

# FMSRJ

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RESEARCH JOURNAL

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and Research Symposium**

**FIU** | Herbert Wertheim  
College of Medicine  
FLORIDA INTERNATIONAL UNIVERSITY

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In 1963, a patent was issued for an innovation that revolutionized cardiovascular surgery — the first balloon catheter. Surprisingly, this brainchild of a medical student from the University of Cincinnati was initially rejected for publication by three mainstream surgical journals. Undeterred, this medical student, Thomas J. Fogarty, made the first balloon catheters by hand during his fellowship training and finally reported his experiences treating patients with emboli in 1965. Today, more than half a million Fogarty catheters are sold annually<sup>1</sup>.

Medical students have always contributed to the advancement of medical science, but navigating the strange waters of medical literature and scientific journals is not a task for the faint of heart. Publishing original works is a protracted process, fraught with disappointment and uncertainty. Nonetheless, undaunted medical students embark upon this path repeatedly, albeit with little guidance. This journal aims to bridge the gap during those early years of medical students' careers when unfamiliarity with publishing and peer-review are most prevalent.

Surprisingly, the peer-review systems we take for granted today hardly existed when Dr. Fogarty published his work in 1965. In fact, Nature magazine only adopted a formal peer-review system in 1967, almost 100 years after its inception in 1869<sup>2</sup>. At present, widespread formal training for peer reviewers does not exist, and many experienced reviewers admit that their brand of reviews is a manifestation of years of experience and their own style.

The Florida Medical Student Research Journal (FMSRJ) was founded on the notion that medical students are capable of creating research worthy of publication. Furthermore, with guidance from leading specialists and faculty, these students are ripe to begin evaluating and editing the works of their peers. Trained by the research faculty at HWCUM, student editors and reviewers review each manuscript with a discerning eye not only to recognize its strengths but also to provide suggestions for improvement. Facilitating academic discourse and teamwork, this journal allows students the unique opportunity to prepare for a future in academic medicine. Moreover, it enables them to venture far beyond what is expected of a typical medical student.

The original concept for FMSRJ was conceived 14 months ago. Since then, we were delighted to discover that we join a handful of similar student initiatives across the country. We look forward to contributing to a vibrant conversation between students of different institutions.

The path to this inaugural publication was made possible by the unconditional support and enthusiastic encouragement of the Herbert Wertheim College of Medicine faculty. We are deeply indebted to our advisory board, including John A. Rock, MD, MSPH, Carolyn D. Runowicz, MD, Sheldon H. Cherry, MD, FACS, Juan M. Acuna, MD, MSc, Marin Gillis, PhD, and Juan M. Lozano, MD, MSc. We would also like to extend special thanks to the FIU Law Review Editorial Board and to Jay Kumar of the Harvard Medical Student Review for their invaluable advice and support.

Editors in Chief



Emily S. Andersen



Roy Lipworth

References:

1. Stringer MD, Ahmadi O. Famous discoveries by medical students. ANZ J Surg. 2009;79(12):901-8.
2. History of the Journal Nature. Available at: nature.com [http://www.nature.com/nature/history/timeline\\_1960s.html](http://www.nature.com/nature/history/timeline_1960s.html). Accessed March 1, 2016.

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**SUBMISSION INSTRUCTIONS:**

The FMSRJ accepts original articles, case studies, and reviews that adhere to the CONSORT, STROBE, CARE, and PRISMA checklists.

**Originality:**

1. The Florida Medical Student Research Journal only accepts submissions that have not been published previously. Manuscripts that are currently under consideration by another publication will not be simultaneously considered by the FMSRJ. If the status of a manuscript is in question, please consult the recommendations of the International Committee of Medical Journal Editors (ICMJE) regarding "Overlapping Publications" at <http://www.icmje.org/recommendations/browse/publishing-and-editorial-issues/overlapping-publications.html>.
2. All manuscripts will be screened for plagiarism.

**Authorship:**

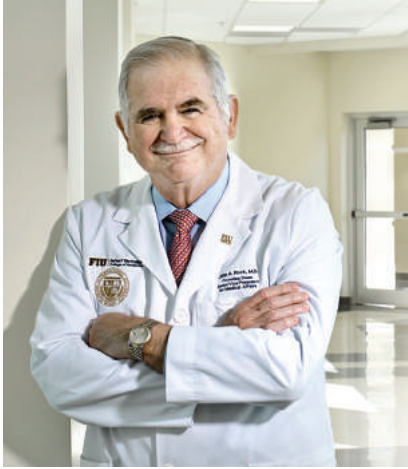
1. Authorship Criteria:
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  - d. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. <sup>(1)</sup>
2. First Author: At the time of submission, the first author of the manuscript must be a medical student currently attending an accredited medical college in the United States or abroad.
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3. Other Authors: The manuscript has been read and approved by all other authors, indicating their confidence that all contents are genuine, accurate, and current. The manuscript has no other uncredited authors.
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2. Patient Protection:
  - a. Authors must remove all identifiable patient information from the manuscript in accordance with HIPPA regulations or face rejection by the FMSRJ. For clarification, please consult the Summary of the HIPPA Privacy Rule at <http://www.hhs.gov/ocr/privacy/hipaa/understanding/summary/privacysummary.pdf>
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**References:**

1. International Committee of Medical Journal Editors <http://www.icmje.org/>. Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals accessed 10/1/2015. Available from: <http://www.ICMJE.org>.



Florida International University is designated as a top-tier research institution by the Carnegie Classification of Institutions of Higher Education, and since the founding of Florida International University Herbert Wertheim College of Medicine, research has been an important component of the doctor of medicine degree curriculum. Every medical student is required to complete a basic science or clinical research project prior to graduation. Students submit their own research proposals and are mentored by faculty as they frame questions, develop protocol, collect and analyze data, interpret findings, and draft manuscripts for publication. And therein lies the conundrum: how does a medical student get his or her work published?

Peer review is a widely accepted practice for validating research publications, but medical students often find it challenging to have their work considered by established medical journals. Florida Medical Student Research Journal (FMSRJ), a student-led research journal initiated by our medical students at FIU, offers opportunities for medical students to have their work assessed by reviewers who are truly their peers. This platform allows students to become active in academic publishing early in their medical education, and to develop skills for lifelong learning that are critical in maintaining competency as a scientist and as a physician.

Clearly the digital age is upon us. Books and journals once purchased in stores or perused in libraries are now available online in digital form. Information is accessible at the point of learning — in classrooms, bedside, or bench—at the tap on the screen of a smart phone or tablet. But while the method of accessing peer-reviewed journals may have changed, the need for the information contained in these journals has not.

I commend the FMSRJ Editors-in-Chief for their initiative in developing this new journal, and all students involved in peer review and publishing in this first issue. They demonstrate the same pioneering spirit that brought FIU Herbert Wertheim College of Medicine to fruition less than a decade ago. The spirit of scientific inquiry is what drives innovation in health care, and I invite medical students everywhere to share their experience.

Sincerely,

A handwritten signature in black ink that reads "John A. Rock, M.D." in a cursive style.

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TIME	EVENT	LOCATION
8:30 a.m.	Registration Opens	Lobby
9:00 a.m.	Poster Presentations I	Lobby
10:45 a.m.	<b>Welcome Address</b> John A. Rock, MD, MSPH, <i>Founding Dean and Senior Vice President for Health Affairs</i>	Room 101
10:50 a.m.	<b>Launch of the Inaugural Florida Medical Student Research Journal</b> <i>Emily S. Andersen, Roy Lipworth</i>	Room 101
11:00 a.m.	Awards Ceremony	Room 101
1:00 p.m.	<b>Luncheon and Keynote Speaker</b> Seza A. Güleç, MD, <i>AΩA Florida Epsilon Chapter</i>	Lobby Room 101
2:45 p.m.	Oral Presentations I	Room 101
4:30 p.m.	Adjourn	

TIME	EVENT	LOCATION
8:00 a.m.	Registration Opens	Lobby
8:25 a.m.	<b>Opening Remarks</b> Juan M. Acuña, MD, MSc, <i>Chair, Department of Medical and Population Health Sciences Research</i>	Room 101
8:30 a.m.	Oral Presentations II	Room 101
10:45 a.m.	Break	
11:00 a.m.	Poster Presentations II	Lobby
12:00 p.m.	Lunch Break, On Your Own	
1:00 p.m.	Oral Presentations III	Room 101
2:15 p.m.	Capstone Presentations	Room 101
3:30 p.m.	Break	Room 101
4:00 p.m.	Oral Presentations IV: Residents	Room 101
5:30 p.m.	Poster Presentations III: Residents	Lobby
6:30 p.m.	Closing Remarks	Room 101

# Poster Presentations I

Thursday, April 28, 2016  
9 a.m. - 10:45 a.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Ricardo Siu	Adaptive control of lung volume for respiratory pacing in the rodent model	Basic Science	P1
Mariluz Sonia, Brian Ho, Javier How	Humanized relaxin receptor mouse model for testing small molecule modulators	Basic Science	P2
CJ Kwan, Shreya Mishra	Association between type-2 diabetes and in-hospital mortality in Puerto Rican patients hospitalized with decompensated heart failure	Cardiology	P3
Areej Bukhari, Alexandra Lee, Nicholas V. Mendez	Association between gender and mortality among Puerto Rican patients hospitalized for heart failure with preserved ejection fraction	Cardiology	P4
Aws Al-Abdullah, Hanns Frimpong, Omer Shahab	Serum calcium levels on admission and in-hospital mortality after incidental acute myocardial infarction	Cardiology	P5
Rafael Paez, Abraham Alfonso Remigio, Robin Joseph	Differences in symptomatology between Puerto Rican men and women presenting with acute myocardial infarction	Cardiology	P6
Ryan Shay, Cecily Koppuzha, Joseph Violaris	The effect of beta-blockers on in-hospital mortality in patients with acute myocardial infarction	Cardiology	P7
Brandon Schwartz, Ben Joseph, Alexandria Alvarez	Gender differences in in-hospital mortality in patients with diastolic heart failure in the Puerto Rican population	Cardiology	P8
Hannah Gordon, Shana Sandford	Impact of mode of transportation on in-hospital mortality in Puerto Rican patients hospitalized with an acute myocardial infarction	Cardiology	P9
Terrence Daley-Lindo, Benjamin J Levens, Michael O'Laughlin	In-hospital mortality rate differences between academic and non-academic hospitals in Hispanic patients with acute myocardial infarction	Cardiology	P10
Emily Tongdee	Diffuse dermal angiomatosis: a case report and review of the literature	Dermatology	P11
Emily Tongdee	A case of twenty nail dystrophy: a review of treatment options	Dermatology	P12



Emily Tongdee	Cogan's syndrome with cutaneous findings: a case report and review of dermatologic manifestations	Dermatology	P13
Emily Tongdee	Keloidal atypical fibroxanthoma: cases and review of the literature	Dermatology	P14
Benjamin J Levens	Acute liver failure following minor outpatient surgery: a case report	Gastroenterology	P15
Emmanuelle Allseits, Mariel Cataldi, Hauchie Pang	The association between source of healthcare and cancer screenings among Haitian residents in North Miami	Health Services	P16
Helen McLaughlin	The effect of insurance status and ethnicity on delays in seeking medical care in North Miami	Health Services	P17
Lisa Podolsky	Association between prior training in LGBTQ patient care and medical students' comfort addressing health concerns in LGBTQ patients	Medical Education	P18
Alexandra Kovar, Cynthia Lopez	Evaluating the need for implementation of a peer mentoring network at Florida International University Herbert Wertheim College of Medicine and its success after one year	Medical Education	P19
Katheraine Lawrence	The role of pre-clinical and clinical training in LGBT and sexual health history-taking on medical students' comfort with gender and sexuality health concerns	Medical Education	P20
Adam Tagliero, Peter D'Amore	Behind the White Coat Lecture Series	Medical Education	P21
Manju Korattiyil, Monica Hajirawala, Sarah Lawand	Determining associations between adverse childhood experiences and bullying perpetration in U.S. pediatric population: a cross-sectional study	Mental Health	P22
Manesh Gopaldas	Polyunsaturated fatty acid associations with serotonin transporter binding in major depressive disorder assessed with [ <sup>11</sup> C]DASB PET	Mental Health	P23

# Oral Presentations I

Thursday, April 28, 2016  
2:45 p.m. - 4:30 p.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Iru Paudel	Sab-mediated signaling regulates mitochondrial fission	Basic Science	O1
Beatriz Collada, Roberto Marticorena- Martinez, Reeni Pandya	Association between peak troponin levels and in-hospital mortality in Puerto Rican patients with acute myocardial infarction	Cardiology	O2
Kyle Schmitt	Off hour emergency room admission effects on mortality of myocardial infarction in Puerto Rico	Cardiology	O3
Davek Sharma, Scott MacDougall, Uday Malhotra	Gender differences in in-hospital mortality in Puerto Ricans with acute myocardial infarction as modified by reperfusion technique	Cardiology	O4
Alex Pop, Corey Saraceni	Association of mortality in myocardial infarction between off-hour and work hour hospital admission in Puerto Rico in years 2007, 2009, 2011	Cardiology	O5
Annum Bhullar, Tamal Roy	Association between wait time in the emergency department and endotracheal intubation in asthmatic patients in the United States	Emergency Medicine	O6
Alexandra Lewis, Nicholas Miles	Household level of education as a determinant of emergency department use for primary care needs in North Miami-Dade county	Health Services	O7

# Oral Presentations II

Friday, April 29, 2016

8:30 a.m. - 10:45 a.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Vincent Boston, Bryan Vo, Chen Ye	Association between wait time in emergency department and patients leaving against medical advice (LAMA)	Health Services	O8
Chae Boyd, Pedro Rojas, Annie Rouza	Association between primary language spoken and pap-smear screening in Little Haiti households	Health Services	O9
Devika Bhatia	Race/ethnicity and the prevalence of adolescent smoking initiation	Health Services	O10
Angelica Delgado, Steve McCauley	Examining the relationship between the main language spoken at home and eating practices in North Miami-Dade County households	Health Services	O11
Jeanette Polcz, Tyler Haertlein, Jeffrey Savin, Matthew Franco	Cost-effectiveness analysis on the participation of multidisciplinary student teams on compliance to cervical cancer screening recommendations in the Green Family Foundation Neighborhood HELP Program (NHELP)	Medical Education	O12
Patrick Deligero, Punya Narain, Varsha Ramnarine	The association between partner violence and teenage pregnancy: effect modification by race	Mental Health	O13
Brigitte Lasser, Adrienne Wang, Matthew Shapiro	Marijuana use and the risk of suicidal ideation in American high school students	Mental Health	O14
Mary-Ann Abraham, Brittany Casey, Danielle Smith	The association between socioeconomic status and severity of anxiety in adolescents with special health care needs in the U.S.	Mental Health	O15
Supurna Dhar	Identification of Ampr effectors in <i>Pseudomonas aeruginosa</i> regulating $\beta$ -lactam resistance	Microbiology/ Genetics	O16

# Poster Presentations II

Friday, April 29, 2016  
11 a.m. - 12 p.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Robert Bilbao, Nibras Chowdhury	Gender disparities in the administration of thrombolytic therapy in Hispanics with acute ischemic stroke	Neurology	P24
Andrew A. Moses, Liza Smirnoff, Ryan Poling	Alcoholism and in-hospital mortality among hemorrhagic stroke patients in Puerto Rico	Neurology	P25
Andres Pena	Mechanical fatigue testing of an implantable intrafascicular electrode system	Neurology	P26
Kevin Shah, Samuel Kohrman, Suehyb Alkhatib	The association between t-PA administration and in-hospital mortality following acute ischemic stroke in Puerto Rican patients	Neurology	P27
Jessica Lapierre, Myosotis Rodriguez, Madhavan Nair, Nazira El-Hage	The role of autophagy in HIV-1 Tat Induced neurodegeneration using beclin-1 heterozygous mouse behavior model	Neurology	P28
Sean Hernandez, Eric Knott, Carl Wilkins	Mode of transportation to hospital predicts mortality in acute stroke patients in Puerto Rico	Neurology	P29
Christopher Brown, Juan Lopez, Benjamin Sirutis	A comparative analysis of stroke in Haitian and non-Haitian populations of South Florida	Neurology	P30
Sneham Tiwari, Ajeet Kaushik, Rahul Dev Jayant, Adriana Yndart, Madhavan P.N. Nair	Withaferin A suppresses beta amyloid in APP expressing cells: studies for Alzheimer's disease	Neurology	P31
Senait Debebe, Mohammed Goryawala, Malek Adjouadi, Anthony J Mcgoron, Seza Güleç	F-FLT positron emission tomography / computed tomography imaging in pancreatic cancer: determination of tumor proliferative activity and comparison with glycolytic activity as measured by 18F-FDG positron emission tomography / computed tomography imaging	Nuclear Medicine/ Radiology	P32
Christina Gauthreaux, Jenesis Negron, Juan Acuña, Daniel Castellanos	Keeping the family healthy: unintended pregnancy as a risk factor for post-partum depression in the United States	O&G	P33
April Ballard, Michelle Chamoun, Stephanie Lairet	Gestational weight gain and preterm delivery according to maternal age.	O&G	P34
Elizabeth Nagooda, Kevin Liu	Combined abdominoplasty and gynecologic procedures - assessment of operative complications	O&G	P35

