of the surface might facilitate higher mobility for palmigrady (full palm placed on the support). Similarly, the facet for articulation with the hamate’s hamulus is thought to be more obliquely oriented in a palmigrade-adapted species. In contrast, a more acute hamulus facet might lock in the Mc5, stabilizing it for climbing, knuckle-walking, and possibly digitigrady.

Methods: Digital models of Mc5s from 21 species were generated using computer imaging. Landmarks were collected to define a dorsal canting angle (DCA), with a wider angle indicating greater dorsal orientation. A hamulus facet angle (HFA) was defined, with a larger angle indicating greater facet obliquity. Taxa were compared statistically.
Results: The dorsal canting angle (DCA) and hamulus facet angle (HFA) vary significantly across the sample. For DCA, suspensors and knuckle-walkers (low canting) are distinctive from palmigrade and digitigrade primates (highly canted joints). Suspensory and knuckle-walking apes are not significantly different with regard to DCA, and humans are intermediate between these apes and palmigrade/digitigrade monkeys. No close association is evident between HFA and locomotor style. However, humans have the highest HFAs (p < 0.001) possibly indicative of a more pliable palm for manual manipulation.

Conclusion: As predicted, low DCAs distinguish suspensors and knuckle-walkers indicating that it partially reflects locomotor behavior. However, digitigrade primates do not exhibit predicted low DCAs, instead being similar to palmigrade taxa. Resolving which locomotor mode represents the condition from which humans evolved will require analysis of fossils and phylogenetic methods to reconstruct ancestral morphology.

The Efficacy of the Albany Medical College Medical Student Tobacco Cessation Consult Service

Authors: Aleena Paul, Ingrid Allard, Karen Dylong
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Poster Number: 80

The continued presence of tobacco use in society places increasing burdens on the healthcare system; the associated poor outcomes negatively impact both financial expenditures and quality performance measures for health providers. Research has pointed to hospitals as an important site for focused tobacco cessation services. Inpatient smoking cessation programs have been shown to be effective as clinicians play an important role in convincing and guiding patients onto the path of smoking cessation. At Albany Medical Center, inpatient tobacco cessation services are provided to patients who state that they are smokers on the initial nursing intake form and who request tobacco cessation intervention. A significant portion of cessation services are provided by trained pre-clinical medical students as part of the Medical Student Tobacco Cessation Consult Service (MSTCCS), an Office of Community Outreach and Medical Education service learning opportunity.

The purpose of this project is to describe the impact of the MSTCCS on the pre-clinical training of the participating medical students and to determine the efficacy of the program in encouraging tobacco cessation among patients. Inpatients who receive tobacco cessation counseling through the MSTCCS will be contacted 30-days post the cessation consult to assess for changes in their smoking status and in their readiness to quit tobacco. Patients interviewed during the pilot phase expressed appreciation for the individually tailored consults provided by MSTCCS and identified areas for improvement in the quality of the tobacco cessation consults they received. This study is being extended to obtain a greater sample size, and to elicit the value of the MSTCCS to the medical student experience as well as to hospital services. These results will serve as a foundation for a future expansion of the MSTCCS, including the development of a protocol to assess patient tobacco status post-discharge for every patient, a Joint Commission national hospital inpatient quality measure.
Developmental Changes in Dual Memory Processes from Early to Late Adulthood

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Contemporary dual-process theories of memory assume that recall is controlled by two independent memory processes: verbatim and gist. Verbatim traces preserve the specific surface details of an event, while gist traces preserve the meaning of it. In recall, retrieval of verbatim and gist traces is controlled by direct access and reconstruction, respectively. The developmental changes in cognition that occur from early to late adulthood are often characterized by declines in memory performance. In this study, we investigated the nature of such developmental declines in recall via application of a Markov model that measures the retrieval processes that control recall, namely direct access, reconstruction, and familiarity judgment. Healthy younger and older adults participated in a longitudinal study composed of three main sessions spanning roughly 1 year. Subjects received batteries of neuropsychological tests, provided health and demographic information, and received associative recall tests, in which subjects were presented with 30 pairs of familiar words (e.g., coke – pencil) and then asked to recall these pairs (e.g., coke - ?). Model parameters were reliable at the level of individual subjects and indicated that at the baseline session, direct access accounted for most of the developmental declines in recall between younger and older adults. In addition, older adults with symptoms of cognitive impairment used less reconstruction than healthy older adults. We discuss such findings in light of current dual-process theories and their implications to the markers of healthy and non-healthy aging.

Contrast Sensitivity Visual Acuity is Degraded in REM Sleep Behavior Disorder

Authors: Jacqueline M. Sanchez, M.S., Matthew J. Khayata, B.S., Whitney B. Hough, B.S., Peggy Vogt, B.S., Eric M. Keasler, B.S., Garrett Barr, B.S., David Y. Huang M.D., Charles G. Maitland M.D.
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Hypothesis: If dopamine deficiencies have been demonstrated in both Parkinson’s Disease and REM Sleep Behavior Disorders (RBD), and Contrast Sensitivity Visual Acuity (CSVA) deficits have been reported in early-stage Parkinsonism, then we therefore speculate that CSVA might be impaired in individuals with REM Sleep Behavior Disorder as well.

Methods: 18 RBD patients and 29 control subjects. Participants completed a visual function questionnaire. Tests included: SLOAN CSVA wall charts at 100%, 2.5%, and 1.25%, and general ophthalmologic and neurological examinations. Spectral Optical Coherence Tomography (OCT).

Exclusion criteria: Visual acuity <20/40, co-morbid ophthalmologic pathologies, and dementia. Results were submitted to independent-samples t-test for statistical analysis.

Results: There was a statistically significant difference in mean contrast sensitivity between RBD and controls, with the RBD group scoring lower than the aged matched control group 6.379 ± 3.06 [mean ± standard error], t(45) = 2.08, p = 0.043.

Conclusions: CSVA is diminished in patients with RBD. It seems plausible that visual deterioration is a consequence of misfolded alpha-synuclein in the inner retinal layers.
A Pilot Study: Parents Show Evidence of Post-traumatic Stress Disorder (PTSD) While Children Display Anxiety following Childhood Stroke

Authors: Laura Lehman MD, Kristin Maletsky BA, Fareesa Islam MPH, Michael Rivkin MD, Christine Mrakotsky PhD
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Poster Number: 83

Hypothesis: PTSD is a common mental health condition diagnosed in parents and children following life-threatening pediatric illness or injury. The prevalence and significance of PTSD in parents and children following a childhood stroke is unknown. We hypothesize that in our cohort of 33 parents and 10 children, some will meet criteria for PTSD following recent stroke in the child.

Methods: We prospectively enrolled parents of children aged 0-18 and children aged 7-18 who are followed at Boston Children’s Hospital and were diagnosed with a stroke in 2013 or 2014. Parents were screened for PTSD using the PTSD checklist and children ≥ 7 years of age were screened with the UCLA PTSD Reaction Index. Emotional outcome of the child was examined with the Behavior Assessment System for Children. Parents indicated their child’s stroke outcome using the Recurrence and Recovery Questionnaire (RRQ).

Results: Of 33 parents, 18 (55%) met one or more of the PTSD criteria and 8 (24%) met all criteria for PTSD. Although not reaching significance, RRQ scores were higher in the group of parents with PTSD (M= 1.2, SD=1.4) compared to parents without PTSD (M=0.6, SD=1.0). Although very preliminary, no children in the subsample met all of the criteria for PTSD, however 2 of the 9 (22%) had clinical levels of anxiety.

Conclusions: Preliminary findings reveal a rate of PTSD in parents of children with childhood stroke similar to that in parents of other critically ill children. We did not detect PTSD in our subsample of children, however, 22% had clinically significant levels of anxiety. Higher RRQ scores in children of parents with PTSD reflects increased disability, which may be related to parental PTSD. PTSD in parents and children with anxiety following stroke could impede compliance with medical and developmental interventions and lead to poorer functional outcome in both the child and family system.

Perinatal Depression Screening In The Obstetrics Clinic And Link To Birth Outcomes

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Poster Number: 84

This study aims to 1) improve detection and treatment of perinatal depression in the ambulatory setting 2) to provide convenient, patient-centered intervention methods that flow with the individual clinic setting and 3) connect patients with community mental health resources. The study also aims to help clinics identify specific needs unique to the local area and increase overall awareness of the link between perinatal depression and birth outcomes.

An encompassing list of mental health resources in Pensacola was created by the research investigator and distributed to staff at Sacred Heart Hospital Women’s Clinic (SHHWC). Participants (n=58) were English-speaking pregnant women 18 and older presenting for prenatal care at SHHWC in Pensacola, Florida. Participants at any stage during pregnancy were included. The screening tool was developed by Women & Mood Disorders Network.
Age, background, annual household income, highest level of education, and relationship status were factors included in the survey. Depression and anxiety history were also included. Women reporting a previous diagnosis of depression was 29.8% (17) and 7.8% (4) scored a 10 or above on the PHQ-9. A total of 83.6% (46) reported a previous diagnosis of anxiety and 13.5% (7) scored a 10 or above on the GAD-7. Following the birth of each participant’s baby, PHQ-9 scores and key perinatal metrics were extracted from the medical record.

The results will provide crucial information needed to improve detection of and treatment of perinatal depression. Survey results will also highlight needs unique to clinic patient population and identify opportunities to improve depression treatment, particularly under-served women in the Florida. As expected, a link between depression risk factors and birth outcomes was found.

A Biomechanical Comparison of 2 Suture Types in the Repair of an Achilles Tendon Rupture

Authors: Van Dyke Rufus, Trimba Roman, Gould Gregg, Chaudhary Sejul, Lee Jessica, Laughlin Richard
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Poster Number: 85

Hypothesis: Acute midsubstance Achilles tendon rupture is a common orthopedic problem for which the optimal suture selection for surgical fixation remains controversial. This project compares the relative strength and stiffness of two proprietary non-absorbable braided sutures.

Methods: 10 fresh frozen cadaver Achilles tendon pairs were cut 4 cm proximal to the calcaneal insertion and randomized to undergo repair with either #2 Fiberwire (Arthrex) or #2 Ultrabraid (Smith & Nephew). Each was repaired with a Giftbox modified Krackow stitch and an epitendinous cross-stitch. Cyclic loading was performed on each repaired tendon using an Endura-tec test frame with the parameters of 10-100 N at 2 Hz. Displacement at the tendon-tendon interface was measured with calipers after 500 and 1000 cycles; after which, load-to-failure testing was completed and mechanism of failure qualitatively described.

Results: There were no failures during cyclic loading. Fiberwire tolerated a mean load of 361 N, compared to a mean of 239 N with Ultrabraid (p=0.006) before reaching “clinical failure”, defined as a 5 mm gap at the tendon-tendon interface. Fiberwire exhibited less displacement than Ultrabraid after 500 cycles (mean: Fiberwire = 1.18 mm, Ultrabraid = 1.36 mm, p= 0.20) and 1000 cycles (mean: Fiberwire = 1.69 mm, Ultrabraid = 1.88 mm, p = 0.33), but the differences did not reach statistical significance.

Conclusion: Our load-to-failure values were superior or equivalent to findings reported in previous similar studies. Ultrabraid appeared to pull-through tissue more easily, potentially leading to the lower observed clinical failure values. Overall, the high load-to-failure values observed with this repair may be due to load-sharing throughout the construct, particularly at the proximal and distal ends where the opposing suture arms interlock. Achilles tendons repaired with the Giftbox technique and #2 Fiberwire suture exhibited superior biomechanical characteristics in comparison to repairs completed with Ultrabraid.
Efficacy and Compliance with Anastrozole for the Treatment of Late Onset Hypogonadism

Authors: Stephenie Le, Paul Feustel, Andrew McCullough
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Poster Number: 86

Introduction: Late-onset hypogonadism (LOH) is predominantly secondary. The pharmacokinetics of anastrozole (AZ), a reversible inhibitor of the aromatase p450 enzyme, make it an ideal treatment for secondary hypogonadism. Despite its efficacy in normalization of testosterone, there are no reports of patient compliance outside of sponsored clinical trials.

Objective: Review the efficacy and compliance with aromatase inhibitor therapy for the treatment of LOH in a urological practice.

Methods: The records of 82 men (age 53 +/- 13) with at least a 12 month follow-up (June 2011-July 2013), treated with AZ therapy 1mg daily for LOH were evaluated. Inclusion criteria were symptomatic hypogonadism and serum testosterone levels (TT) ≤ 350ng/dl. Outcome measures were percentage of patients who normalized TT > 350ng/dl and compliance to medication at 12 months. Patients were seen at 7, 18, 42, and 66 weeks. Adverse events were recorded.