Jared Maas, Alberto Monreal, Efren Diaz	Association between marital status and survival post-melanoma in Florida patients	Oncology	P36
Robert Allman, Krista Miller, Yael Simons	The impact of insurance status on stage of colorectal cancer at diagnosis	Oncology	P37
Sagar Shrivastav, Priya Verma, Andrew Nashed	Adjuvant chemotherapy in the treatment of pediatric cerebellar cancer	Oncology	P38
Alexander Fagenson, Sara Grossi, Kelsey Musgrove	Racial and ethnic disparities in pancreatic adenocarcinoma	Oncology	P39
Marah C Tillman, Han Yang Yin	Mortality difference between uveal and conjunctival melanoma in Florida between 1981 and 2015	Oncology	P40
Alexandra Rodzinski, Raskesh Guduru, Emmanuel Stimphil	Targeted and controlled anticancer drug delivery and release with magnetoelectric nanoparticles	Oncology	P41
Alexander Daoud, Eric Wherley	Incidence of human papillomavirus (HPV)-associated cancers in American males: analysis of trends from 2000-2012	Oncology	P42
Monica Rodriguez Silva	Combined BH3 and metabolic profiling as a method to define therapeutic response and resistance in grade IV astrocytomas	Oncology	P43
Matthew Sussman, Jena Fujimoto	Anatomical preparation method for Achilles tendon allograft in anterior cruciate ligament repair	Orthopedics	P44
Gretel Carmenate, Daniel Castro	Neurological symptoms in children with intussusception and their outcomes at a large community hospital	Pediatrics	P45
Kelsey Schweiberger, Caitlyn Kenny	Pulse oximetry use in detecting congenital heart defects in asymptomatic infants: a look at how recommendations are implemented in the hospital setting	Pediatrics	P46
Prashanth Shanmugham	Does obesity affect outcomes in children admitted from trauma centers?	Pediatrics	P47
Christine Roy-McMahon, Himanshu Suri, Zane Thompson	Prematurity and an increased risk of epilepsy in a population of united states children aged 0-17 years	Pediatrics	P48
Amira Magdi Said	Access to prescription medications as an indicator of school day absenteeism for children with special health care needs	Pediatrics	P49
Francis T, Lin WC, Totapally B	Investigating the physiological effects of endotracheal suction in the pediatric intensive care unit	Pediatrics	P50
A Kuan-Celavier, C Nhieu M	Venous thromboembolism incidence, risk factors, and prophylaxis in 332 patients who underwent robotic hysterectomy with staging for uterine cancer	Surgery	P51
Shashank Pawitwar	Biomedical characterization of Arsl: a novel C-As lyase for degradation of environmental organarsenicals	Toxicology	P52

# Oral Presentations III

Friday, April 29, 2016  
1 p.m. - 2:15 p.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
James Li	Association between radiation dosage and pain relief in trigeminal neuralgia rhizotomy	Neurology	O17
Amarillo C, Pawlak R, Podley A	Association between gender and the prescription of aspirin as a secondary prevention measure to ischemic stroke patients in Puerto Rico	Neurology	O18
Iya D, Ovakimyan V	Association of health insurance coverage and administration of thrombolytic therapy for acute ischemic stroke patients in Puerto Rico	Neurology	O19
Faisal Rahim, Yumi Mendez	Utility of ICG dye with Firefly fluorescence imaging for detection of sentinel lymph nodes in patients with endometrial or cervical cancer, and discriminative ability for detecting metastases	O&G	O20
Erica Chapman, Annemarie Wolfe	The association between pre-pregnancy depression and breastfeeding outcomes	O&G	O21

# Capstone Presentations

Friday, April 29, 2016  
2:15 p.m. - 3:30 p.m.

AUTHOR	TITLE
Matthew Franco, Tyler Haertlein, Jeanette Polcz, Natalie Castellanos	The cost of the coverage gap: Florida's healthcare economics in a post-affordable care act world
Anna Kuan-Celarier, Matthew Shapiro, Robert Guido, Nicole Brzozowski, Jonathan Macias, Molly Kidder, Samuel Jean-Baptiste, Frederick Anderson, Sheldon Cherry, Marin Gillis, Alan L Wells	Mammography art initiative: four years of sustainable community engagement and education outside of the classroom
Katharine Lawrence, Cheryl Brewster, Jaime Franco, Alan Wells	Medical students for gender and sexuality advancement (GSA) - Addressing LGBTQ health disparities at the Herbert Wertheim College of Medicine

# Oral Presentations IV

Friday, April 29, 2016  
4 p.m. - 5:30 p.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Rulz Tony Cantave, Binna M Chokshi, Jeevan Joseph, Hamid Feiz	Rare case of non-anion gap metabolic acidosis associated with SGLT-2 inhibitor use	Internal Medicine	O22
Marina Gorelik	Can residents be trained and safety maintained?	Medical education	O23
Kaitlin Ross	Perceived stigma of mental illness and utilization of mental health services in a South Florida community: Preliminary analysis	Mental health	O24
Katrin Arnolds	Giant cystic degeneration of a uterine leiomyoma in a patient with autosomal dominant polycystic kidney disease	Nephrology	O25
Agueda Hernández	Exclusive breastfeeding in mothers who delivered vaginally versus cesarean section: A retrospective exploratory comparative study	O&G	O26
Raul Alexander Cabos	A multidisciplinary approach to treat a large aortic free floating thrombus	Surgery	O27



# Poster Presentations III

Friday, April 29, 2016  
5:30 p.m. - 6:30 p.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Reyes D, Gonzalez L, Boddepalli RS, Piran P, Subin M, Linn A, Goudreau C, Galvez N, Salgado ED	A Brain Attack protocol achieving better door to needle time in stroke	Cardiology	P53
Sameer Shaharyar	Obstructive shock in a patient presenting with rectal bleeding and syncope	Emergency medicine	P54
Reyes D, Gonzalez L, Boddepalli RS, Piran P, Subin M, Linn A, Goudreau C, Galvez N, Salgado ED	The Emergency Medical Services impact on stroke patient management arriving at the Cleveland Clinic Florida.	Emergency medicine	P55
Dave K, Bromberg R, Choksi V, Lyubynska N, Naberezny K, Joseph J, Aung TT	Graves' disease with autoimmune hepatitis and immune thrombocytopenia - "An Autoimmune Tsunami" – A diagnostic and therapeutic dilemma	Endocrinology	P56
Kailee Imperator	Acute gastric volvulus: a deadly but commonly forgotten complication of hiatal hernia. Autopsy case report.	Gastroenterol.	P57
Vivek Choksi, Kairavee Dave, Rulz Cantave, Jeevan Joseph, Uday Shankar, Steven Kaplan, Hamid Feiz	"Black Esophagus" or acute esophageal necrosis: a rare complication of diabetic ketoacidosis	Gastroenterol.	P58
Shivan Shah	Myroides – A new player causing cellulitis and septic shocka	Infectious diseases	P59
Thu Thu Aung	Aspergillus spondylodiscitis: A rare complication of intrathecal methotrexate chemotherapy in diffuse large B cell lymphoma	Infectious diseases	P60
Alejandro Villegas, Hanish Sampath-Kumar, Alwiya Saleh, Navjot Ariyana Kaur	The lethality of Pseudomonas aeruginosa in neutropenic patients	Infectious diseases	P61
Vivek Choksi, Ayesha Farooq, Andrew Chu, Dhruvi Mankodi, Sameer Shaharyar, Keith O'Brien, Uday Shankar	Severe rhabdomyolysis without systemic involvement: a rare case of idiopathic eosinophilic polymyositis	Internal Medicine	P62
Siba Hussein	Sporadic renal hemangioblastoma	Nephrology	P63

# Poster Presentations III (continued)

Friday, April 29, 2016  
5:30 p.m. - 6:30 p.m.

AUTHORS	TITLE	FIELD	ABSTRACT ID
Dennys Reyes, Ramon Lugo, Virgilio Salanga, Nestor Galvez, Efrain Salgado	Progressive sensory neuropathy and gait ataxia as the initial manifestation of breast cancer. Case report of a paraneoplastic sensory neuronopathy.	Neurology	P64
Dennys Reyes, Lixandra Gonzalez, Raja S Boddepalli, Pirouz Piran, Mathew Subin, Alex Linn, Chantal Goudreau, Nestor Galvez, Efrain D. Salgado	Acute stroke and stroke mimics in two different brain attack protocols at Cleveland Clinic Florida.	Neurology	P65
Kairavee Dave, Vivek Choksi, Osman Perez, Livasky Concepcion, Sann Htoo, Thu Thu Aung	Altered mental status due to possible trazodone overdose diagnosed as SLE cerebritis	Neurology	P66
Trupti Akella, Sufian Sorathia, Vivek Choksi, Uday Shankar, Jonathan Cross	Acute disseminated encephalomyelitis (ADEM) due to Mycoplasma pneumoniae infection in an adult	Neurology	P67
Dennys Reyes, Raghav Govindarajan, Kateryna Kurako, Virgilio Salanga, Nestor Galvez-Jimenez	Clinico-serologic predictors of positive repetitive nerve stimulation study in newly diagnosed generalized myasthenia gravis.	Neurology	P68
Venkata Shilpa	Susac's Syndrome, a rare disorder with retino-cochleo-cerebral vasculopathy	Neurology	P69
Dennys Reyes, Lixandra Gonzalez, Raja S Boddepalli, Pirouz Piran, Mathew Subin, Alex Linn, Chantal Goudreau, Nestor Galvez, Efrain D. Salgado	A Brain Attack protocol reducing length of hospitalization in stroke patients at the Cleveland Clinic Florida.	Neurology	P70
Alexandriah Alas	Same day urogynecology surgery: rates of acute postoperative urinary retention when using spinal versus general anesthesia	O&G	P71
Alexandriah Alas	Are rates of success after total vaginal hysterectomy with McCall's culdoplasty for massive uterovaginal prolapse comparable to those with less severe prolapse?	O&G	P72

H Devakumar	Resolution of rectal prolapse by vaginal reconstruction	O&G	P73
Diana M. Morlote, John Alexis	Dermatofibrosarcoma protuberans with coexisting fibrosarcomatous and giant cell fibroblastoma-like components in the breast of a woman	Oncology	P74
Diana M. Morlote, Sean Kaufman, Cristina Marin, Ed Franca, Robert Poppiti	Inflammatory myofibroblastic tumor of the liver: a mimicker of malignancy	Oncology	P75
N Chandrasekaran, D Scharifker, G Varsegi, Z Almeida	Seeing is believing: breast metastasis from vaginal cancer	Oncology	P76
Diana M. Morlote, Amilcar Castellano-Sanchez, Vathany Sriganeshan, Yumna Omarzai	Follicular dendritic cell sarcoma presenting as subcutaneous masses in left chest wall	Oncology	P77
Tudela Charlotte, Fernandez Patricia, Hernandez Robert	Bleeding to death: when comfort care requires a rapid response	Palliative care	P78
Kailee Imperator	Mucinous breast carcinoma on the nipple of a man: a case report.	Pathology	P79
Gabriel Sanchez	Are autolytic-type changes in surgically removed gallbladder specimens related to fixation delay?	Pathology	P80
Osman Perez	CNS toxoplasmosis: unusual initial presentation of acquired immune deficiency syndrome	Pediatrics	P81
Diana Morlote, Amilcar Castellano-Sanchez, Liset Pelaez, Carol Brathwaite	Epstein-Barr virus-associated diffuse large b-cell lymphoma in a patient with complete DiGeorge syndrome status-post umbilical cord blood cell transplantation	Pediatrics	P82
Kruthika Krishnamurthy	Staphylococcus lugdenensis: rare culprit of endovascular stent infection	Surgery	P83



# Oral Abstracts

## O1.

**Sab-mediated signaling regulates mitochondrial fission**

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**Introduction and objective:** Mitochondria are dynamic, highly integrated organelles that exist in a constant state of fusion and fission to maintain organelle function and cell viability; consequently, intimate crosstalk exists between mitochondria and cell. Our long term goal is to understand how signal transduction on the mitochondrial outer membrane (MOM) influences physiology. Since the MOM is the interface of mitochondria and the cell, signaling complexes at the MOM are appropriately positioned to convey messages to and from mitochondria. Moreover, MOM signaling complexes are in close proximity to proteins involved in crucial aspects of mitochondrial physiology, such as organelle dynamics and energetics. Thus, alterations in these signaling cascades may profoundly impact mitochondria and the cell.

We found that c-Jun N-terminal kinase (JNK) signaling on the MOM is mediated by the scaffold protein Sab, and over-expression of Sab resulted in fragmentation of the mitochondrial network. We hypothesize that mitochondrial JNK (mito-JNK) signaling may promote mitochondrial fission.

**Methods and Results:** To enhance mito-JNK signaling, we over-expressed Sab in HeLa cells and murine embryonic fibroblasts (MEFs). Increased Sab expression significantly decreased the length of mitochondria. This effect was enhanced by chemicals that promote mitochondrial fission. Affinity purification of epitope-tagged Sab expressed in MEFs revealed Sab directly interacted with fission proteins Mff, Fis1, MiD49/51, and Drp1. Inhibition of mito-JNK signaling prevented the interaction between Sab and the fission proteins and mitigated the change in mitochondrial morphology. We propose that Sab may serve as a nucleation site for the fission machinery on the MOM. Mito-JNK signaling also played a role in preventing mitochondrial fusion (repair) by targeting Mfn2 for destruction by the proteasome. Inhibition of the JNK-Sab interaction also prevented the phosphorylation and degradation of Mfn2 and reduced the amount of mitochondrial fission in vitro. Intriguingly, expression of active JNK was not sufficient to induce the complete fragmentation of the mitochondrial network observed in Sab over-expressing cells. Extracellular regulated kinases (ERK1/2) have been demonstrated to affect mitochondria dynamics. Biochemical analyses reveal that ERK1/2 can bind to a kinase-binding motif (KIM2) on Sab. Over-expression of Sab reveals a decrease in Mfn1 levels. ERK signaling has been shown to promote fission by inducing the degradation of Mfn1.

**Conclusions-Implications:** Taken together, our results suggest that two prominent protein kinases JNK and ERK can regulate mitochondrial fission by modifying fusion and fission proteins in a Sab-dependent manner. Our studies illustrate the connectivity of cellular stress response pathways and mitochondrial dynamics.

## O2.

**Association between Peak Troponin Levels and In-Hospital Mortality in Puerto Rican Patients with Acute Myocardial Infarction**

Beatriz Collada, Roberto Marticorena-Martinez, Reeni Pandya

**Mentors:** Juan M. Lozano MD MSc, Juan C. Zevallos MD. Florida International University College of Medicine

**Introduction and Objective:** Hispanics have the second highest incidence of acute myocardial infarction (AMI) in the US. There is evidence that high troponin levels are associated with longer hospital stays and a higher 30-day mortality rate in patients presenting with acute coronary syndrome. The objective of this study is to determine whether peak troponin levels are associated with in-hospital mortality in Puerto Rican patients hospitalized with AMI.

**Methods:** This is a secondary analysis of the Puerto Rico Cardiovascular Disease Surveillance database, constituting an observational, non-concurrent, prospective study. The population of this study consists of 2,962 patients hospitalized in 21 Puerto Rican medical centers during 2007, 2009, and 2011 with an AMI.