Results: Mean TT prior to therapy was 233 +/- 73ng/dl. Mean TT post therapy was 544 +/- 182 ng/dl. The highest TT measured in patients on AZ therapy alone was 939ng/dl. At a median of 47 days, 76 out of 82 patients normalized TT > 350 ng/dl (92% success rate).

Treatment compliance at 7 weeks was (0.94, 95% CI [0.81-0.99]) with a mean testosterone of (462 +/- 176ng/dl). At 12 months, compliance was (0.65, 95% CI [0.55-0.75]), with a mean testosterone of (495 +/- 196ng/dl). Patients lost to follow-up were considered noncompliant.

An adverse-event profile showed most common side-effects to be joint pain (6), headache (3), loss of libido (1), and diarrhea (1). 17 patients gave nonspecific symptoms.

Conclusions: Anastrozole is well tolerated and clinically efficacious for the normalization of serum testosterone, with an 89% success rate. No patients demonstrated supraphysiologic levels of testosterone. Adherence to medication (65%) is superior to that of transdermal gels (15% in another adherence study).

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Transient Receptor Potential Vanilloid 2 is a mediator of left ventricular hypertrophy

Authors: Xu Gao MS, Jack Rubinstein MD, Mindi Naticchioni BS, Sheryl E. Koch PhD, Valerie M. Lasko MS, John Lorenz PhD
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Poster Number: 87

Hypothesis: Impaired calcium handling has been implicated in the development of left ventricular hypertrophy (LVH) and subsequent development of heart failure (HF). We have recently shown that the calcium channel Transient Receptor Potential Vanilloid 2 (TRPV2) is present in cardiomyocytes and regulates contractility on a beat to beat basis. This study was performed to elucidate if TRPV2 also modulates the development of LVH in a pressure overload mouse model via transverse aortic constriction (TAC).
Methods: WT and TRPV2-/- mice were subjected to pressure overload via TAC and followed echocardiographically for 8 weeks. A subgroup of WT mice were treated with a nonspecific TRPV2 antagonist (tranilast) for the same amount of time. At the conclusion, the hearts were collected for molecular and histological analysis of hypertrophy.

Results: There was significantly less hypertrophy in TRPV2-/- and in the WT mice treated with tranilast (n=5 and 2) in comparison to untreated WT mice (n=7) as noted via heart weight: body weight ratio and LV mass via echocardiography (P<0.05; TRPV2 vs. untreated WT). Furthermore, there was a trend towards improved contractility and less LV cavity dilation in the TRPV2-/- and the WT treated mice in comparison to untreated mice.

Conclusions: We have shown that TRPV2 modulates the development of LVH and is a potential target for the prevention and treatment of LVH and development of HF.

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Role of anaerobic bacteria in polymicrobial infections

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Poster Number: 88

Polymicrobial wound infections can manifest in a variety of different ways, ranging from necrotizing soft tissue infection (NSTI) to chronic infections, and often result in fatalities, especially in those with co-morbidities. Such infections can consist of both aerobic and anaerobic bacterial, as well as fungal and viral sources. The role of anaerobic bacteria, however, have not yet been well characterized. In order to further understand this important aspect of polymicrobial wound infections, we used two of the most problematic wound bacteria, Staphylococcus aureus (Sa) and Clostridium perfringens (Cp), to model chronic wound infections both in vitro and in vivo. Sa is facultative anaerobic bacterium ubiquitous in the environment and is known to produce biofilms, which are communities of microbes attached to a surface and protected by a thick, extracellular polymeric substance (EPS). Cp is an obligate anaerobic bacterium most known for causing gas gangrene. We asked how the presence of Cp affected the growth and virulence of Sa. Using an in vitro wound-like model, our preliminary data showed that in an aerobic environment, Sa grew up to three times faster when cultured with Cp than when grown alone. Sa/Cp co-infections showed evidence of increased virulence when compared to other polymicrobial combinations in mouse chronic wounds, with the Sa/Cp co-infection sometimes resulting in sepsis. Future research efforts will be directed towards solidifying current data, elucidating the underlying mechanisms of this potential synergy in regard to virulence, and understanding if a similar phenomenon occurs with other common wound co-infections such as those involving Streptococcal pyogenes and Bacteroides fragilis.

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Predictors of Biological Potency of Human Connective Tissue Progenitors

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Poster Number: 89

Hypothesis
The goal of this study was to test the hypothesis that a combination of unique genetic signatures and permissive cell culture systems can be used to identify therapeutically relevant subpopulations of connective tissue progenitors (CTPs) from human bone.
Methods
Discarded samples were collected from several electric hip arthroplasties under IRB exempted protocol at the Cleveland Clinic. Following several days of in vitro culture, cells were examined for colony formation ability and the expression of several markers indicative of pluripotency by immunocytochemistry and quantitative PCR.

Results
Marrow cells demonstrated higher levels of stem cell-associated gene expression and embryonic surface markers in colony forming cells, compared to those of the trabecular surface. These data validate our hypothesis that subpopulations of adult bone tissue express genes indicative of embryonic pluripotency, and may provide novel markers to purify therapeutically relevant cells from adult human tissue.

Conclusions
Certain donors present tissue samples with enriched markers for pluripotency & multipotency, indicating potential to regenerate masses for potential clinical use. The marrow space appears to be predictive of colony forming ability. Ongoing studies are aimed at characterizing the total number of these cells at the time of harvest, and examining the prevalence of these cells during different cell culture regimes. Future studies aim to purify these cells and examine their role in an animal model of osteoporosis and/or fracture healing.

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**Does Offering Free Breast Cancer Screening Make a Difference? – A 3-year Review of a West Texas Free Breast Screening Program**

Authors: Nicole Alavi-Dunn, Yana Puckett, MD, Mohammad Abedi, PhD, Arrington Hayes, Barbara Garcia, Candy Arentz, MD, FACS
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**Disclosures:** Myriad Genetics - speakers bureau (Dr. Arentz)

Hypothesis: We aimed to establish whether free breast cancer screenings influenced the rate of subsequent screenings in noncompliant women, to determine the number of breast cancers detected, and to find the percentage of diagnostic imaging done as a first test on our population. We hypothesized that compliance rates would increase with mammograms and education from the free clinic regarding: breast cancer screening, cost coverage, and treatment options.