The main independent variable was peak troponin I (cTnI) levels within 24 hours of symptom onset, and the dependent variable was in-hospital mortality. cTnI levels were dichotomized as normal or abnormal according to the values set by each of the participating hospital laboratories analyzing the blood sample. A descriptive analysis determined whether the two exposure groups were similar with respect to potential confounders (age, gender, time since symptom onset, recent surgery, hypertension, hyperlipidemia, diabetes mellitus, in-hospital complications, and smoking). A bivariate analysis of troponin levels and the above-mentioned potential confounders with in-hospital mortality was also conducted. Multivariable analysis was conducted to determine the association of peak troponin levels and the above confounders with in-hospital mortality, described using adjusted and unadjusted odds ratios.

**Results:** Patients with abnormal peak troponin levels were twice as likely to die in the hospital, even after adjusting for age, gender, hypertension, and the presence of in-hospital complications (atrial fibrillation, ventricular tachycardia, ventricular fibrillation, shock and/or cardiac arrest) (OR 2.1; 95% CI= 1.3-3.3). Adjusted analysis further showed that age and in-hospital complications were significantly associated with in-hospital mortality (OR 1.1, 95% CI= 1.1-2.8; OR 4.8, 95% CI= 3.2-7.0, respectively). Hypertension was protective, resulting in a 56% decrease in odds of death (OR 0.4; 95% CI 0.3-0.6). The odds of in-hospital mortality were similar between men and women.

**Conclusions-Implications:** Puerto Rican patients with incident AMI and abnormal peak troponin levels have twice the odds of experiencing in-hospital death. Such patients may benefit from more timely diagnosis, aggressive monitoring and management at the time of admission. The apparent protective effect of hypertension may be explained by hypertensive patients being treated with beta-blockers prior to their MI. Further research is needed to reproduce these results in different populations.

## O3.

### Off-Hour Emergency Room Admission Effects on Mortality of Myocardial Infarction in Puerto Rico

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**Introduction and Objectives:** Off-hours (7pm-7am) and office hours (7am-7pm) admissions of Acute Myocardial Infarctions (AMI) can be associated with differences in quality of care. There is limited information on the risk of increased mortality from AMI admissions during off-hours. Our study aims to address the association between time of presentation and in-hospital mortality rates AMI cases admitted to emergency rooms in Puerto Rico.

**Methods:** This is a nonconcurrent prospective cohort study and secondary analysis of the Puerto Rico Myocardial Infarction Database encompassing 2965 subjects hospitalized with an AMI at 21 different medical centers in 2007, 2009, and 2011. Our exposure of interest was shift time, our outcome of interest was in-hospital all-cause mortality and potential confounders measured were categorized into demographics, interventions received upon arrival and comorbidities. Both crude (unadjusted) and adjusted binary logistic regression models were computed to estimate odds ratios.

**Results:** Of the 2965 subjects, 2078 were excluded for either missing mortality status or arrival time status, leaving a final sample size of 887 subjects. The mortality of patients with missing admission time was 8.2%. The overall mortality rate in our final sample was 5.9%. Office hours mortality was 7.1% and off-hours mortality was 4.1%. The unadjusted odds ratio estimation of off-hours admission was 0.56 (95% CI 0.304-1.040). The adjusted binary logistic regression model conferred an odds ratio of 0.63 (95% CI 0.299-1.313) for off-hours admissions.

**Conclusions-Implications:** The association measured was not statistically significant and we were not able to show a negative effect of off-hours admissions on mortality. Due to the proximity of the confidence intervals around 1, the inference could be made that there is probably not an increased mortality risk in either office or off-hours admissions. This would be a dangerous assumption. There is little doubt about there has been a non-biased estimation of association, because 63% of data on exposure is missing and statistically significant baseline differences exist in the risk profiles between included and excluded subjects. Therefore an association of off-hour admissions and mortality cannot be excluded. Even if this were a non-biased estimation of effect, there would still be a potential problem with statistical power. Good practices outlining precautions against this source of bias in other secondary analysis should be followed. This question should continue to be researched utilizing a database that includes admission time and is large enough to provide the necessary power.

## O4.

### Gender differences in in-hospital mortality in Puerto Ricans with acute myocardial infarction as modified by reperfusion technique

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**Introduction and Objective:** Heart Disease is the leading cause of death in the United States and is a major cause of disability. 370,000 Americans die from coronary heart disease annually and over 700,000 Americans suffer a myocardial infarction (heart attack) every year. Recent literature has shown disparities among genders when it comes to in-hospital mortality for individuals receiving therapy after suffering a myocardial infarction. The objective of our study is to investigate the association of gender and in-hospital mortality rate in Puerto Rican patients who suffered myocardial infarction and underwent intervention.

**Method:** Our study is a secondary analysis of patient data previously collected as part of the Puerto Rican Heart Attack Study (PRHS) which was a non-concurrent, observational, cross-sectional study of patients in Puerto Rico presenting with acute myocardial infarction (AMI) in the years 2007, 2009 and 2011. The database consisted of 2,965 individuals and after including those only with ICD-9 codes for acute MI, first time MI and excluding individuals less than 45 years of age the study population consisted of 1,787 individuals, 793(44%) were female and 994(56%) were male. The interventions or reperfusion techniques included in the study were coronary artery bypass graft (CABG), percutaneous coronary intervention (PCI/PCTA) and thrombolytic therapy.

**Results:** Females were less likely to receive any reperfusion technique as compared to males, almost 10% more females received no intervention as compared to males who also received no treatment. Overall mortality for females and males was 10.6% and 6.9% respectively. When comparing the reperfusion technique, higher mortality was seen with CABG (14.3% deceased at time of discharge) compared to PCI/PTCA (3.8%) or thrombolytics (6.8%). About 9% of those who received no reperfusion died while in the hospital. The unadjusted odds ratio of in-hospital mortality was (OR)=1.6, 95 % confidence interval (CI)= 1.1-2.2, p=0.006. When adjusting for confounders the odds of in-hospital mortality among females was 40% higher than males (adjusted OR=1.4, 95% CI= 1.0-2.1).

**Conclusions-Implications:** Our study shows that female gender is associated with increased mortality risk among Puerto Ricans admitted for acute myocardial infarction and who underwent reperfusion. However, these results are of borderline statistical insignificance (p=0.066). Females presented with more comorbidities than males and women were less likely to undergo intervention. PCI/PTCA showed no difference with regards to gender after stratifying for reperfusion technique. Clinicians who aim to address these gender differences can potentially tailor their treatment approach in the future.

05.

**Association of Mortality in Myocardial Infarction between Off-Hour and Work Hour Hospital Admission in Puerto Rico in Years 2007, 2009, 2011**

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**Introduction and Objective:** Off-hours admissions of acute myocardial infarction (AMI) can be associated with differences in quality of care, leading to increased mortality. In Puerto Rico there is limited information on the risk of increased mortality due to AMI presenting off hours to hospitals. We set out to study whether there is an association between off-hours and in-hospital mortality AMI cases admitted to the emergency rooms in Puerto Rico.

**Methods:** We conducted a secondary analysis of a non-concurrent cohort: The Puerto Rican Cardiovascular Electronic Database. It consists of the 21 largest hospitals in Puerto Rico spanning the years 2007, 2009, and 2011. The exposure of interest was admission times defined as off hours (7pm to 7am) and work hours (7am to 7pm) while our outcome was all causes in-hospital mortality. Potential confounders included age, gender, co-morbidities and initial treatment among others. Crude and adjusted for potential confounders (logistic regression) estimations of effect were computed. Sensitivity analysis on the potential biasing effect of missing data was performed.

**Results:** The data source consisted of records on 2965 subjects, and of them 2256 had confirmed AMI's by ICD-9 code 410.XX; 483 who were transferred from other hospitals were excluded. Of the remaining 1773, an additional 1073 did not have data on time of admission, leaving only 700 subjects as out effective sample. Out of these 700, there were 26 deaths for an all cause in-hospital mortality of 3.7%. After adjusting for potential confounders we demonstrated a modest and non-statistically significant increase in the odds of dying in subjects admitted off hours: 1.2 (95%CI 0.4-3.7). The comparison between the 1073 individuals with missing admission time data and the 700 individuals with admission time data showed that subjects with missing admission times had significant higher mortality and different distributions of age, gender and comorbidities. Sensitivity analysis demonstrated a wide variability on the estimated OR for in-hospital mortality, ranging from 0.6 (95%CI 0.3-1.4) if missing data cases were assigned to working hours to 1.8 (95%CI 0.8-3.8) if the opposite was made.

**Conclusions-Implications:** We were unable to show a statistically significant association between mortality and admission times in our adjusted models. Our study was severely limited by potential selection bias due to missing data and low power which prevented us from reach our primary aim. Our question remains unanswered. We recommend a more complete data set and larger sample size for any further research.

06.

**Association between Wait Time in the Emergency Department and Endotracheal Intubation in Asthmatic Patients in the United States**

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**Introduction and Objective:** The increasing number of annual emergency department (ED) visits has led to ED overcrowding and longer wait times for receiving treatment. Studies have reported that ED overcrowding can decrease timeliness and effectiveness of care in certain patient populations, such as asthmatics. Whether this detrimental effect occurs due to a longer wait time to receive treatment, and whether longer wait time would increase the risk for invasive procedures, such as intubations, is not known. We hypothesize that increased wait times for asthmatic patients may cause exacerbation of asthmatic episodes leading to deterioration of clinical condition and possible increased need for intubations. The objective of our study is to determine whether there is an association between wait times and endotracheal intubations performed in asthmatic patients presenting to U.S. Emergency Departments.

**Methods:** The study is a secondary analysis of data from the Center for Disease Control (CDC) National Hospital Ambulatory Medical Care Survey (NHAMCS), a nationally representative sample of United States Emergency Departments, years 2007-2009. All patients presenting with primary diagnosis of asthma (based on ICD-9 codes) and with data recorded on wait time were included. Comparison of the prevalence of intubation according to wait time (< or ≥ than 30 minutes) was performed. Chi-squared tests were used to assess statistical significance (considered for p-values <0.05).

**Results:** About 2,143 asthmatic patients presented to the ED and about 46% had wait times ≥30 minutes. Overall, only 8 patients (0.4%) underwent intubation: 3 of which had wait times <30 minutes (0.3%) and 5 had wait times ≥30 minutes (0.2%) (p-value for difference between wait time groups=0.869). 7 out of the 8 intubation cases were performed in Non-Whites (p-value for difference <0.001). Non-whites also had 10% more participants with wait time ≥ 30 minutes (p=0.003). Due to the small number of outcomes, adjustments could not be properly performed.

**Conclusions-Implications:** Our study did not demonstrate a statistically significant association between wait times and endotracheal intubations, but findings should be interpreted in light of the limited study power. Further studies utilizing more efficient designs for rare outcomes disease (such as case-control studies) and systematic collection of data on wait times are needed.



## 07.

### Household level of education as a determinant of emergency department use for primary care needs in North Miami-Dade County

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**Introduction and Objective:** Emergency departments (EDs) are frequently used inappropriately for non-emergent, primary care complaints, leading to billions of dollars in unnecessary healthcare spending. Identifying determinants of inappropriate ED use can lead to targeted intervention and ultimately reduce wasteful spending. Education has been associated with patterns of care utilization, which is believed to mechanistically relate to health literacy. With this study, we aim to determine if a household's highest level of education is associated with the utilization of EDs as a primary care provider (PCP) in North Miami-Dade County.

**Methods:** Using a cross-sectional design, our study utilized an existing de-identified database created in 2010 by Florida International University Herbert Wertheim College of Medicine (FIU-HWCOM) via survey of 1845 randomly selected households in the North Miami area. Included in the survey were questions about the highest level of education achieved by the head of household as well as the household's preferred source of care. From the initial data set, we excluded any cases who did not answer the survey question regarding level of education, which left 1639 cases for analysis. Level of education (independent variable) was stratified into four levels to evaluate for a dose-response effect with regard to ED use for primary care needs (dependent variable). Analysis for association was performed using multivariate linear regression to generate odds ratios for comparison.

**Results:** With regard to ED utilization for primary health care, analysis showed a dose-response effect for level of education. Those with some higher education were 1.63 times as likely to use an ED as those with a bachelor's degree or higher (0.74-3.61 95% CI,  $p = 0.227$ ), while those with a high school education were 2.10 times as likely (0.96-4.58 95% CI,  $p = 0.063$ ) and those with less than a high school education were 2.11 times as likely to use an ED for primary care (0.82-5.40 95% CI,  $p = 0.119$ ).

**Conclusions-Implications:** Our analysis did not show a statistically significant association between level of education and ED use, but the demonstration of a dose-response effect lends credence to the connection between the two. We feel our data supports this association and conclude that patient education plays a role in care utilization, though a new database designed to explore this relationship further or a study with higher power may be needed to fully develop a complete understanding of the phenomenon.

## 08.

### Association between wait time in emergency department and patients leaving against medical advice (LAMA)

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**Introduction and Objective:** Leaving against medical advice (AMA) in EDs is associated with detrimental outcomes, including increased morbidity and mortality. Wait times lead to greater dissatisfaction with health care, a factor previously shown to affect the risk of a patient leaving against being seen by a physician. Whether wait time to see a physician in the ED is also associated with LAMA is yet to be determined.

**Method:** We conducted secondary analysis of a cross-sectional study, the National Hospital Ambulatory Medical Care Survey (NHAMCS). We examined all patients visiting the EDs which participated in NHAMCS and then selected those age at least 18 years of age, then excluded patients who died in the ED, who did not see a physician, and those who did not have a recorded wait time. Our independent variable was the wait time in the ED, our independent variable was whether or not the patient left AMA. Multivariate logistic regression analysis was used to examine the independent association between wait time and LAMA. STATA 14 was used to account for the complex survey design. Significance was considered at the 0.05 alpha level.

**Results:** We included 20,339 patients in our analysis, in which 219 (~1%) patients left AMA. Wait time had a median of 25 minutes and interquartile range of 11 to 55 minutes. In the unadjusted analysis, the odds of leaving AMA were 20% lower in patients waiting 30-59 minutes and  $\geq 60$  minutes than patients those who waited  $< 30$  minutes (OR=0.8, 95% CI=0.5-1.3 for both). In the adjusted model, the odds of leaving AMA were 30% lower in patients waiting 30-59 minutes than those waiting less than 30 minutes (OR=0.7, 95% CI=0.4-1.1) and the odds of leaving AMA were 20% lower in those waiting 60 minutes or longer than those waiting less than 30 minutes (OR=0.8, 95% CI=0.5-1.2), again both differences found not significant.

**Conclusions-Implications:** We found no evidence for an association between ED wait time and patients leaving AMA. Selection bias and residual confounding concerns apply. Future studies should investigate reasons for LAMA other than wait time as to guide interventions aimed at reducing LAMA.

## 09.

### Association between Primary Language Spoken and Pap-Smear Screening in Little Haiti Households

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**Introduction and Objective:** Pap smear screening has become an important preventive mean for early detection of cervical cancer, with lower rates of screening in different ethnic groups as a result of multiple factors, including language. To our knowledge, there is no research evaluating the association of primary language spoken and Pap smear screening in the Little Haiti population, a unique group with high prevalence of Creole speaking individuals. Our objective is to determine the association between primary language spoken and Pap smear screening in Little Haiti Households.

**Methods:** We did a secondary analysis of data collected from a cross sectional study done in Little Haiti in 2010 by the Herbert Wertheim College of Medicine using the Little Haiti 2010 Earthquake Impact Assessment Survey. We excluded households who had missing information on Pap smear and language, and households with no woman aged 21-65 years old. Pap smear screening within 5 years was considered adequate, and Pap smear done more than 5 years prior was inadequate. We used multivariate logistic regression analysis to evaluate the independent association between language spoken and Pap smear screening. The analyses were performed using SPSS software version 20.

**Results:** Out of 948 Little Haiti households who completed the survey, 602 households met our inclusion criteria. Of those, 45% spoke English, 36% spoke Creole, 16% spoke Spanish, and 2% spoke other languages. Overall, 85% of households received a pap smear within prior 5 years. A lower percentage of Creole (79.2%) received a pap smear within 5 years compared to English and Spanish speaking households (88 and 86%, respectively). In the crude analysis, Creole speakers had lower odds of receiving Pap smear [odds ratio (OR)=0.5, 95% confidence interval (CI)=0.3-0.8). However, we found no evidence of association between language spoken and receiving Pap smear screening after adjusting for being Africa- American, household income, < 9 years of length of stay in US, education level, and health insurance status (adjusted OR=1.1, 95% CI=0.5-2.2 for creole and OR=1.2, 95% CI=0.5-2.8 for Spanish speakers compared to English Speakers households).

**Conclusions-Implications:** Overall, our findings suggest that differences in Pap smear screenings in the Little Haiti households are not due to language barriers, but most likely due to socio-economic factors. Further research is needed to better understand the reasons for the ethnic/racial disparities in screening practices in the population of the Little Haiti area.

**O10.**

**Race/ethnicity and the prevalence of adolescent smoking initiation**

Devika Bhatia, Marcia Varela, MD, PhD, MHS, Grettel Castro, MPH, Juan M. Lozano, MD, MSc.

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**Introduction and Objective:** Cigarette smoking is the number one cause of death, disease and disability in the United States. About 68-80% of cigarette smokers initiated the behavior before 18 years of age. Prevention of smoking initiation in adolescence might reduce the prevalence of smoking during adulthood. Thus, identification of potential risks factors during adolescence is key to guide preventive interventions. Our objective is to determine if there is an association between race/ethnicity and prevalence of smoking initiation among high school students.

**Methods:** The study used observational data collected cross-sectionally by the Center for Disease Control (CDC)'s Youth Risk Behavior Survey (YRBS) in 2013. This is a survey of students from public and private secondary schools from all 50 states and the District of Columbia, and we will use all students from grades 9-12 participating at the YRBS for which data relevant for the study question was available. Students were sampled using a three-stage random cluster sampling design. Our exposure was Race/Ethnicity as self-reported by the student and categorized as "Non-Hispanic White", "African American", "Hispanic", and "Other". Our main outcome was smoking initiation, defined as positive if the student reported having smoked cigarettes on 20 or more days during the 30 days before the survey.

**Results:** We studied approximately 13,211 students. About 5% of the students reported smoking initiation. Compared to Non-Hispanic Whites students, African-American, Hispanic, and other race students had 30-40% lower odds of initiating smoking behavior in adolescence (OR= 0.4, 95% CI=0.2-0.6; OR=0.3, 95% CI=0.2-0.4; and OR=0.4, 05% CI=0.2-0.7, respectively, after adjustment for gender, age, depression, suicide ideation, alcohol abuse, illicit and prescription drugs use, and asthma). Other factors independently associated with higher odds of smoking initiation were history of depression, alcohol abuse, illicit/prescription drugs use, marijuana use, and history of asthma.

**Conclusions-Implications:** Non-Hispanic White students were most likely to initiate smoking behavior in adolescence than students. Further research may benefit from addressing socio-economic factors that could potentially mediate the association hereby described. Additional studies are needed as to identify whether strategies targeted to Non-Hispanic white students aiming to prevent smoking initiation group have a greater impact in decreasing adolescent smoking initiation rates.

**O11.**

**Examining the Relationship between the Main Language Spoken at Home and Eating Practices in North Miami-Dade County Households**

Angelica Delgado, Steve McCauley, Marcia H Varela, M.D., Ph.D., M.H.S., Juan M. Lozano MD MSc

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**Introduction and Objective:** The dietary practices of Americans are not homogenous and often vary based upon an individual's ethnicity

and language. Our study examined whether the primary language spoken in households in North Miami-Dade County was associated with healthy nutrition, namely fruits and vegetables and soda consumption patterns.

**Methods:** We analyzed data from participants of the Herbert Wertheim College of Medicine Benchmark Survey for the NeighborhoodHELP Program. Language spoken in the household was the main exposure (English, Spanish, or Other). The outcomes were assessment of two healthy eating habits, namely consumption of fruits or vegetables two or more times per week and consumption of soda fewer than three times per week. Independent association of language and healthy eating habits were performed using multivariate logistic regression for each outcome separately (fruits and vegetable consumption and soda consumption) using SPSS software.

**Results:** Our unadjusted results indicate that there is no association between primary language spoken at home and fruit and vegetable consumption. Compared to English speakers, Spanish and other language speakers the odds for eating fruits and vegetables were OR = 0.85, 95% CI = 0.65-1.11 and OR = 1.14, 95% CI = 0.72-1.81, respectively. When adjusted for marital status and perceived health, results remained not statistically significant (OR = 0.89, 95% CI = 0.68-1.18, and OR = 1.20 95% CI = 0.73-1.95 for Spanish and other languages as compared to English, respectively). However, primary spoken language in the household was associated with soda consumption: Non-English speakers had lower odds to consume soda compared to English speakers (OR=0.72 95% CI =0.54-0.95 for Spanish and OR= 0.66 95% CI =0.42-1.06 for other languages). After adjustment for marital status and education, the association became more pronounced (OR=0.75, 95% CI =0.56-1.00 for Spanish speakers and OR=0.59, 95% CI =0.36-0.97 for other language speakers).

**Conclusions-Implications:** Non-English speakers in North Miami-Dade possibly have better nutritional habits than English speakers (e.g., less soda consumption). Future research should explore the reason for differences in healthy eating patterns according to language spoken as to aid in the development of interventions aimed at influencing people to adopt healthy nutrition.

## O12.

### Cost-Effectiveness Analysis on the Participation of Multidisciplinary Student Teams on Compliance to Cervical Cancer Screening Recommendations in the Green Family Foundation Neighborhood HELP Program (NHelp)

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**Introduction and Objective:** The efficiency on compliance with cervical cancer screening of adding health care students to community programs has not been studied. The objective of our study is to estimate the Incremental Cost-Effectiveness Ratio (ICER) of two outreach strategies in a community health program, for promoting Pap smear testing.

**Methods:** Outreach team recruited all participant households. Control households were provided health resources information and a newsletter, with periodic telephone follow up by the program staff. Experimental households also received 2 to 6 visits per year, conducted by faculty-student teams, who delivered specific health promotion activities. ICER (in 2015 U.S. dollars) was the main outcome measure. Willingness-to-pay (WTP) threshold: \$6,000. Differential direct medical and non-medical costs were estimated to compute average cost per household per year in each study group.

**Results:** At one year after baseline evaluation, 61% (95%CI 39-80) of patients in the intervention group and 32% (95%CI 19-48) in the control group received a Pap smear ( $p < 0.05$ ). The ICER was \$5,436.88 (below the WTP threshold). Two way deterministic sensitivity analysis on estimations of proportions of compliance with Pap smear in the two groups demonstrated that in almost 50% of plausible scenarios the intervention would not be cost-effective (above the WTP threshold).

**Conclusions-Implications:** The unit of intervention are households rather than individual women, who might not be present during visits. Effective sample size is small, accounting for significant uncertainty uncovered by the sensitivity analysis. Although the base case analysis scenario showed that the students' participation was cost-effective, the estimated ICER was sensitive to plausible variation in effectiveness, therefore a more precise (higher sample size) estimation of effectiveness is needed before this intervention can be accepted as cost-effective. In the meantime, it is reasonable to continue with the participation of student teams in the NHelp program, because of the added intangible values and benefits for participant students and for the community.

## O13.

### The Association Between Partner Violence and Teenage Pregnancy: Effect Modification by Race

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**Introduction and Objective:** Teen pregnancy rates remain a significant issue within the United States. Teen pregnancy is associated with higher risk of adverse outcomes including low birth weight, small gestational age, and preterm delivery. Partner violence had been shown to affect teen pregnancy. The objective of this study is to determine whether there is an association between partner violence and teenage pregnancy, and to test if the association is modified by race.

**Methods:** We used data from a cross-sectional study the Youth Risk Behavior Surveillance System (YRBSS) year 2003. Only female students were included. The exposure was partner violence defined as being hit, slapped, or physically hurt on purpose by a boyfriend or girlfriend or ever being forced to have sexual intercourse anytime in the previous 12 months. The outcome was occurrence of teenage pregnancy (ever versus never). Race (white versus non-whites) was assessed as a potential effect modifier. Independent associations were tested using multivariate logistic regression, stratified by race. Stata 12 was used to account for the complex survey design.

**Results:** We studied 6,989 high school females. Overall, of participants exposed to partner violence, 15% experienced teenage pregnancy, as compared to 3% in those not exposed to violence. Teenagers exposed to partner violence had higher odds of teenage pregnancy for both races. The unadjusted OR for whites was 8.7 (95% CI=5.3-14.5) and for non-whites it was 4.7 (95% CI=3.3-6.8). After adjusting for age, history of drug, marijuana, or tobacco use, alcohol abuse, number of sexual partners and school performance, we found a significant greater association between violence and teenage pregnancy in whites (Adjusted OR=3.7, 95% CI=2.0-6.7;  $p < 0.001$ ) when compared to non-whites (Adjusted OR=2.7, 95% CI=1.8-3.9;  $p < 0.001$ ) ( $p$ -value for interaction by race = 0.039).

**Conclusions-Implications:** We found evidence for an association between partner violence and teenage pregnancy in both white and non-white teenagers. Screening for abuse and safety within relationships in the adolescent population is of great importance as to aid in reducing the teenage pregnancy rates in the United States.

## O14.

### Marijuana Use and the Risk of Suicidal Ideation in American High School Students

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**Introduction and Objective:** According to the CDC, suicide is the third and second most common cause of death in children 10-14 and young adults 15-24. Marijuana use is frequent among adolescents, and because substance use has been identified as risk factor for suicide, the potential relationship between marijuana use and suicide should be explored. This study is designed to examine the relationship between marijuana use and suicidal ideation (SI) in adolescents.

**Methods:** This is a secondary analysis of a cross-sectional study from the CDC, entitled the Youth Risk Behavior Survey (YRBS). The 2013 YRBS was compiled using a three-stage, clustered sample design of over 13,000 students at 193 regular public, Catholic, and other private highschools. Students surveyed were in the 50 U.S. states as well as the District of Columbia. We defined current marijuana users as those that smoked marijuana one or more times in the last 30 days with current light (1-9 times/month), moderate

(10-19 times/month), and heavy use (20+ times/month). Lifetime marijuana users are defined as those who have smoked one or more times in their life, not necessarily in the last 30 days. We defined SI as considering suicide in the last year. We controlled for age, sex, race and polysubstance use, but we were not able to control for coexisting psychiatric illness. A multivariate analysis was performed to assess for any relationship between the exposure and outcome variables.

**Results:** Effective sample consisted of 13,491 subjects. Overall frequency of lifetime marijuana use was 43.6% and of suicidal ideation was 16.74%. Lifetime use of marijuana was associated with suicidal ideation (unadjusted OR 2.29, 95%CI 1.98-2.66), even after adjusting for multiple potential confounders (adjusted OR 1.47, 95%CI 1.22-1.77). All levels of current marijuana use were significantly associated with increased odds of suicidal ideation, but after adjustment, only light and heavy use levels remained significant: ORs 1.61 (1.33-1.95) and 1.61 (1.33-1.95), respectively.

**Conclusions-Implications:** Our data showed a clear association between marijuana use and SI. Studies that control for psychiatric illness should be done in order to better understand the extent of this association. This study suggests the importance of screening for underlying depression and SI amongst high school students that use or have used marijuana at any frequency.

## O15.

### The Association between Socioeconomic Status and Severity of Anxiety in Adolescents with Special Health Care Needs in the U.S.

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**Introduction and Objective:** In the pediatric population anxiety disorders affect one in eight children and it costs one third of the total mental health bill. Conflicting data exist regarding the association between socio-economic status and anxiety. This study aims to determine if socioeconomic status (family income of 200% or below poverty line) is associated with a higher severity of anxiety in adolescents with special health care needs ages 13-17 in the US.

**Methods:** We studied adolescents with special health care needs between 13-17 years old with anxiety living in the US participating in the CDC 2009-10 National Survey of Children with Special Health Care Needs (NSCSHC) and with report of a diagnosis of anxiety made by a health care professional. The main independent variable was socioeconomic status defined as a family income either  $\leq 200\%$  or  $>200\%$  of the federal poverty line. The dependent variable was severity of anxiety (categorized as severe versus mild and moderate) based on parents' report. Independent associations were tested using multivariate logistic regression analysis. Stata 12 software was used to account for the complex survey design. Significance considered for  $p$ -values  $<0.05$  (two tailed test).

**Results:** We studied 3649 adolescents with special care needs. 37.8% of participants were in the low SES group. Overall, 10.9% have severe anxiety. Low SES was not associated with increased severity of anxiety in adolescents in the unadjusted model (OR= 1.5 95% CI =1.1-2.2). After adjustment for child's gender, race, and presence of intellectual disability, autism, and depression, and access to health care, lower socioeconomic status group was again not associated with the severity of anxiety (OR = 1.4, 95% CI=1.0-2.0). Autism and depression were found to be independently associated with severity of anxiety (OR= 1.9, 95% CI=1.2-3.0 and OR= 2.0, 95% CI=1.3-3.2, respectively).

**Conclusions-Implications:** We found no evidence for an association between socioeconomic status and severity of anxiety in children with special care needs in the US. Further research using a more systematic way to determine the severity of anxiety needs to be attempted as to better characterize the association between anxiety and socioeconomic status.

## O16.

### Identification Of AmpR Effectors In *Pseudomonas Aeruginosa* Regulating $\beta$ -Lactam Resistance

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**Introduction and Objective:** One of the primary mechanisms of  $\beta$ -lactam resistance in *P. aeruginosa* is the expression of chromosomally encoded  $\beta$ -lactamases, AmpC and PoxB. The expression of these  $\beta$ -lactamases is regulated by a LysR type transcriptional regulator AmpR. Besides resistance, *P. aeruginosa* AmpR plays an expansive role in regulating acute and chronic infection phenotypes such as phenazine expression, quorum sensing, and biofilm formation among others. Studies with members of Enterobacteriaceae show that the activity of AmpR is modulated by cell-wall intermediates or muropeptides that are recycled using permeases and hydrolases. The effectors of *P. aeruginosa* AmpR are yet to be elucidated - hence, the focus of this study.

**Methods:** In *P. aeruginosa*, AmpG and AmpP inner membrane permeases play a role in transport of muropeptides into the cytoplasm and periplasm, respectively. To determine the AmpR effectors, cytoplasmic and periplasmic contents of *P. aeruginosa* PAO1 were compared with its isogenic *ampG* and *ampP* in-frame deletion mutants that were constructed for this study. The fractions were analyzed using liquid chromatography/mass spectrometry. Enzymatic assays were employed to determine if there were contaminations between fractions.

**Results:** Whole cell analysis showed a statistically significant overall decrease in the levels of total muropeptides in the mutants as compared to the wild type. In addition, loss of *ampG* resulted in an increase of the N-Acetyl glucosamine (NAG) 1,6-anhydromuramyl di- and tri- peptides. Induction studies of PAO1 using sub-inhibitory concentrations of cefoxitin showed a decrease of the total muropeptide content. However, 1, 6-anhydromuramyl pentapeptide and NAG-1, 6-anhydromuramyl-pentapeptides were detected only upon induction.

**Conclusions-Implications:** This indicates that AmpG is the permease which translocates these muropeptides into the cytoplasm for further recycling. The increase of specific muropeptides upon induction suggests that the AmpR effector may be one of these muropeptides. Identification of the AmpR effectors will increase our comprehension of the mechanisms of  $\beta$ -lactam resistance. Synthesis of effector analogs inhibiting AmpR may lead to impairment of initiation of infection in *P. aeruginosa* as well as decreased pathogenesis.

## O17.

### Association between Radiation Dosage and Pain relief in Trigeminal Neuralgia Rhizotomy

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**Introduction and Objective:** Trigeminal neuralgia is an uncommon disorder that results in recurrent episodes of lancinating pain in the trigeminal nerve (TN) distribution. When medical treatment fails, surgical options such as CyberKnife radiosurgical rhizotomy exist. However, the optimal dose of radiation is still unknown. Our study investigates the existence of an association between dosage of radiation and pain relief in patients treated via CyberKnife rhizotomy.