Methods: A retrospective chart review of 527 free breast cancer screenings was performed at a West Texas cancer center from 2010-2013. Baseline demographics, mammogram screenings, and breast cancer diagnoses were assessed. If cancer was diagnosed, we investigated whether national treatment guidelines were followed. A p-value of <0.05 was considered statistically significant.

Results: The median age of the women screened was 50.6. Of the 285 women who disclosed financial information, 60 had an income ≥200% poverty line. Of the 527 free breast cancer screenings, 116 had not had a previous mammogram. Of these 116, 18 were compliant, returning for a follow-up mammogram within 12 ± 2 months. Of 317 previously noncompliant women screened, 76 had follow-up mammogram within 14 months. Eleven women returned for a subsequent mammogram outside the recommended window. Breast cancers were detected in 11 of 527 patients.

Conclusions: Our overall compliance rate (19.9%) was lower than national compliance (50-70%). Of 527 mammograms included in our study, 22.4% first mammograms were diagnostic, over 2x higher than the national average (10%). Our recall rate was 29.1%, nearly 3x the national average (10%). Cancer detection rate in our study...
was 20.87 per 1000, more than 4x the national average (4.91/1000). Implementing free mammogram screening programs will likely translate into more desirable rates, resembling national statistics.

Understanding the Stories of "Super-Utilizer" Patients through Hotspotting on Tobacco Road: An Interprofessional Narrative-Based Approach to Reduce Rehospitalizations and Provide High Value Care

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Poster Number: 91

Hypothesis: The top 1% of patients with multiple rehospitalizations account for 20% of the U.S.’s $2.9 trillion annual healthcare expenditure. We hypothesized that creating interprofessional individualized care management plans for patients with complex medical/social needs and multiple rehospitalizations through narrative-based “hotspotting” would reduce healthcare costs, decrease rehospitalizations, and improve health outcomes.

Methods: In this qualitative study, an interprofessional team of medical/social work/pharmacy/public policy/business/divinity students at UNC-Chapel Hill and Duke University identified six "super-utilizer" patients with complex medical/social histories and recurrent hospitalizations to follow for 3-4 months. We collected patient narratives to examine underlying factors contributing to patients’ health status/use of healthcare, conducted home visits, accompanied patients to clinic appointments, interviewed providers, assisted patients with health system navigation, and reviewed medical records. Enrolled patients had >3 hospitalizations in the past year at UNC/Duke and >3 comorbidities. Patients under 18 years were excluded. Our project was funded through an AAMC “hotspotting” minigrant.

Results: All enrolled patients had multiple unmet social/health needs and >6 comorbidities, most commonly diabetes, dental problems, and depression. The two patients retained throughout the study had 7-10 hospitalizations in the past year with 34-124 inpatient days. One patient had a $300,000 reduction in healthcare costs. Both patients had stable housing and/or existing social support, and cited multiple system-level failures contributing to their hospitalizations. Neither was rehospitalized during the study. The four patients lost to follow-up had less stable housing, a higher incidence of substance abuse, and were less likely to have a primary care physician.

Conclusions: Our findings highlight the importance of understanding patient narratives to develop interprofessional interventions that comprehensively manage clinical/social needs, reduce costs, and improve health outcomes. However, patients with significant social barriers in greatest need of narrative-informed care may be the most difficult to retain in interventions, and require novel approaches to achieve optimal health.
Speckle Tracking Echocardiography to Screen for Pulmonary Hypertension in Chronic Obstructive Pulmonary Disease

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Poster Number: 92

Background: Pulmonary hypertension (PH) is a common complication of chronic obstructive pulmonary disease (COPD) and is associated with increased morbidity and mortality. Echocardiographic measures as currently employed have poor predictive value for the diagnosis of PH in COPD. Lung hyperinflation makes it difficult to get adequate imaging windows for measurement of the tricuspid regurgitation gradient, which is highly dependent on proper image acquisition angle and is the primary means of estimating pulmonary artery pressure (PAP) by echocardiography. Right ventricular (RV) strain obtained by speckle tracking echocardiography (STE) is a novel echocardiographic measurement of myocardial deformation which correlates with RV function, PAP, and survival in subjects with PAH. We hypothesized that RV strain estimates would be feasible and more readily obtained than estimated Right Ventricular Systolic Pressure (RVSP) by tricuspid regurgitation velocity in subjects with severe COPD, and that RV strain would correlate with invasive hemodynamic measurements.

Methods: Retrospective analysis of RV strain values using standard apical views from 54 subjects with severe COPD and echocardiogram performed within 48 hours of pulmonary artery catheterization.

Results: RVSP was obtained in 31%, while RV strain was obtained in 81% of subjects. Absolute values of RV strain correlated inversely with pulmonary vascular resistance (PVR) (r² 0.17, p 0.02). Subjects with a PVR>3 Wood Units (WU) were compared to those with PVR ≤ 3 WU. Median RV free wall strain for subjects with PVR ≤ 3 WU was -23 versus -20 for those with PVR >3 WU, p 0.05. A receiver operating characteristic curve demonstrated a RV free wall strain of -24 to be 92% sensitive and 42% specific for identifying PVR>3 WU (AUC 0.74).

Conclusions: RV strain measurements can be obtained in the majority of subjects with severe COPD, and in a higher percent than RVSP. Absolute values of RV strain vary inversely with PVR and may improve screening for PH in subjects with COPD. Our results suggest that the limitations imposed upon routine echocardiographic screening techniques by severe COPD are significantly reduced or eliminated using STE without requiring additional studies. In addition, an absolute strain value can identify COPD patients with pulmonary vascular disease.

Ethnic Differences in Non-Small Cell Lung Cancer (NSCLC) Genetics

Authors: Alice Kim, Jennifer Mourafetis, Pharm.D., Luis Raez, M.D.
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Poster Number: 93
Disclosures: L. Raez: Research support from Response Genetics, Caris Life Sciences, Genentech, BMS, Pfizer, Boehringer-Ingelheim, Roche.