**Methods:** In this non-concurrent pilot cohort study, a convenience sample consisting of all trigeminal neuralgia patients treated at the CyberKnife Center of Miami from 2008 to 2015 was studied, resulting in a sample of 51 patients. Patients were evaluated for level of pain relief with respect to the dosage of radiation delivered to 5 mm of TN. Pain relief was categorized into one of four outcomes according to the Boulder-Stanford Pain Relief scale, with "Excellent" and "Moderate" considered as clinically successful.

**Results:** Median radiation dose (IQR) was found to be 52 Gy (48.8-52.5). Dosage was then dichotomized to low (less than 52 Gy) or high (at least 52 Gy). There was no significant association found between median age, gender, side of procedure, and prior surgical procedures against dosage. Pain relief outcomes were found to be associated with increased radiation dosage at both 1 month and 4-6 months follow up ( $p=0.010$  and  $p<0.001$  respectively). The relative risk (95% CI) of successful pain relief for high dosage against low dosage across the entire sample was 1.57 (1.05, 2.36) and 2.04 (1.24,3.38) for 1 month and 4-6 months follow up respectively. The relative risk for males was 5.38 (0.82, 35.52)



for both intervals. The relative risk for females was 1.32 (0.93, 1.86) and 1.75 (1.09, 2.83) for 1 month and 4-6 months follow up respectively. Similar results were found for restricted analysis for patients with no previous procedures.

**Conclusions-Implications:** Higher doses of radiation to the TN were associated with higher likelihood of pain relief in patients with trigeminal neuralgia treated with CyberKnife rhizotomy, at both 1 and 4-6 months follow up. Potentially, males may respond to treatment better than females, although this requires further study. Our findings provide preliminary evidence to support a randomized control trial aimed at providing more definitive evidence regarding optimal radiation dosage that maximizes pain relief while minimizing adverse effects.

**O18.**

**Association Between Gender and the Prescription of Aspirin as a Secondary Prevention Measure to Ischemic Stroke Patients in Puerto Rico**

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**Introduction and Objective:** The American Heart Association and American Stroke Association (AHA/ASA) have recommended the prescription of aspirin within 24-48 hours of symptom onset of acute ischemic stroke as a secondary prevention measure. Evidence suggests that aspirin is prescribed less frequently for women than for men. This sex difference may indicate physician bias towards treatment of the genders. The objective of our study is to determine if gender is associated with odds of receiving prescription of aspirin as a secondary preventive measure in acute ischemic stroke.

**Methods:** We used data from participants of the Puerto Rico Cardiovascular Disease Surveillance System collected in 2007, 2009 and 2011, which included all patients admitted into 21 Puerto Rican medical centers with acute care facilities, and who were diagnosed with ICD-9 of primary and/or secondary acute stroke. The independent variable is patient gender and dependent variable is the prescription of aspirin. Age, marital status, death before discharge, hypertension, hyperlipidemia, diabetes, alcoholism, atrial fibrillation, aspirin allergy, use of anti-platelets or other anti-coagulants/ thrombolytics, were assessed for their role as potential confounders. The association between gender and aspirin prescription was tested through multivariate regression analysis.

**Results:** A total of 1950 patients were included, 52% being females. Overall, 35% of patients received aspirin within 24 hours of hospital admission. Females were less likely to receive aspirin compared to males [OR=0.77, 95% confidence interval (CI)=0.64-0.93]. After adjustment for alcoholism, death before discharge, aspirin allergy, and age, the association was [aOR (adjusted OR)=0.83, 95% CI=0.67-1.02]. Patients who died before discharge (aOR=0.45, 95% CI=0.26-0.77), with aspirin allergies (aOR=0.07, 95% CI=0.02-0.23) and who were older (aOR for every 10 year increase in age=0.83,

95% CI=0.66-1.04) were independently associated with lower chance of receiving aspirin. In analyses stratified by alcoholism status, when absence of alcoholism was reported, females were less likely to receive aspirin within 24 hours of hospitalization (aOR=0.78, 95% CI 0.63-0.96); however, when alcoholism was reported, females were more likely to receive aspirin, although the association was not statistically significant (aOR=1.98, 95% CI 0.66-5.99).

**Conclusions-Implications:** In this hospital-based Puerto-Rican sample, women were less likely to receive aspirin as a secondary prevention for stroke, independently of demographical and clinical presentation. Our findings support the need to identify and minimize the possible bias in aspirin prescription due to gender. Also, our findings generate the hypothesis that history of alcoholism may impact aspirin prescription decisions, warranting further studies.

**O19.**

**Association of Health Insurance Coverage and Administration of Thrombolytic Therapy for Acute Ischemic Stroke Patients in Puerto Rico**

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**Introduction and Objective:** Acute ischemic stroke (AIS) mainstay of treatment is the administration of thrombolytic therapy (tissue plasminogen activator (tPA)). In the United States access to health care, including the administration of tPA during AIS events is determined by the type of health insurance coverage. The purpose of this study is to assess the association of health insurance status (public or private) on tPA use in Puerto Ricans with AIS.

**Methods:** We conducted a nonconcurrent prospective study that compiled information from medical records of AIS cases from 21 hospitals located in the Commonwealth of Puerto Rico in 2007, 2009, and 2011. Each suspected AIS incident was validated with MRI or CT scan imaging. For this report we performed a secondary analysis utilizing data of the Puerto Rico Cardiovascular Surveillance Study, which included descriptive, bivariate analysis on the dependent (thrombolytic therapy) and independent (insurance status) variables, and multivariate analysis. Odds ratios with a 95% CI were used to assess the extent of association.

**Results:** The mean age of 1,017 patients (52.2% females) was 71 (+ 13.4) years. Comorbidities included hypertension (87.2%), hyperlipidemia (31.1%), diabetes mellitus (55.4%), active smoking status (8.9%) and alcoholism (6.3%). The odds for receiving tPA was similar in patients with private or public health insurance coverage (OR= 0.9, 95%CI= 0.61-1.3;p=0.56). Approximately 5.3% of AIS patients received tPA. Men were more likely to receive tPA (6.9%) as compared to women (3.9%) (p= 0.004). Thus, males were 1.7 times more likely to receive tPA as compared to females (OR= 1.7, 95%CI= 1.02-2.7; p<0.05).

**Conclusions-Implications:** In contrast to many places across the continental United States, in Puerto Rico the type of health insurance coverage does not play a significant predictive role in the

administration of thrombolytic therapy in AIS cases. We found low rates of tPA use for acute ischemic stroke, particularly among women in Puerto Rico. It is crucial to increase the overall use of tPA in the Puerto Rican population. Future research should focus on reducing the stroke treatment disparity between men and women and to determine the reasons for the low rate of tPA use in Puerto Rico.

### O20.

#### Utility of ICG dye with Firefly fluorescence imaging for detection of sentinel lymph nodes in patients with endometrial or cervical cancer, and discriminative ability for detecting metastases.

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**Introduction and Objective:** Complete lymphadenectomy is the standard of care for endometrial and cervical cancer, but is associated with significant morbidity. Sentinel lymph node (SLN) mapping has reduced this morbidity in melanoma and breast cancer, but is yet to be validated for endometrial and cervical cancers. The objective of our study is to determine the detection rate of SLNs using indocyanine green (ICG) dye with Firefly fluorescent imaging. WE also aimed to determine the sensitivity, specificity, positive and negative predictive values, and likelihood ratios of SLNs for metastatic disease.

**Methods:** Retrospective cohort study done using patients from the South Florida Gynecologic Oncologists private practice. Inclusion criteria were: a diagnosis of endometrial or cervical cancer or complex atypical hyperplasia, SLN biopsy using ICG dye with Firefly fluorescent imaging, and complete pelvic and/or para-aortic lymphadenectomy. 24 patients were identified who underwent SLN biopsy using ICG dye alone, and 43 patients who underwent the procedure with both ICG & Methylene blue (MB) dyes. Data on the detection of SLNs was obtained from operative reports and the status of lymph nodes for metastases was obtained from final pathology reports.

**Results:** Most patients in the ICG only and MB groups had a post-operative diagnosis of endometrial cancer (70.8% and 90.7%, respectively) and had stage 1 (91.7% and 76.8%, respectively), grade 1 (75% and 60.5%, respectively) tumors. The rates of combined pelvic and para-aortic lymphadenectomy were 91.7% and 67.4%, respectively, with the remaining patients having only pelvic lymphadenectomy. Per patient, bilateral detection rates (DRs) in the ICG only and ICG & MB groups were 67% (95% CI 47%-86%) and 56% (95% CI 41%-71%), respectively. In the ICG only group, SLNs had a sensitivity of 100% (95% CI 20.7%-100%), negative predictive value of 100% (95% CI 85.1%-100%), and a likelihood ratio for a negative result of zero. In the ICG & MB group, sensitivity was 0% (95% CI 0%-56.2%), NPV 92.1% (95% CI 79.2%-97.3%), and LR(-) 1.14.

**Conclusions-Implications:** Using ICG alone with Firefly fluorescence imaging resulted in acceptable detection rates of SLNs. When SLNs were detected in the ICG only group, the sensitivity, NPV, and LR(-) were sufficient to rule out metastatic disease in non-SLNs. Although these results are promising, confidence intervals were wide. Further studies should attempt to increase precision with larger sample sizes to confirm these results, in addition to discerning factors which can increase detection rate of SLNs (such as ICG concentration and size of lymph node biopsy).

### O21.

#### The association between pre-pregnancy depression and breastfeeding outcomes

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**Introduction and Objective:** Despite abundant research supporting the benefits of breastfeeding, more than 25% of women in America are not breastfeeding their children. The effects of prenatal demographic factors have been well researched, but the association between depression and breastfeeding is less understood. Postpartum depression has been shown to have a negative influence on breastfeeding outcomes, and pre-pregnancy depression could have a similar negative effect. This study was done to determine any association between pre-pregnancy depression and breastfeeding initiation and duration.

**Methods:** The study population was women who gave birth between 2009 and 2011 and participated in the Centers for Disease Control and Prevention's Pregnancy Risk Assessment Monitoring System (PRAMS). Participants were living in 40 states in the US. A complex sampling design was used to select survey participants. Data was collected via mail and telephone questionnaires. 101,456 women were surveyed. 89,583 were selected for breastfeeding initiation (women qualified if the infant was alive, singleton, and currently living with mother). 60,143 were selected for breastfeeding duration (women qualified if they initiated breastfeeding and if the infant was  $\geq 3$  months at survey time). The dependent variables were breastfeeding initiation and duration. The independent variable was pre-pregnancy depression. Multivariate logistic regression was used to determine independent associations between depression prior to pregnancy and the initiation and duration of breastfeeding.

**Results:** 82% of women without pre-pregnancy depression initiated breastfeeding, compared to 75% of women with pre-pregnancy depression (p-value <0.001). Women with pre-pregnancy depression were significantly less likely to initiate breastfeeding (unadjusted OR=0.66, CI=0.61-0.72, p<0.001; adjusted OR=0.86, 95% CI=0.78-0.96, p=0.007). 57.7% of women with pre-pregnancy depression breastfed for <3 months compared to 50.2% of women without pre-pregnancy depression. Women with pre-pregnancy depression were not significantly less likely to breastfeed for  $\geq 3$  months (unadjusted OR=0.74, CI=0.68-0.80, p<0.001; adjusted

OR=0.92, CI=0.83-1.01, p=0.081).

**Conclusions and Implications:** Women who experienced pre-pregnancy depression were significantly less likely to initiate breastfeeding after adjusting for confounders. Of note, while pre-pregnancy depression was associated with breastfeeding initiation only, postpartum depression was associated with duration only. Addressing pre-pregnancy depression may directly impact rates of breastfeeding initiation, ultimately improving the health of the child, mother and overall family.

## O22.

### Rare Case of Non-Anion Gap Metabolic Acidosis Associated with SGLT-2 Inhibitor Use

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**Introduction and Objective:** Sodium glucose co-transporter-2 (SGLT-2) inhibitors are a promising new class of oral hypoglycemic agents which reduce hyperglycemia by increasing urinary glucose excretion, independently of insulin secretion or action. The most common reported side effects of SGLT-2 inhibitors are hypotension, hyperkalemia, hypoglycemia with concomitant use of insulin or insulin secretagogues, increase in low density lipoprotein, genital mycotic infections, urinary tract infections and anion-gap metabolic acidosis (euglycemic diabetic ketoacidosis and ketosis). We report a rare case of non-anion gap metabolic acidosis (NAGMA) in a patient taking Canagliflozin, the first food and drug administration (FDA) approved SGLT-2 inhibitor.

**Case Report:** A 64-year-old Caucasian woman with type 2 diabetes presented with an episode of syncope. Few days prior, the patient was having malaise, weakness and intermittent dizziness (described as lightheadedness). Dizziness had minimally resolved with use of meclizine. On admission, physical examination was unremarkable with normal orthostatic vitals. Her labs revealed serum glucose (175mg/dl), hyperkalemia (5.6mEq/L), elevated lipase (574U/L), glycosuria (1000+) and low bicarbonate level (15mEq/L). A diagnosis of NAGMA was made after getting arterial blood gas that showed a pH of 7.2 with a normal anion gap. Labs from previous admission did not show any metabolic abnormalities which helped us to rule out the possibility of renal tubular acidosis. Review of her medication revealed the use of canagliflozin and metformin, which were both held during hospital course. She was managed on dextrose 5% normal saline, long acting basal insulin with pre-meal insulin and sliding scale. Her dizziness and weakness resolved and metabolic parameters (pH, bicarbonate and potassium) normalized. She was discharged on long acting insulin.

**Conclusions-Implications:** SGLT-2 inhibitors seem to be associated with NAGMA, perhaps as a consequence of their non-insulin dependent glucose clearance and osmotic diuresis. Literature review revealed one case that showed NAGMA associated with Canagliflozin, but confounding factors such as poor nutrition status and heavy alcohol use were noted. Our case is unique because the

patient presented with NAGMA without any identifiable confounding factors. The half-life of Canagliflozin in a patient with normal renal function is 10-12 hrs. The fact that NAGMA and other metabolic abnormalities resolved within 24 hours after holding Canagliflozin reinforces the possibility of medication induced adverse effect. Further prospective research is needed to better understand the underlying mechanism of NAGMA with the use of Canagliflozin. Until then, we recommend physician to be vigilant about the metabolic derangements while prescribing SGLT-2 inhibitors.

## O23.

### Can Residents Be Trained and Safety Maintained?

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**Introduction and Objective:** Teaching hospitals and faculty need to balance the educational mission for training residents with patient safety. There is no data studying the change in trauma patient outcomes before and after implementation of a surgical residency. The objective of this study was to compare trauma center outcomes before and after the advent of a surgical training program. We predicted that patient centric outcome metrics would not be impacted by the integration of surgical residents into trauma patient care.

**Methods:** A retrospective review was performed using the Crimson Continuum of Care Dataset (CCCD) and the Trauma Injury Severity Scores (TRISS) for the year prior to implementation of a surgical residency, compared to the 6 months following initiation of the residency. Severity and risk adjusted performance measures included mortality, readmissions, complications, and length of stay. Using TRISS, actual and predicted mortality was compared. Statistical significance was defined as  $p \leq 0.05$ .

**Results:** There were 1,535 admissions the year prior to starting the residency and 856 admissions for the 6 months following the implementation of the program. The demographics were similar between the two groups. There was no clinically significant difference in observed mortality after the initiation of a surgery residency, based on CCCD variables and TRISS datasets. There were also no significant differences in complications and readmission rates.

**Conclusions-Implications:** The implementation of a general surgery residency is an immense collaborative effort. We found that initiating a surgical training program did not impact mortality rates or complications of trauma patients. Surgical resident arrival to a busy trauma service also did not negatively impact the length of stay, complications, readmission rates or patient safety.

## O24.

### Perceived stigma of mental illness and utilization of mental health services in a South Florida community: Preliminary analysis

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**Introduction and Objective:** Mental health poses a burden as one of the most common illnesses in the population (NAMI, 2013). Access to treatment is one barrier, but attitudes towards treatment, most significantly stigma associated with mental illness, is also a barrier limiting willingness to seek treatment (Andrade et al., 2014; Clement et al., 2015). The purpose of this study is to examine and describe between the stigma of mental illness and the attitudes towards seeking professional treatment of a highly Hispanic South Florida community.