Lung cancer is the leading cause of cancer-related mortality in the United States and around the world. An overwhelming majority is due to non-small cell lung cancer (NSCLC), which is often times diagnosed at locally advanced or metastatic stages. In recent years, mutations of numerous genes have been identified for NSCLC with the goal of providing individual, tailored therapeutic agents that target specific molecular pathways. In our study, we investigated if patient ethnicity is a significant factor in the profile of genetic mutations and translocations. We extracted molecular markers of 260 patients with NSCLC and explored if certain markers are over- or under-expressed in the populations of Non-Hispanic Whites, Hispanics, and African-Americans.
Molecular markers (ALK, BRAF, c-KIT, EGFR, ERCC1, HER2, KRAS, MAP2K1, PIK3CA, PTEN, RET, ROS1, RRM1, T790M, TS) were reviewed and recorded in 260 patients diagnosed with metastatic NSCLC at Memorial Cancer Institute. Not all markers were available for the entire study population due to a recent expansion of the molecular marker panel. Using SPSS® software 21 for statistical analysis, patients were divided into groups based on their ethnic background. Chi-square and Fisher’s Exact tests were used to assess significant associations between genetic profile and ethnicity. A p-value of 0.05 was considered significant.

Our preliminary data using 161 patients demonstrated that there is no significant differences (p>0.05) in gene expression profiles between patients of different ethnic groups presenting with NSCLC. The absence of statistical significance may reflect a type I error due to a relatively small sample size. After incorporating the entire data analysis of 260 patients, we expect results may differ.

Predictors of post-operative intra-abdominal abscess in pediatric perforated appendicitis

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Poster Number: 94

Background: Appendicitis is one of the most common surgical conditions seen by pediatric surgeons. In children, about 25% present with perforation. The most common post-operative complication seen in perforated appendicitis is intra-abdominal abscess with an incidence that ranges from 3% to 29.3%.

Objective: Our study aimed to identify preoperative predictors of post-operative intra-abdominal abscess formation in perforated appendicitis.

Methods: A retrospective chart review of all appendectomies between June 2012 and July 2014 was performed. The preoperative data included age, gender, initial temperature, clinical findings (peritonitis), WBC (leukocytosis), abdominal pain for more than 48 hours (pain) and imaging (US and/or CT consistent with perforation). Post-operative data consisted of intra-abdominal abscess recorded within a 30 day post-operative period.

The predictors were identified using binary logistic regression technique. The odds ratio (OR) and 95% confidence intervals (CI) were adjusted by age and gender. The result was statistically significant of p≤0.05.

Results: A total of 225 appendectomy cases occurred between June 2012 and July 2014. The number of cases that were found to be perforated was 61 (27.1%). The post-operative intra-abdominal abscess rate in the perforated appendicitis cases was 34.4% (21/61) seen in Fig. 1.

Univariate analysis revealed that age and gender, as single variables, were the only strong predictors of the outcome. Logistic regression revealed that certain pattern of predictors when seen together were significant risk factors for the outcome. Leukocytosis was shown to have a strong effect when combined with peritonitis (OR 3.18) or with >48 hours of pain (OR 4.56). The combination of leukocytosis, peritonitis and >48 hours of pain were shown to have a significant effect on the post-operative outcome (OR 3.74).

Discussion: The study revealed that single clinical variables by themselves are not strong predictors of post-operative abscess formation. This may be due to the small sample size. The study showed that a certain pattern of multiple risk factors at once could be predictive of post-operative complications, as would be seen in actual clinical
Changes in Sensory Thresholds with High Frequency Spinal Cord Stimulation: A Quantitative Study

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Poster Number: 95

Disclosures: Dr. Pilitsis is a consultant for Medtronic, Boston Scientific and St. Jude and receives grant support from Medtronic, Boston Scientific, St. Jude and NIH 1R01CA166379.

Background High frequency stimulation (HFS) recently has gained attention as an alternative to parameters used in traditional spinal cord stimulation (SCS). Because HFS is paresthesia free, the gate theory of pain control as a basis of SCS has been called into question. The mechanism of action of HFS remains unclear.

Objective We compare the effects of HFS and traditional SCS on quantitative sensory testing parameters to provide insight into how HFS modulates the nervous system.

Methods Using quantitative sensory testing, we measured thermal detection and pain thresholds, mechanical detection and pressure pain thresholds, as well as vibratory detection in 20 SCS patients OFF stimulation, traditional stimulation (ON), and on HFS in a randomized order.

Results HFS significantly increased mechanical threshold detection as compared to OFF stimulation (P < .001) and traditional SCS (P = .01). Pressure pain detection and vibratory detection thresholds also significantly increased with HFS compared to ON states (P = .04, p=0.01 respectively). In addition, HFS significantly decreased 10g and 40g pinprick detection as compared to OFF states (P = .002 and P = .01 respectively). No significant differences between OFF, ON and HFS states were seen in thermal and thermal pain detection.

Conclusion HFS is an innovative means of modulating chronic pain. The mechanism by which HFS works seems to differ from that of traditional SCS, offering a new platform for innovative advancements in treatment and a greater potential to treat patients by customizing waveforms.

A Cluster Sample to Assess Online Availability of Sexual Assault Policies of United States Colleges and Universities

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Poster Number: 96

Hypothesis: While all publically funded colleges and universities are required to disseminate sexual assault policies, a significant number of schools do not have online accessibility of these policies.

Methods: A cluster sample of 424 colleges and universities has been prepared from US public, private, and two-year public schools (n=3379). The cluster was a random sample based on region (Northeast, Midwest, South, West), and religious affiliation. A survey was disseminated to the Big 10 categories of the social media website Reddit. Survey users chose their top five of 15 terms to describe sexual assault. The top three terms chosen by 22 respondents
became the criteria for easy accessibility (term 1 = “sexual assault policy”, term 2 = “sexual harassment policy”, term 3 = “rape policy”). Each school in the cluster sample was searched using Google and the three terms.

Results: Of the 424 colleges in the sample, 77 (18.2%) did not have a sexual assault policy that was easily accessible online. There was a higher percentage of religious schools did not have a policy (26.4%) compared to nonreligious (14.7%) (p<0.005). The odds of having a sexual assault policy at religious schools were lower than non-religious schools (Odds Ratio= 0.481, 95% CI: 0.289-0.801, p<0.001). Public-non-religious schools were more likely to have an accessible policy compared to private-religious schools (Odds Ratio=2.387, 95% CI: 1.367-4.168, p<0.005). There was no difference between regions (p=0.8251). Sensitivities for the terms “sexual assault policy”, “sexual harassment policy”, and “rape policy” had a sensitivity of 94.2%, 85.0%, and 86.7% respectively.

Conclusions: More than 18% of colleges do not have a readily accessible online sexual assault policy. Private religious schools are the most likely to not have an accessible sexual assault policy. Enhancing access to online sexual assault policies presents an avenue to improve sexual health on college and university campuses.

The Policy That Wasn’t: Surveying the Maternity Leave Policies of Indianapolis-Area Healthcare Systems

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The United States is one of only four countries that does not set national standards regarding paid maternity leave policies for working mothers. On a national level, 70% of working mothers took time off of work during their last pregnancy. In Indiana alone, over 83,000 women gave birth in 2013. In the greater Indianapolis area, the healthcare system serves as a microcosm of the national workforce. Of the 38,000 healthcare positions in this region, 48% are filled by females. Thus, it is important to address the lack of maternity leave legislation as it affects so many working mothers on both the national and state level.

Eight Indianapolis area hospital systems were surveyed (including IU School of Medicine), and none provided paid maternity leave for its employees. Mothers are left with the option of deferring to the national Family and Medical Leave Act (FMLA), which allows for twelve weeks of unpaid leave following delivery. In addition, in certain hospital systems, employees can use accrued short-term disability if they are both eligible to apply for such benefits and have applied for coverage prior to the pregnancy.

The greater Indianapolis healthcare systems were surveyed as a representation of the workforce as a whole and found to have varying policies regarding the time off given to new mothers. All were the same in that they provided no paid leave. As probable future working mothers, this issue is of great importance. It must be recognized that these findings add undue burden to mothers and infants. Only three states have created a paid family leave policy, and though national bills have been proposed, they have not been fully supported. With so many affected by this lack of policy, changes must be made to better serve working mothers in the state of Indiana and the nation as a whole.
Stigma and medical needs within Arab American and Muslim children with disabilities in Southeast Michigan

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Poster Number: 98

Hypothesis: Based on community experience, it was anticipated that various cultural and religious stigmas and perceptions would decrease the likelihood that the medical needs of children with disabilities were being met within the Arab American and Muslim population in Southeast Michigan.

Methods: Using a qualitative design, semi-structured oral interviews were conducted in both English and Arabic, usually lasting more than one hour. Participants were recruited via phone calls, newsletter advertisements, and through a snowball recruitment method. All interviews were anonymous and privately conducted with a $10 compensation offered. Specifically the study looked to investigate five components: parent-based demographics, child-based demographics, child’s medical needs, medical anthropological understanding of disease, and community perceptions and stigma.

Results: The total number of participants interviewed was thirteen. Although participants expressed a wide range of beliefs regarding cultural and religious stigmas, none reported that it served as a barrier to accessing health care, nor did it impede meeting the child’s medical needs. Instead, parents expressed beliefs and experiences related to their own shame, blame, and pity, which often contributed to their increased stress levels. These previous negative experiences also further decreased the likelihood that participants were comfortable discussing their child’s disabilities with other community members, contributing to the growing stigma.

Conclusions: Contrary to the original hypothesis, children with disabilities had their medical needs met via the school system and government programs, as reported by their parents. Rather this study found that there is a need for further disability awareness and education in order to address negative community stigma across all age ranges in the Muslim, Arab community. Additionally, support services and mental health resources including Arabic-speaking support groups were also among the various interventions expressed by participants.

Someone like Me: The Effects of Pipeline Programs on the Diversity of the Medical Field

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Hypothesis: Increasing diversity in medical school can have a direct effect on reducing the health disparities that exist in the United States. Despite an increasingly racial/ethnically diverse population, less than 6% of all licensed physicians in the United States identify themselves as African American or Hispanic.

Purpose: The purpose of this study was to review the data supporting the need to increase the number of underrepresented minorities in medicine, and to identify programs and strategies that have been used by medical schools to achieve these goals.

Methods/Results: Studies on racial and ethnic congruency in medicine showed that diversity enhancement in medicine can narrow healthcare disparities. Multiple approaches to foster engagement of underrepresented minorities in the medical field were identified. We reviewed published data from summer pipeline programs...
implemented at fifteen medical schools between 1970 and 2001 and characterized their programs, based on demographic characteristics, types of programming and activities delivered and characteristics of each summer program.

Along with restructuring of the admission criteria, the implementation of pipeline programs has been identified as a promising tool to increase minority representation in medicine.

Summer pipeline programs provided a strong emphasis in exposing students to the basic science curriculum, as well as reading and learning skills. Most program participants were successful in matriculating to medical schools, and those who matriculated saw the pipeline programs as helpful tools in their adjustment into medical school.

Conclusion: The implementation of pipeline programs has helped medical schools enhance their diversity, and in some institutions, this has translated to a more diverse faculty. Along with the benefits that a diverse environment would bring to an academic institution, increasing the number of underrepresented groups can improve healthcare access for minority groups. We conclude with a call for pipeline programs in order to increase diversity in the medical field.

Correlates of Resilience and Self-Esteem Among Unstably Housed Women

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Poster Number: 100

Resilience is an important characteristic by which one responds to stressful life events and plays an integral role in managing health behaviors. While resiliency has been well-studied among homeless teens, veterans, and trauma victims, little work has explored correlates of resilience among unstably housed women. Unstably housed women have high rates of exposure to violence, substance use, and mental illness. Resiliency may inform how well women adapt to such stressors and provide insight in how best to identify and meet their psychological and social service needs.

This project used survey data obtained from a larger three-year study on 152 HIV+ and 148 HIV- unstably housed adult women in San Francisco, CA. Women were recruited from free meal programs, homeless shelters, and single-room occupancy hotels. Participants completed extensive baseline surveys, in which the modified 10 item Resilience scale and the Rosenberg self-esteem scale were used to measure resilience and self-esteem. It was hypothesized that high resilience and self-esteem would correlate to lesser exposure to “negative factors” such as childhood sexual violence, and higher exposure to “positive factors” such as social support.