**Methods:** A cross-sectional study design was employed using a convenience sample. Participants completed a demographic form, the Perceived Stigma Scale (PSS), and the Attitudes towards Seeking Professional Psychological Help – Short Form (ATSPPH-SF).

**Results:** Preliminary analysis included a sample of 77. Demographics characteristics include: 70.1% female, 80% White, 75%, Hispanic, and 42% are 1st generational American. The PSS (possibly range of 16-64) average was 41.5+8.4 and the ATSPPH-SF (possibly range of 0-30) average was 18.3+5.2. In this preliminary sample, the correlation between PSS and ATSPPH-SF was low and not statistically significant ( $r=0.208$ ,  $p=0.074$ ).

**Conclusions-Implications:** Considering past research, we expected a positive correlation between PSS and ATSPPH-SF; however preliminary results of this study did not show significant statistical correlations. This suggests a larger sample size might be necessary to show a significant association, or that this association is not existent in this population. Depending on the final sample's results, implications for how mental health stigma and attitudes towards seeking care could be addressed in this highly Hispanic community.

## O25.

### Giant Cystic Degeneration of a Uterine Leiomyoma in a Patient with Autosomal Dominant Polycystic Kidney Disease

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**Introduction and Objective:** Autosomal dominant polycystic kidney disease (ADPKD) is associated with extrarenal manifestations such as hepatic or pancreatic cysts and cerebral aneurysms. The presence of uterine cysts as an extrarenal manifestation of ADPKD is rare and has only been reported in two cases in the literature. We report a case of a patient with ADPKD and giant cystic degeneration

of a uterine leiomyoma, the largest reported thus far.

**Case presentation:** 52- year-old female, previously diagnosed with ADPKD, presented to the emergency room with a large abdominal mass, approximately 30 weeks pregnancy size, abnormal uterine bleeding, and symptomatic anemia. On physical examination, a tense, immobile, mass was palpable abdominally extending 6 cm above the umbilicus, causing abdominal distention and pain.

The patient experienced active vaginal bleeding and reported weakness and fatigue.

Pelvic sonography revealed a 20.3 cm intramural uterine lesion consistent with cystically degenerating leiomyoma. Magnetic resonance imaging confirmed central cystic degeneration of a leiomyoma leading to mass effect and compression of the inferior vena cava and proximal common iliac veins without thrombosis.

Multiple cysts were visualized in the kidneys and the liver consistent with the patient's diagnosis of ADPKD. The patient's hemoglobin was 4.6 g/dL and blood transfusions were required to treat symptomatic anemia. Heavy vaginal bleeding persisted and the patient underwent bilateral uterine artery embolization, which significantly improved the vaginal bleeding. In an effort to alleviate the patient's abdominal distention, Computerized Tomography guided aspiration of 2.5 liters fluid from the cyst was performed, which significantly decreased uterine size and symptoms. The aspirated fluid was serous, negative for malignancy on cytology, and showed no evidence of infection. The patient was discharged in stable condition and underwent an uncomplicated total laparoscopic hysterectomy with bilateral salpingectomy as an outpatient with an uneventful recovery. Surgical pathology revealed a benign 1478-gram uterus with cystically dilated leiomyoma.

**Conclusions-Implications:** In this case, uterine artery embolization helped stabilize active vaginal bleeding. Though not a treatment for the active disease process, percutaneous cyst aspiration decreased the patient's abdominal bulk symptoms by shrinking uterine size and alleviated the pressure onto her great vessels. This stepwise approach permitted outpatient surgery in a minimally invasive fashion as opposed to emergency surgery at time of admission in the face of heavy bleeding with multiple transfusions and requiring laparotomy. Although a rare entity, this case report raises awareness of uterine cysts being a possible extrarenal manifestation in ADPKD patients.

## O26.

### Exclusive breastfeeding in mothers who delivered vaginally versus cesarean section: A retrospective exploratory comparative study

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**Introduction and Objective:** The rate of breastfeeding remains fairly



low in the United States whereas the rate of cesarean deliveries is increasing. Literature reveals an apparent direct negative effect on breastfeeding initiation for mothers who underwent cesarean delivery compared to those who delivered vaginally. Healthy People 2020 has identified targets to increase the proportion of infants who are breastfed. Additionally, as of January 2016, The Joint Commission expanded the threshold for exclusive breast milk feeding in the core measure set for perinatal care, which will impact more than 80% of accredited hospitals with birthing units. Therefore the purpose of this study was to explore, describe, and assess for relationships between maternal factors, neonatal factors, and breastfeeding status at delivery and post delivery follow-up.

**Methods:** Retrospective data was collected from medical charts of women who delivered vaginally versus cesarean (n= 197) between October 1, 2011 and September 30, 2014. Random chart selection was conducted. Subgroups were differentiated, and breastfeeding intention at delivery and status at post-partum follow up were documented. Comparisons were analyzed with chi-square calculations.

**Results:** There was no significant association between parity and delivery method (n=197, p=0.11). The primiparous-vaginal subgroup expressed the highest intent to exclusively breastfeed (53.2%), whereas, multiparous vaginal subgroup expressed the highest intention for exclusive formula feeding (17.8%), (p=0.001). Primiparous-cesarean mothers maintained exclusive breastfeeding at the lowest proportion (29.0%) at post delivery follow up. At follow up, the multiparouscesarean mothers, who on the whole had the highest professed intention for breast and formula, yielded an increased rate of exclusive breastfeeding (45%), and the lowest proportion of formula feeding (3.5%) (p=0.030). Furthermore, primiparous-cesarean mothers had the lowest success rate in breastfeeding exclusively at follow-up with only 50% of those who intended to breastfeed only were doing so at the first follow-up visit. The highest conversion from intention to use both breastfeeding and formula to formula only (33.3%) was seen in the primiparous mothers with vaginal delivery. The highest conversion from intention to use both breastfeeding and formula to breastfeeding only (35.9%) was seen in the multiparous-cesarean mothers. The other groups showing a conversion rate of less than 29%.

**Conclusion-Implications:** Cesarean section has a negative impact on breastfeeding in primipara. Primiparous-cesarean mothers had the lowest success rate in breastfeeding exclusively at follow-up. In multiparous women there was minimal difference in breastfeeding rate at follow up regardless of mode of delivery.

**O27.**

**A Multivariate Approach to Treat a Large Aortic Free Floating Thrombus**

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**Introduction and objective:** Free floating thrombus (FFT) of the aorta is a rare source of embolism. Treatment options include anticoagulation in high risk surgical patients, conventional surgical treatment or minimally invasive endovascular intervention. We present a rare case of a renal infarction secondary to a 6 cm FFT treated successfully with combined minimally invasive endovascular intervention with stent grafting and anticoagulation.

**Case presentation:** A 49 year old female smoker with a history of asthma, presented to the ER complaining of right flank pain, nausea and abdominal bloating for 1 week. Physical exam was remarkable for right costovertebral tenderness. Laboratory showed a leukocytosis of 18.5 x 10<sup>3</sup>/mcL with a left shift, CRP 7.15 mg/dL and LDH 576 U/L. CT abdomen/pelvis with contrast showed two areas of geographically delineated hypo perfusion in the upper and lower pole of the kidney extending to the cortical surface. Chest and abdomen CTA showed intraluminal cylindrical filling defect in the descending thoracic aorta of 6 cm, diameter of 8 mm representing a thrombus. TEE showed a freely moving mass, pedunculated and attached to the descending thoracic aorta, distal to the left subclavian artery with moderate plaque formation. Patient was started on full anticoagulation and CT scan at 1 week showed no reduction in thrombus size. Eventually, the patient was taken to the OR for an endovascular stent graft. CT scan post-procedure showed no evidence of the thrombus and the patient was discharged on warfarin with a target INR of 2-3.

**Conclusions-Implications:** There are currently no guidelines for the management of FFT. Options include anticoagulation alone, open surgery, endovascular intervention or a combination of these modalities. Choosing one modality over the other should be individualized based on the patient's co-morbidities, age, recurrence, local malignancy, thrombus size and morphology, current symptoms and risk factors predisposing to thrombus formation. There have been reported cases where mortality with anticoagulation alone has reached 50%. Stent Grafting has been recently suggested as an alternative to open surgery for the management of FFT with high rates of success and low rate of complications. Recurrence rates of 10% to 20% have been reported therefore lifelong anticoagulation is recommended following open surgery. The incidence of thromboembolism after endovascular management has not been fully reported. It would be beneficial to obtain more data regarding the incidence of new thromboembolic events after an endovascular approach. In our case we combined endovascular stent grafting and anticoagulation and no new embolic events were found.



# Poster Abstracts

**P1.**

**Adaptive control of lung volume for respiratory pacing in the rodent model**

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**Introduction and Objective:** High-cervical spinal cord injury can lead to respiratory deficiency due to paralysis of inspiratory muscles. Functional electrical stimulation (FES) has been applied to restore ventilatory function in individuals with respiratory deficiency as an alternative to mechanical ventilation. Control paradigms for FES are often based on open-loop controllers that depend on careful calibration and setup by a clinician and technician but are unable to adapt to a patient's respiratory demand and changes in electrode properties. Our goal is to develop a neuromorphic controller that can adapt to the respiratory needs of the user based on physiological feedback values.

**Methods:** A software-based adaptive controller was implemented to modulate the amplitude of stimulation pulses delivered to the diaphragm based on lung volume feedback in an uninjured, anesthetized rat model. Stimulation pulse width (200  $\mu$ s) and frequency (75 Hz) were held constant. Lung volume was derived through real-time integration of the flow signal from a pneumotachometer incorporated into the breathing circuit. Native breath volume was used to determine a baseline breath volume target. To assess the ability of the system to adjust ventilation in a controlled manner, the targeted lung volume trajectory was scaled to 120% of the baseline breath volume to mimic the response to hypercapnia observed in previous studies with anesthetized rodents; respiratory period was kept at a constant value determined by initial breathing conditions.

**Results:** The controller achieved an adequate and steady breathing pattern within 25 - 30 cycles after initiating stimulation at baseline target. After increasing the target volume to 120% of baseline, the controller adapted to the change in 10 cycles. After reducing the desired volume back to baseline, the controller achieved adaptation in 15 cycles.

**Conclusions-Implications:** These results demonstrate the ability of the adaptive controller to achieve the desired target by adapting to a change in the desired ventilatory pattern. The controller was also able to account for muscle fatigue by steadily increasing charge delivered at each cycle.

**P2.**

**Humanized relaxin receptor mouse model for testing small molecule modulators.**

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**Introduction and Objective:** Relaxin peptide hormone (RLN) was initially discovered through its effects on parturition. Later, new functions of RLN were recognized including vasodilatory, angiogenic, and antifibrotic tissue remodeling properties. The therapeutic potentials of RLN were tested in various animal models of organ fibrosis, cardiovascular deficiency, and reproductive abnormalities. Recent data from clinical trials of relaxin treatment in acute heart failure indicated a significant decrease in patient lethality. However, the short half-life *in vivo*, possible immune response, and a high cost of recombinant peptide production complicate the chronic use of RLN. Our laboratory has identified highly selective small molecule agonists of human relaxin receptor, RXFP1. High stability, comparable activity, and low toxicity make the RXFP1 agonist a promising pharmacologic agent. This agonist failed to activate rodent RXFP1 receptors due to the divergence of the amino acid sequence in the allosteric binding site. This hampers the testing of RXFP1 agonists *in vivo*. To overcome this problem we have produced humanized RXFP1 mice.

**Methods and Results:** Using gene targeting of ES cells, we inserted cDNA of the human gene (hRXFP1) with the internal ribosomal entry site into one of the mouse RXFP1 (mRXFP1) introns. The resulting knock-in allele of hRXFP is driven by the endogenous mouse promoter whereas the mouse gene expression is disrupted. Chimeric males containing recombinant ES clones were used to establish germ-line transmission of the mutant allele. Expected ratio of mutant progeny was shown in various crosses. Using quantitative RT-PCR and primers specific for hRXFP1 and mRXFP1 we have shown a similar pattern of expression of both alleles in different organs of hRXFP1/mRXFP1 animals. To generate the mouse line homozygous for hRXFP1, we first produced diheterozygous mice with hRXFP1 and the deleted allele of this gene and intercrossed them to produce hRXFP1/hRXFP1 homozygotes. Both diheterozygotes and fully humanized females showed normal fertility. The pubic ligament of pregnant females was measured at day 18.5 of pregnancy and was fully dilated. Analysis of mammary nipple differentiation and the reproductive tract suggested full complementation of the disrupted mouse gene by the human homologue.

**Conclusions-Implications:** Taken together, these data indicate that our humanized mice express the fully functional human relaxin receptor gene thus allowing testing of small molecule agonists of RXFP1 *in vivo*.

**P3.**

**Association between Type-2 Diabetes and In-Hospital Mortality in Puerto Rican Patients Hospitalized with Decompensated Heart Failure**

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**Introduction and Objective:** Heart failure is the number one cause of death in the United States. Type-2 diabetes mellitus has been

established as a significant risk factor for the development of heart failure and other cardiovascular diseases. Although the association between diabetes and heart failure has already been established, there is limited information on the risk of in-hospital mortality due to heart failure in diabetic vs. non-diabetic patients, particularly among Hispanics. This study investigated if an association exists between diabetes and in-hospital mortality among patients with decompensated heart failure in the Puerto Rican population.

**Methods:** We performed a secondary analysis of data from participants of the Puerto Rico Cardiovascular Disease Surveillance Database, using a non-concurrent cohort design. Participants consisted of patients admitted with the diagnosis of heart failure in 21 hospitals with acute care facilities in Puerto Rico in 2007, 2009 and 2011. The independent variable was diabetes status and the dependent variable was in-hospital mortality. Independent associations were tested using multivariable logistic regression using SPSS software.

**Results:** The sample totaled 1884 participants, of which 59% had diabetes, and 5.5% died during hospitalization. Unadjusted odds for in-hospital mortality for diabetic patients was 1.3 (95% CI 0.9–2.0). After adjusting for age, gender, selected co-morbidities, smoking, and excessive alcohol use, diabetes status was associated independently with about double the risk of in-hospital mortality (OR 1.9, 95% CI 1.1–3.2). When both characteristics of smoking and obesity were omitted, there was no significant association between diabetes and in-hospital mortality (OR 1.5, 95% CI 0.9–2.3).

**Conclusions-Implications:** We did not find strong evidence for an association between diabetes and increased in-hospital risk for mortality in our sample of patients with heart failure. Further studies with larger sample size and better records of key variables – such as BMI – are needed.

## P4.

### Association between gender and mortality among Puerto Rican patients hospitalized for heart failure with preserved ejection fraction

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**Introduction and Objective:** According to the Centers for Disease Control and Prevention, heart failure affects nearly 5.7 million people in the United States and contributes to more than 55,000 deaths each year. There is an increasing prevalence of patients with heart failure with preserved ejection fraction (HFPEF) due to the aging population, increased number of comorbid conditions, and improved diagnostic imaging. It is important to identify specific risk factors and potential gender disparities between men and women with HFPEF to develop appropriate preventive and therapeutic approaches to care. The objective of this study was to assess the association between gender and in-hospital mortality among Puerto Rican patients with HFPEF.

**Methods:** This is a secondary data analysis of the Puerto Rican Heart Failure Study, which has a non-concurrent prospective design. We included patients from study years 2007, 2009 and 2011 with heart failure and preserved ejection fraction ( $\geq 45\%$ ). We assessed for potential confounders using bivariate analyses across gender and mortality. Chi-squared analysis was used to assess associations for categorical variables. Logistic regression analysis was used to construct a multivariate model taking into account confounding and clinically significant variables.

**Results:** We identified a total of 1,818 participants with heart failure and excluded patients with missing ejection fraction data ( $n = 663$ , 36.5%). A total of 1,115 patients had a recorded ejection fraction, 445 of which met the established inclusion criteria. Women were more likely to be older and arrive to the hospital in an ambulance, while chronic renal failure was more prevalent among men. From our analysis, gender did not have a statistically significant association with mortality (OR 0.6, 95% CI 0.3 - 1.4). When the model was adjusted for confounding variables, including age, mode of transportation to the hospital, hypertension, and chronic renal failure, women with HFPEF had similar odds of dying from any cause compared with men with HFPEF (OR= 0.7, 95% CI= 0.3 - 1.8).

**Conclusions-Implications:** In this sample of Puerto Rican patients with HFPEF, no significant association was found between gender and all-cause in-hospital mortality. Future steps include standardization of data collection to allow for more robust modeling of potential risk factors.

## P5.

### Serum Calcium Levels on Admission and In-Hospital Mortality After Incidental Acute Myocardial Infarction

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**Introduction and Objective:** Calcium plays an important role in human physiology as it is involved in cardiac contraction, enzymatic activity, and electrophysiological characteristics of the heart. Previous studies have reported that high serum calcium levels are an independent predictor for the incidence of coronary artery disease including acute myocardial infarction (AMI). It is also tightly linked to various cardiovascular risk factors such as hypertension, hyperglycemia, and hyperlipidemia. The association between admission serum calcium levels and in-hospital mortality in patients with AMI has not been well studied. The objective of our study is to examine the association between serum calcium levels and in-hospital mortality in Hispanic patients suffering from incidental AMI.

**Methods:** We conducted a secondary analysis of the Puerto Rico Cardiovascular Disease Surveillance Study, (PRCVDS) which has a non-concurrent cohort design. The database included data of Hispanic men and women residing in Puerto Rico who were hospitalized for AMI in 21 medical centers with acute care facilities in 2007, 2009, and 2011. Our initial population was a sample of 2965 patients who had an AMI. Our inclusion criteria included

patients older than 18 years with recorded serum calcium levels on admission. Calcium levels were categorized using a cutoff value of >10.2 mg/dL as “High” versus ≤10.2 mg/dL as “Normal.” We conducted a multivariate analysis to determine the association between serum calcium levels on admission and in-hospital mortality after adjusting for 8 potential confounders: gender, age, hyperlipidemia, hypertension, diabetes, smoking history, renal disease, and coronary artery bypass graft history.

**Results:** A total of 2231 patients comprised our study population. The patients were 55% men and 81% were older than 55 years. No potential confounding variables were identified based on the analysis of 8 patient characteristics. According to multivariate logistical regression analysis, higher serum calcium levels were not associated with in-hospital mortality (OR 0.7, 95% CI 0.2-2.2, p = 0.5). Incidentally, the results from our analysis also show that of the patients that died, 8.6% were women while only 5.6% were men (p = 0.006).

**Conclusion-implications:** High serum calcium was not significantly associated with in-hospital mortality in Puerto Rican patients admitted with incidental AMI. Our study was conducted in Puerto Rico, and therefore the generalizability of these findings may not apply to other Hispanic populations. Additionally, our study examined serum calcium levels as a categorical variable. Future research will be aimed at stratifying various levels of high calcium into more specific ranges to determine if a graded response exists.

## P6.

### Differences in Symptomatology between Puerto Rican Men and Women Presenting with Acute Myocardial Infarction

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**Introduction and Objectives:** Heart disease, including Acute Myocardial Infarction, (AMI), is the leading cause of death in both men and women in the United States. One in four deaths in the United States every year can be attributed to heart disease; every year, 720,000 Americans have an AMI. The prognosis for an individual presenting with an AMI is dependent on timely diagnosis and prompt treatment. There is a growing body of evidence that suggests that men and women vary in their clinical presentations of an acute myocardial infarction. Our objective is to determine if Puerto Rican men and women differ in symptomatology when presenting with an AMI.

**Methods:** This is a secondary analysis of a non-concurrent prospective study of 2962 Puerto Rican patients hospitalized with an AMI during 2007, 2009, and 2011. The Puerto Rico Heart Attack Surveillance electronic database consists of patients treated for AMI and includes 700-900 variables. The dataset was narrowed to 2962 patients who fit the 410-414 codes of the International Classification of Disease (ICD) 9<sup>th</sup> version consistent with the possible presence of AMI; the information contained in the medical records was reviewed

and validated by trained nurses and physicians. Patients’ reported symptoms were analyzed via SPSS 20 to examine differences between genders. We conducted a univariate, bi-variable, adjusted and unadjusted analysis.

**Results:** Compared to men, women were significantly more likely to present with jaw pain [OR 1.86 (95%CI 1.12-3.09)], nausea [OR 1.45 (95%CI 1.20-1.74)], vomiting [OR 1.34 (95%CI 1.06-1.70)], and fatigue [OR 1.38 (95%CI 1.12-1.70)]. On the other hand, men were significantly more likely to report left arm pain [OR 0.67 (95%CI 0.53-0.83)], right arm pain [OR 0.58 (95%CI 0.36-0.93)], left shoulder pain [OR 0.68 (95%CI 0.48-0.97)], chest pain [OR 0.67 (95%CI 0.55-0.81)], and numbness in arm/hand [OR 0.43 (95%CI 0.20-0.92)].

**Conclusions-Implications:** Findings from this study suggest that Puerto Rican men and women experience different symptoms when presenting with an AMI. Puerto Rican women are more likely to experience nonspecific symptoms such as nausea, vomiting, and fatigue while men are more likely to experience left/right arm pain, chest pain, and left shoulder pain. It is critical to recognize such differences as prompt diagnosis and treatment are essential to ensure a more favorable prognosis.

## P7.

### The effect of beta-blockers on in-hospital mortality in patients with acute myocardial infarction

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**Introduction and Objective:** Most of the studies on the efficacy of beta-blocker therapy in the post-acute myocardial infarction (AMI) setting were performed before PCI techniques were improved and the use of secondary prevention medications. Compared to other populations, minimal research has been done to examine the efficacy of beta-blockers among Hispanics. The study objective is to determine whether there is an association between beta-blocker use and in-hospital mortality in Puerto Rican patients hospitalized with an AMI.

**Methods:** We conducted a secondary analysis of the Puerto Rico Cardiovascular Surveillance Study (PRCVS), which has a non-concurrent prospective study design. The PRCVS database is comprised of a sample of Puerto Ricans who were hospitalized for a possible AMI at any one of the twenty one academic or non-teaching medical centers on the Island during the years of 2007, 2009, and 2011. Our research focused on the administration of beta-blockers within the first 24 hours post-AMI as the main independent variable. The outcome measured was in-hospital mortality. Data analysis was performed using chi square testing, bivariate and logistic multivariate modeling using SPSS v.20.

**Results:** The study findings suggest Puerto Rican patients who receive beta-blocker therapy after their first AMI are 60% less likely to die in the hospital when compared to AMI patients who did not receive beta-blocker therapy. The odds ratio was calculated at 0.4,



with 95% confidence intervals of 0.20-0.50 and 0.20-0.60 before and after adjusting for confounders, respectively, with p-values of <0.001.

**Conclusions-Implications:** The findings suggest that after controlling for additional medical therapies, including medications and secondary prevention practices (i.e. use of invasive coronary procedures) beta-blockers in the post-AMI setting are associated with a decreased in-hospital mortality in the Puerto Rican population. Thus, beta-blockers should remain part of the standard of care in patients with AMI. Although it has been postulated that the efficacy of beta-blockers has been diluted in an age where PCI techniques and cardiac medications have improved, the study findings indicate that beta-blocker therapy is an indispensable therapy in patients who recently suffered an AMI.

### P8.

#### Gender differences in in-hospital mortality in patients with diastolic heart failure in the Puerto Rican population.

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**Introduction-Objectives:** Forty to seventy percent of patients with heart failure have diastolic heart failure. Information is scarce regarding gender specific in-hospital mortality for diastolic heart failure, especially in the Puerto Rico population.

**Study aim:** To assess whether there are gender differences in in-hospital mortality among Hispanic patients with decompensated heart failure with preserved ejection fraction.

**Methods:** We performed secondary analysis of data from patients participating at the Puerto Rico Cardiovascular Disease Surveillance System (PRCDSS) years 2007, 2009, and 2011. We included patients hospitalized with congestive heart failure with ejection fraction >45% and age >50 years old. The independent variable was gender (male or female) and the dependent variable was in-hospital mortality. The independent association between these variables was tested using multivariate logistical regression.

**Results:** Out of 1818 HF patients, 492 fulfilled our study criteria. Overall 28 (5.7%) died before discharge (6.9% of males, 4.7% of females). In the unadjusted (crude) analysis, females had 30% lower odds to experience in-hospital mortality as compared to males but the findings were not significant (95% CI=0.3-1.4). After adjustments for demographic and clinical confounders we found no difference for in-hospital mortality between genders (OR for females=0.5, 95% CI= 0.2-1.3, p-value=0.139). Hypertension at admission was independently associated with lower odds of in-hospital mortality (OR=0.3, 95% CI=0.1-0.8, p=0.016).

**Conclusions-Implications:** Among patients hospitalized in Puerto Rico with diastolic congestive heart failure we found no evidence of an association between gender and in-hospital mortality.

### P9.

#### Impact of mode of transportation on in-hospital mortality in Puerto Rican patients hospitalized with an acute myocardial infarction

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**Introduction and Objective:** Although studies exist describing the correlation between treatment time and AMI patient outcomes, there has been little information collected on the impact of arrival to hospitals via ambulance and its association with mortality in AMI patients. This is especially true for Hispanic patients hospitalized with an AMI. As a result, the purpose of this study is to investigate if there is a difference on in-hospital mortality of patients who arrived by ambulance/helicopter vs. alternative transport in Puerto Rican patients hospitalized with an initial AMI.

**Methods:** We performed a secondary data analysis from the 2007, 2009, and 2011 Puerto Rico Cardiovascular Disease Surveillance electronic database, an observational, non-concurrent, prospective study. The data came specifically from 21 medical centers located in Puerto Rico. There are three separate datasets containing between 700-900 variables on patients with myocardial infarction, congestive heart failure or stroke, and data is included on demographics, diagnoses, clinical management, and outcomes. A total of 2191 Puerto Rican patient records were included in this study, 41.5% of which used EMS services to access hospital care. Patients were separated into 2 groups: those who arrived by ambulance/helicopter versus those who arrived by any other means of transport. We adjusted for age, current smoker status, characteristic chest symptoms, hypertension, and CHF based on significant association with both the mode of transport and in-hospital mortality. In addition, there were several characteristics that were only found to have a significant association with either the independent and dependent variable but which were included in our adjusted model based on the literature review. These characteristics were gender, obesity, left-side pain symptoms, and previous diagnoses of diabetes and CHD.

**Results:** The in-hospital mortality of patients was significantly associated with the use of EMS services. We saw a very similar increased risk of in-hospital mortality in both the unadjusted (OR=2.6 (CI 1.8-3.7), p<0.001) and adjusted models (OR=2.6 (CI 1.6-4.0), p<0.001). Characteristics that were significantly associated with in-hospital mortality included older age, female gender, and previous diagnosis of CHF. Obesity, characteristic chest symptoms, and left-sided pain were associated with a decreased risk of mortality.

**Conclusions-Implications:** Our results suggest that more research is needed to elucidate what other possible confounders may be affecting a patient's decision to call for EMS and important factors affecting the in-hospital mortality of Hispanic AMI patients.

**P10.**

**In-hospital mortality difference between academic and non-academic hospitals in Hispanics with acute myocardial infarction**

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**Introduction and Objective:** In-hospital mortality data in patients hospitalized with acute myocardial infarction (AMI) in academic vs. non-academic medical centers is despair. There is extremely limited information in minority populations, especially Hispanics, describing the clinical epidemiology of acute coronary disease. The purpose of this study is to assess the difference on AMI in-hospital mortality between academic and non-academic hospitals in a mostly Hispanic population.

**Methods:** We conducted a secondary analysis of the Puerto Rico Surveillance Study, which has a non-concurrent cohort design. Trained study personnel reviewed the medical records of patients hospitalized with possible AMI in 2007, 2009, and 2011 in twenty medical centers of Puerto Rico, and independently validated each case according to the World Health Organization criteria. Hospitals holding academic affiliations with any of the four medical schools located in Puerto Rico were defined as academic. Age, gender, presence of risk factors, and delay time from onset of symptoms to admission (<60 minutes; 60-240 minutes; and >240 minutes) were included in a multivariate analysis as explanatory variables impacting in-hospital mortality.

**Results:** Among the 3,189 (56% men, mean age 67 years) patients hospitalized with AMI, the overall in-hospital mortality rate was 5.4%, and no statistically significant difference was found on in-hospital mortality likelihood between patients hospitalized in academic vs. non-academic medical centers (OR = 0.9, 95% CI 0.7–1.2), after controlling for potential confounders. In addition, the adjusted model suggests that, as compared to patients with delay time of <60 minutes, patients admitted >240 minutes were 4 times more likely to die (OR=4.0, 95%CI= 1.9-8.3), and those patients admitted between 60 and 240 minutes were 3.8 times more likely to die (OR=3.8, 95%CI= 1.8-8.0).

**Conclusions-Implications:** In-hospital mortality rates of Puerto Rican patients hospitalized with validated AMI do not show a statistically significant difference between academic or non-academic hospitals. Increased delay time upsurge in-hospital mortality.

**P11.**

**Diffuse Dermal Angiomatosis: A Case Report and Review of the Literature**

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**Introduction and Objective:** Diffuse dermal angiomatosis (DDA) is a rare acquired cutaneous, reactive, vascular disorder.<sup>1</sup> DDA is benign and is classified in the group of cutaneous reactive angiomatoses (CRA).<sup>2</sup> CRA disorders are benign vascular disorders marked by intravascular and extravascular hyperplasia of endothelial cells that may or may not include pericytes.<sup>2</sup> DDA was originally described as a variant of cutaneous reactive angioendotheliomatosis (CREA), which is characterized by hyperplasia of endothelial dermal cells and intravascular proliferation.<sup>3</sup> Unlike CREA, DDA primarily affects the reticular dermis with minimal intravascular involvement.<sup>3</sup> DDA has more recently been identified as a distinct disorder on the spectrum of CRA rather than as a variant of CREA.<sup>2</sup> Vascular proliferation in DDA is hypothesized to stem from ischemia or inflammation.<sup>4</sup> Peripheral vascular atherosclerosis has been associated with DDA.<sup>5</sup> The epidemiology of DDA is not well known due to the rarity of the disease, with only 30 cases reported on PubMed. However, of those 30 cases, only adults were affected. The majority of reported cases were middle-aged females. This article will focus on DDA and review the literature of previous case reports.

**Case Presentation:** A 43-year-old Haitian male presented to the clinic for a lesion on his left buttock. The lesion developed over a 6 year period. Initially he had presented to another dermatology clinic and a biopsy was performed which revealed a diagnosis of hemangioma. The patient now presented to our clinic as the lesion had been enlarging over the last several months. Upon examination, the patient had a large indurated hyperpigmented plaque covering his left buttock. Upon review of systems, the patient would describe occasional burning in the area throughout the year.

**Conclusions-Implications:** DDA is associated with medical conditions predisposing an individual to ischemia. Although rare, DDA can present as painful and visibly disturbing lesions that can affect the daily lives of afflicted patients. For all DDA patients, strict control of comorbidities especially smoking cessation should be incorporated into the treatment plan. When DDA affects the breast, it appears that isotretinoin provides the best relief. Otherwise, treatment of the underlying cause, revascularization, or steroids seem to be the best treatment options at this time.

## P12.

### A Case of Twenty Nail Dystrophy: A Review of Treatment Options

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**Introduction and Objective:** Twenty nail dystrophy (TND) originally described dystrophy occurring in all twenty nails.<sup>1</sup> However, since all twenty nails are not always affected, the term trachyonychia has been used.<sup>2</sup> TND is an abnormality of the proximal matrix that consists of a homogenous roughness that creates a sandpaper-like appearance.<sup>3</sup> TND presents as nail dystrophy with longitudinal ridging and striations which cause the nails to have a rough or broken appearance. Numerous superficial pits on nail surfaces leave the nails with a shiny appearance.<sup>2</sup> Over time, the nails generally evolve into a muddy white-grayish discoloration.<sup>4</sup> Spontaneous resolution generally occurs within 5-6 years. Many patients find this too long, as this nail disorder is disfiguring.<sup>8,9</sup> There is no well-established gold standard treatment of this condition to date. We present a case of idiopathic TND and provide an updated review of the literature and the various treatments that have been utilized.

**Case Presentation:** A 34-year-old Filipino female presents to the clinic with nail disease in all twenty of her nails, starting with the thumb and progressing one by one about two years before our first encounter. She had seen previous dermatologists who stated fungal cultures were negative and was empirically treated with oral antifungal medications for months with no improvement. Her physical exam revealed thickened dystrophic nails with pitting, longitudinal ridging, and onycholysis. All twenty nails were involved and no associations were seen.