Resilience and self-esteem were compared to factors including HIV status, psychiatric diagnoses, violence, housing, and substance use. HIV+ women reported significantly higher resilience than HIV- women. Women with high resilience experienced significantly less recent cocaine use, less recent sex trade, and greater instrumental support as compared to women with lower resilience. Women with high self-esteem experienced significantly less childhood sexual violence in their childhood, less recent cocaine use, less recent sex trade, and greater instrumental support. These findings suggest that high resilience and self-esteem correlate with less cocaine use and less sex trade, and that instrumental support may play a key role in upholding resilience and self-esteem among unstably housed women.
What Are The Critical Components of a Patient-Centered Electronic Care Plan Tool That Facilitates Team-Based Care?

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Disclosure: Adrian Zai works part time (5%) for SRG Technology as VP of Healthcare Informatics

Hypothesis: A novel patient-centered electronic care plan (ECP) tool can facilitate the communication, coordination, and between-visit population management that are central to the provision of team-based care (TBC) in the patient-centered medical home.

Methods: The Phyllis Jen Center (PJC) is an academic Internal Medicine teaching practice at Brigham and Women's Hospital that provides primary care services to ~17,000 medically and socially complex patients. Information sharing, documentation, and task assignment are not standardized at the PJC, hindering effective TBC. A multidisciplinary PJC taskforce proposed that an ECP platform be embedded with existing electronic systems in order to alleviate these constraints.

Individual interviews with PJC team members informed initial development of the ECP tool. We then conducted a pilot in which a multidisciplinary group of team members met to discuss several complex patients and assign tasks for these patients via the ECP tool. Team members subsequently collaborated on and updated chosen patients’ ECPs for four weeks. One-on-one team-member feedback interviews were conducted post-pilot.

Results: In pre-pilot interviews, team members prioritized an ECP’s ability to, 1) provide a real-time summary of a patient’s comprehensive care needs, 2) display a patient’s most pertinent background information (e.g. best contact, language preference), 3) facilitate within-team task assignment and referrals, 4) organize tasks, both by user and patient, and 5) minimize the need for duplicative documentation or work. In the pilot, use of an ECP increased satisfaction with: 1) intra-team task assignment, 2) intra-team appointment referrals, and 3) accessing patient background information. It also made team members feel like they more often had a unified understanding of shared patients.

Conclusions: When used alongside meetings focused on complex patients, an ECP tool enhances within-team communication, coordination, and information-sharing, thus facilitating the practice of TBC. Crucial factors for adoption include integration with existing IT systems, avoiding information duplication, and development of clear accountability mechanisms.

Of Medicine and Mudras: Using Traditional Dance as a Novel Model for Approaching Women's Health

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Disclosure: Thomas J. Watson Foundation Fellowship Recipient 2013-2014

For centuries, traditional communities around the world have used dance to heal themselves, their homes, and their lands 10,11. However, medicine today focuses on the disease and patient as the center of the treatment model, with all other factors on the periphery of the illness11. This pathology-based focus (also noted as the “Positivist Model”11) is so overpowering in today’s global healing system that all modern arts-based therapies have followed
en suite to gain legitimacy and support. In the literature, dance movement therapy (DMT)—a therapeutic intervention based on the premise of “theoretical interdependence between movement and emotion”9—has proven effective in supporting patients, particularly women, to overcome diseases and disabilities that are often cited to negatively impact maternal and thus family health in general1,3,4,5,9,10. DMT incorporates elements of the positivist model with socio-ecological model of health. Due to its adherence to the modern positivist and social-ecological model of healthcare delivery, DMT is self-limiting in its scope to heal2,11. Specifically, DMT is limited by three main factors: (1) its basis in modern medical positivist theory of care and individual patient therapy, (2) its focus on solely dance without added factors of music, religion, identity, language, space, time, group members as the therapeutic intervention, and (3) its basis in Grecian-Western models of traditional dance. Dance contains more intrinsic healing ability when performed in its traditional setting, with traditional rites, rituals, community, foods, and the central role of women in each component of the performance. I present observations on the women’s role in three types of traditional dance cultures from Chile, Morocco, and Cambodia. Based on these on-site, experiential observations, I developed a novel model to approach women’s health through the arts and suggest that further study into traditional dance cultures has greater potential to improve women’s’ holistic health.

Rush Women Mentoring Program: A survey to assess the needs of women faculty

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Academic Affairs and the Office of Mentoring Programs established the Rush Women's Mentoring Program at Rush University. We aim to create a comprehensive program that facilitates women faculty members’ pursuit of specific career goals within a supportive and engaging environment. To assess the needs, we composed a survey that contained 35 questions and inquired about women faculty concerns with their careers, their confidence level regarding general skills, leadership experience, and their willingness to engage in the program as a mentor or mentee. The survey was sent to 500 women faculty and 29.4% (n=147) responded. Sixty percent of the responders were assistant professors, followed by 17% associate, and 13% full professors. Postdoctoral fellows and instructors constituted the balance. The average tenure for this pool was 9.5 years. Areas of concerns were: obtaining research funding, progress in their field of work, and finding a mentor to help with career advancement. Areas of least confident included extramural research funding and negotiating successfully for their own careers. Although 90% of the participants have served as a mentor at any point during their career, only 47% have served in a leadership role in their departments. Eighty percent agreed that establishing an institutional women mentoring program will provide campus-wide opportunities for networking and help to improve the University culture in regards to diversity and issues specific to career advancement for women faculty. The top three priorities for mentoring were career guidance, leadership development, and professional networking. To address these issues, we are paring junior with senior faculty based on their field of expertise and career goals. We created guidelines for mentors and mentees to facilitate their interactions and maximize meeting productivity. We also started leadership development workshops and formal and informal meetings to facilitate networking and create the “sense of belonging”, especially important for junior faculty.
Assessing Seasonal Differences in Mental Health Interventions by the Parson’s Child and Adolescent Mobile Crisis Team (CRCAMT)

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Poster Number: 104

Hypothesis: In one calendar year of Capital Region Child and Adolescent Mobile Team operation there will be a difference between assessments performed and clients served during the school year and over the summer months.

Methods: Clinical and demographic information for clients seen by the CRCAMT from September 3, 2013 through June 30, 2014 was compared against information for clients seen from July 1, 2014 through September 1, 2014.

Results: A total of 846 assessments were performed with 761 seen during the school year (September 2013 – July 2014) and 85 seen during the summer months (July 2014 – September 2014). There was no statistical difference in the demographic data of clients seen during the year (race/ethnicity, gender). However, calls during the summer were nearly 2 times more likely (Odds Ratio: 1.98) to take place from 3pm-9pm compared to those during the year. Also, the urgency of the calls, measured by acuity, was more than 2 times more likely to be in the Extreme-High Urgency range during the summer compared to during the year (Odds Ratio: 2.03). There were also increases in the numbers and types of locations of on-site assessments, presenting diagnoses of the clients, and outcomes of assessments during the school year compared to during the summer months.

Conclusions: Differences in timing of calls and urgency of calls between the summer months and the year suggests that those seeking crisis intervention during the summer have generally more severe mental health needs that present in the late afternoon or evening. This may be attributed to the lack of school-imposed structure during the summer. Future studies could focus on creating more specific parameters to assess how the pre-existing diagnoses of the clients influence the severity of the presentation and whether or not these differ between the summer and year time frames.

A Cluster Sample to Assess Online Availability of Sexual Assault Policies of United States Colleges and Universities

Authors: Jamie Ehrenpreis, Aimee Alexoff, Ying Zhou  
Institution: Rosalind Franklin University of Medicine and Science  
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Poster Number: 105

Hypothesis: While all publicly funded colleges and universities are required to disseminate sexual assault policies, a significant number of schools do not have online accessibility of these policies.

Methods: A cluster sample of 424 colleges and universities has been prepared from US public, private, and two-year public schools (n=3379). The cluster was a random sample based on region (Northeast, Midwest, South, West), and religious affiliation. A survey was disseminated to the Big 10 categories of the social media website Reddit. Survey users chose their top five of 15 terms to describe sexual assault. The top three terms chosen by 22 respondents became the criteria for easy accessibility (term 1= “sexual assault policy”, term 2= “sexual harassment policy”, term 3= “rape policy”). Each school in the cluster sample was searched using Google and the three terms.

Results: Of the 424 colleges in the sample, 77 (18.2%) did not have a sexual assault policy that was easily accessible online. There was a higher percentage of religious schools did not have a policy (26.4%) compared to nonreligious (14.7%) (p<0.005). The odds of having a sexual assault policy at religious schools were lower than non-religious schools (Odds Ratio= 0.481, 95% CI: 0.289-0.801, p<0.001). Public-non-religious schools were more likely to have an accessible policy compared to private-religious schools (Odds Ratio=2.387, 95% CI: 1.367-4.168, p<0.005). There was no difference between regions (p=0.8251). Sensitivities for the terms “sexual assault policy”, “sexual harassment policy”, and “rape policy” had a sensitivity of 94.2%, 85.0%, and 86.7% respectively.
Conclusions: More than 18% of colleges do not have a readily accessible online sexual assault policy. Private religious schools are the most likely to not have an accessible sexual assault policy. Enhancing access to online sexual assault policies presents an avenue to improve sexual health on college and university campuses.

A survey analysis of electronic medical record implementation in academic dermatology practices across the United States

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Electronic medical record (EMR) use in the U.S. has grown substantially in recent years. A cross-sectional retrospective study of the National Ambulatory Medical Care Survey showed 52% of practices with EMR in 2010, but only 32.8% of dermatologists were using EMR. To explore this area, we used the online tool SurveyPro™, to survey 111 Chairs of allopathic academic dermatology programs in the U.S. regarding their attitudes towards EMR implementation in their programs.

The survey was emailed to each Chair three times and obtained a 23% response rate. All but one Chair reported EMR use in his or her department. The most commonly used EMRs were Epic™ followed by Allscript™/Eclipsys™ and Cerner™. Regarding reasons for adopting EMR, respondents ranked “Government Incentives” as most important, followed by “External Pressure to Adopt EMR”, “Decreased Need for Storage”, “Increased Efficiency”, “Decreased Costs Long-Term”, and “Increased Revenue Long-Term”. 36% of respondents Strongly Agreed or Agreed (44%) that “Electronic prescriptions can easily be sent with EMR.” 28% Strongly Disagreed or Disagreed (40%) that “Anatomic graphs with lesion mapping is easily used with EMR.” In regards to the statement “The practice is more efficient now that EMR has been implemented”, no respondents Strongly Agreed, only 8% Agreed, and 32% Strongly Disagreed or Disagreed (32%). 0% of respondents Strongly Agreed and 4% Agree that dermatologists “spend less time doing administrative tasks” with EMR, while 44% Strongly Disagreed or Disagreed (36%) with this statement. For the statement “The practice is more enjoyable now that EMR has been implemented”, 32% Strongly Disagreed or Disagreed (28%). Responses were more evenly distributed regarding ease of uploading photos, improved patient care, and satisfaction with current EMR.

Our results show a close to 100% EMR adoption rate in academic dermatology with government incentives and external pressure to adopt being primary reasons. While leaders in academic dermatology appreciate the ease of electronic prescriptions with EMR, many question whether EMR improves efficiency, administrative task burden, lesion mapping, or practice enjoyability.

Hypertension Education and Prevention in Adolescents Through a Medical Student Run Program

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Poster Number: 107

INTRODUCTION:
High blood pressure in adolescence is a strong predictor of hypertension in adulthood, and has been on the rise in adolescents. This study investigates whether a medical student run program can help aid in promoting healthy lifestyles, through education, that would reduce prevalence of hypertension and prehypertension in adolescents, and therefore in the adult population.
METHODS:
Seventh grade students in health class at a local middle school were recruited to participate and assent was obtained. Prior to the class intervention, 107 participants completed a baseline worksheet. Curriculum based on active participation and demonstration was taught to participants by a medical student. After the participants completed class activities associated with the hypertension lesson, 112 students completed a post-lesson worksheet. Responses to the baseline and post-class worksheets were then coded and analyzed for changes in attitudes and knowledge level.

RESULTS:
The study revealed 17.7% of students in the pre-lesson group could define or partially define “blood pressure” and 2.7% could define or partially define “hypertension”. Further, 5.3% could list at least two ways to prevent hypertension. After the lesson, 77.9% of students could define or partially define “blood pressure”, 81.5% could define or partially define “hypertension”, and 87.7% could list at least two ways to prevent hypertension.

CONCLUSION:
We present a medical student led program which was successful in increasing knowledge regarding blood pressure, hypertension, and hypertension prevention in the target population. Further studies are needed to assess long-term knowledge retention and lifestyle choices in adolescents.