**Conclusions-Implications:** TND is a disease that can present independently or associated with other conditions. Nail matrix biopsies are not recommended as they risk leaving the patient with permanent nail damage and the diagnosis can be made on a clinical basis. No particular treatment has been universally accepted. Great response has been seen when TND was treated with griseofulvin injections, PUVA, systemic steroids, oral retinoids, cyclosporine A, and nail plate dressings.<sup>7</sup> TND is a self-limiting disease and thus should be treated only if necessary. The patient's quality of life may be detrimentally affected, or they simply do not want to wait 5-6 years with disfigurement. The aforementioned treatments would significantly shorten the duration of the disease.

## P13.

### Cogan's Syndrome with Cutaneous Findings: A Case Report and Review of Dermatologic Manifestations

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**Introduction and Objective:** CS is a rare vasculitis whose hallmark features are non-syphilitic interstitial keratitis and audiovestibular symptoms similar to Meniere's syndrome including hearing loss, tinnitus, and vertigo.<sup>1</sup> Atypical CS is a variant from typical CS wherein patients present with ocular and audiovestibular symptoms other than the interstitial keratitis and Meniere's type symptoms characteristic of the typical variant.<sup>5</sup> The pathophysiology of CS is believed to be autoimmune in nature, supported by responsiveness to corticosteroids.<sup>3</sup> Autoantibodies to the inner ear, including both anti-neutrophilic cytoplasmic antibodies (ANCA) and anti-endothelial antibodies have been found.<sup>4,5,6,7</sup> CS has been described in mostly Caucasians, with no reported sex predisposition.<sup>8,9</sup> Both variants of CS generally occur between the second and fourth decades of life.<sup>1,3</sup> Disease course is often chronic and slowly progressive following an initial flare.<sup>1</sup>

**Case Presentation:** A 47-year-old Trinidadian male presenting a 2-month history of progressive visual acuity and bilateral hearing loss, as well as headache and a rash that developed over 6 days on the dorsum of his hands bilaterally. The patient reported similar symptoms initially began one year prior, during which time he presented to and was discharged from the emergency room without intervention. The patient reports that the rash began as a single papule on the left lateral hand, enlarged and then eventually ulcerated to become what he described as looking like a "cigarette burn." Review of systems was positive for pruritus and vertigo. Physical examination revealed light brown reticulated hyperpigmentation on bilateral lower extremities, with splinter hemorrhages on the right hallus and petechiae on the bilateral toes. Ocular examination revealed bilateral inferior conjunctival erythema.

**Conclusions-Implications:** Cutaneous manifestations are rare in CS and present along a spectrum from non-specific skin rashes and urticarial vasculitis to palpable purpura and pyoderma gangrenosum. These coexisting conditions can delay diagnosis, which can profoundly affect the patient outcome particularly in reference to permanent sensorineural hearing loss. Irreversible loss of visual acuity can also result from delayed diagnosis and subsequent delayed treatment. Although the least likely of systemic manifestations, dermatologic findings are often the impetus for the patient to seek healthcare, highlighting the importance of recognizing these presentations of CS.



**P14.**

**Keloidal Atypical Fibroxanthoma: Cases and Review of the Literature**

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**Introduction and Objective:** Atypical fibroxanthoma (AFX) is an asymptomatic low grade sarcoma.<sup>1</sup> AFX is a pleomorphic cutaneous tumor with a fairly good prognosis. However, there have been reports of metastases, thus warranting proper diagnosis. Keloidal atypical fibroxanthoma (KAFX) is a new variant of AFX.<sup>2</sup> KAFX consists of thick bands of hyalinized keloidal collagen and is often misdiagnosed.<sup>1,3</sup> KAFX looks clinically and histologically similar to many different pathologies, especially tumors with spindle cell morphology. KAFX is most commonly seen on the head and neck of actinically damaged skin among the elderly population.<sup>4</sup>

**Case Presentation:** Case 1 - We present a 75 year old Caucasian male with a 1.3 cm pink to brown dome shaped nodule on the helix of the left ear. On physical exam, no keloids were found on the remainder of the body. A shave biopsy was performed, which demonstrated a cytologically malignant spindle cell neoplasm diffusely replacing the dermis and involving the biopsy margins. The spindle cells revealed enlarged and hyperchromatic nuclei with prominent nucleoli and irregular nuclear contours arranged in vaguely intersecting fascicles which effaced the dermal epidermal junction. A scant chronic inflammatory cell infiltrate was present which was admixed with the tumor cells. Scattered multinucleated bizarre tumor cells in addition to scattered atypical mitotic figures were noted. A sclerotic background with hyalinized keloidal collagen bundles were admixed with the proliferation of spindle cells.

Case 2- A 69 year old male who presented with an atypical lesion on his right ear. On physical exam, no keloids were found on the remainder of the body. A shave biopsy also demonstrated a cytologically malignant spindle cell neoplasm with diffuse replacement by malignant spindle cells. The spindle cells resembled the histology of case 1.

**Conclusions-Implications:** KAFX may be confused with benign and malignant lesions which exhibit keloidal collagen. Our cases represent an underrecognized variant of AFX which may be misdiagnosed. These cases emphasize the importance of diagnosing KAFX and differentiating it from other malignant and benign lesions with keloidal collagen.

**P15.**

**Acute Liver Failure following Minor Outpatient Surgery: A Case Report**

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**Introduction and Objective:** Hepatotoxicity associated with inhalation anesthetics is a known rare occurrence. Sevoflurane, one of the newest generation agents has a more ideal safety profile due to its lack of airway irritation, rapid onset of action and quick elimination. However, based on several case reports, sevoflurane has been associated with acute liver toxicity following surgery. Literature review reveals other reports demonstrating an association between inhaled anesthetics and acute liver damage.

**Case Presentation:** A 90 year old Caucasian man with chronic renal insufficiency but otherwise relatively healthy and active suffered a displaced nasal fracture from a fall. There was no syncope or loss of consciousness. After primary care in the emergency room he was referred to plastic surgery for treatment of his nasal fracture. Visible deformity and airway compromise was noted for which early closed reduction was recommended. Following medical clearance through his internist, he underwent a 30 minute procedure under general anesthesia in an outpatient surgery center. sevoflurane was used along with propofol and nitrous oxide. Surgery and recovery were uneventful. He was seen in follow up at 1 day, then 5 days doing well, no problems. 10 days post op he presented to the emergency room with constipation and was noted to be jaundiced. Workup for painless jaundice ensued, no biliary obstruction found, bilirubin of 12 and markedly elevated transaminases, he rapidly developed respiratory failure and worsening of his chronic renal failure. Unfortunately, the patient continued to deteriorate and passed away 26 days after surgery.

**Conclusion-Implications:** Although a rare event, acute liver failure from exposure to inhalation anesthetics has been reported. With our patient, likely his advanced age including chronic renal failure contributed to his development of liver failure which then precipitated multiple system failure and a rapid demise. This case report reminds us that even the most minor of procedures can have major consequences and of this fact, we must always remain cognizant as we balance risks and benefits in our daily practices.

**P16.**

**The association between source of healthcare and cancer screenings among Haitian residents in North Miami**

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**Introduction and Objective:** Cancer screening tests are the most useful preventative tools for cancer, yet they remain underutilized

in the US, especially among Haitian immigrants who have some of the lowest cancer screening rates in the country. However, there is little research on whether having a particular source of continuous care affects the utilization of cancer screenings. This study aims to address this gap, focusing on the Haitian population, in North Miami-Dade County.

**Methods:** The study was a secondary data analysis of a 2009 survey of Miami-Dade County's Little Haiti area. We investigated the utilization of PAP smears for cervical cancer, mammograms for breast cancer, and colonoscopy, sigmoidoscopy and fecal occult blood test for colon cancer per USPSTF guidelines. A univariate and multivariate analysis was conducted with SPSS.

**Results:** For colon cancer screening, there were 305 eligible households. Those without continuous care or insurance were less likely to be compliant (OR= 0.3, p=0.004, OR=0.4, p<0.001). However, upon adjusting neither was found to be significant. Regarding mammograms, there were 237 households. Those who reported not having insurance and without continuous care were less likely to be compliant (OR=0.3, p=0.002; OR= 0.2, p<.001). Both remained significant (OR=0.3, p=.021 and OR=0.4, p=.039, respectively) after adjusting. In the PAP smear arm, there were 348 households. Having continuous care and insurance were again associated with compliance (OR= 0.3, p=0.002, OR=0.2, p<0.001). Upon adjustment, only having insurance was found to be statistically significant (OR=0.3, p=.001)

**Conclusions-Implications:** Across each screening method there seems to be a significant association between compliance and a lack of continuous care and a lack of insurance. Additionally, there is a significant association between continuous care and mammogram compliance. Because this was a secondary data analysis, there were limitations in limited power and possible recall bias. This prompts the need for further exploration of the role of these factors, along with income level and provider satisfaction, in contributing to cancer screening utilization among the Haitian Population.

## P17.

### The Effect of Insurance Status and Ethnicity on Delays in Seeking Medical Care in North Miami

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**Introduction and Objective:** Health care for the uninsured has been a topic of much deliberation. The uninsured have greater difficulty accessing medical care and tend to have worse health outcomes than their insured counterparts. These disparities are even more penetrating among racial and ethnic minorities, which comprise a large portion of the population of Miami-Dade. For this purpose, we analyzed the association between insurance status and delays in seeking medical treatment among minority populations in Northeast Miami.

**Methods:** This cross-sectional study utilized information gained from the Little Haiti Community Benchmark Survey administered during October 2009 and April 2010, which included 948 households selected at random within the northeast section of Miami-Dade County. Those households which did not seek any form of medical care within 12 months of the survey were excluded from the analysis due to the lack of the variable of interest. Odds ratios were determined through bivariate and multivariate analysis in order to determine the likelihood that the lack of insurance among different ethnic groups in Northeast Miami-Dade was associated with the delay in seeking medical care among household members.

**Results:** 823 households were included in this study. The minority population of North Miami-Dade represented in our study was comprised of 27% African Americans, 21% Hispanics and respondents who self-identified as Haitian or Other (44%), with only a small percentage identifying as non-Hispanic White. Of the participants, more than half primarily spoke a language other than English and 15% had achieved an education level of less than high school. A substantial percentage of respondents were unemployed at the time of the survey (22%) and 53% were well below the federal poverty limit with a reported income of less than \$10,000 per year. Although a direct association between ethnicity and delay of care was not found in this study, lack of insurance was independently associated with delaying medical care, with the uninsured found to be 2.8 (95% CI 1.7-4.5) times more likely to delay care than insured individuals.

**Conclusions-Implications:** Disparities in access to health care resulting in delays which may result in poor health outcomes are evident in our study of the households of North Miami-Dade. Our study shows a direct and independent relationship between insurance status and delays in seeking medical care.

## P18.

### Association between prior training in LGBTQ patient care and medical students' comfort addressing health concerns in LGBTQ patients

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**Introduction and Objective:** LGBTQ individuals represent a unique population, with particular health concerns such as higher rates of tobacco, alcohol and drug use, STIs, obesity, and depression and suicide. There is growing interest among medical colleges in teaching LGBTQ health competencies to medical students. However, limited data exists to adequately assess the educational needs of students regarding LGBTQ health, and few curricular interventions have been introduced into pre-clinical or clinical coursework. Our research aimed to investigate if there is an association between formal clinical or curricular training in LGBTQ health competencies and comfort with LGBTQ patients and health concerns among medical students at the Herbert Wertheim College of Medicine.

**Methods:** We analyzed data collected through a cross-sectional,

internet-based survey from 222 HWCOC medical students, collected in fall 2014. After recoding the survey responses to the independent variables from a Likert Scale to binary response, we used Chi-square analysis to assess the relationship between the independent and dependent variables. To adjust for possible confounders, we used logistic regression.

**Results:** Exposure to formal training was not found to significantly impact comfort level managing LGBTQ patients (adjusted OR 0.9, 95% CI 0.5-1.9, p-value 0.839). We found that students who had higher frequency of LGBTQ interactions in daily life had 4.3 times greater odds of feeling comfortable relative to those who only rarely or sometimes interacted with LGBTQ persons in daily life (adjusted OR 4.3, 95% CI 2.1-8.7, p-value <0.001). Hispanic students had significantly higher odds of feeling comfortable compared to non-Hispanic students (adjusted OR 2.4, 95% CI 1.1-5.3, p-value 0.026).

**Conclusions-Implications:** We were unable to reject our null hypothesis, finding previous LGBTQ training experiences not to be significantly associated with higher levels of comfort addressing these patients. Higher frequency of exposure and Hispanic ethnicity were associated with greater comfort levels. Greater efforts need to be identify the reasons for lack of comfort and steps taken to formalize and improve the training for medical students in managing this patient population.

**P19.**

**Evaluating the Need for Implementation of a Peer Mentoring Network at Florida International University Herbert Wertheim College of Medicine and its Success after One Year.**

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**Introduction and Objective:** In medical school, high work demands, loss of time for leisure activities, tensions in personal relationships, and precocious confrontation of death contribute to burnout, depression, substance abuse, suicide, and professional misconduct. Mentoring programs and identification of peer role models improve mental well-being and combat adverse consequences. In new medical schools there are fewer peers and resources to provide support and guidance to new students. The Peer Mentoring Network (PMN) was implemented at COM-FIU in August 2013. The objective of our study is to evaluate the student’s perceptions on the need for the PMN and evaluate its success at the end of one year follow-up.

**Methods:** We performed a concurrent cohort study with 120 2nd year (M2) and 120 1st year (M1) students. Outcomes for first aim were students’ perception of the need for an upperclassman as a peer mentor (key aspect of the PMN) and the identification of positive outcomes were perceived as a potential result of the PMN. Information was collected using the PMN Assessment anonymous survey at baseline. For the second aim, 80 students (M1 and M2) who participated in the PMN program took a follow-up survey at

the end of the PMN first year. The outcomes were whether the upperclassman was considered a valuable resource and whether the student considered that the program fulfilled positive outcomes.

**Results:** The response rate was 50%. At baseline, over 90% of students wanted a structured program to facilitate relationships with older students and believed a PMN would encourage a close-knit community. About 67% agreed that an M2 as a “peer mentor” would help relieve stress, 69% agreed that M2 students help M1s find a good study method, and 89% that M2 helps adjust to medical school life. For the second aim, 69 participants were included (21 M1s, 48 M2s). 87% said their mentor was accessible, 91% was approachable, 86% was supportive and encouraging, 75% believed mentoring another student would help them succeed, 84% would like the PMN to continue, and 63% thought the PMN fulfilled the need of interacting with upperclassmen. Only 5% of participants did not think the PMN was beneficial.

**Conclusions-Implications:** M1s and M2s believed the PMN would be a beneficial addition to HWCOC. The PMN was perceived to positively impact their transition into medical school. The follow up survey demonstrated that the program was perceived favorably by most participants, who agreed that the program was beneficial.

**P20.**

**The role of pre-clinical and clinical training in LGBT and sexual health history-taking on medical students’ comfort with gender and sexuality health concerns**

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**Introduction and Objective:** Lesbian, gay, bisexual, and transgender (LGBT) individuals represent a unique population in the clinical environment, whose health needs require adequately trained and competent health professionals. The training of competent physicians relies heavily on comprehensive medical education, in both pre-clinical and the clerkship years, and there is growing interest among medical colleges in teaching LGBT health competencies to medical students. However, limited data exists to assess the educational needs of students regarding LGBT health, and few curricular interventions have been introduced into pre-clinical or clinical coursework. The objective of our study aims to identify if formal pre-clinical or clinical training in gender and sexuality, and specifically LGBT health competencies, impacts the comfort level of medical students at the Herbert Wertheim College of Medicine with regards to LGBT patients and broader gender and sexuality health concerns.

**Methods:** 222 (52% response rate) responses from FIU HWCOC medical students originally collected through a cross-sectional internet-based baseline needs-assessment survey will be analyzed using bivariate (eg: Chi-square), multivariate (eg: logistic regression), non-parametric (eg: Wilcoxon rank-sum test) and exploratory factor analysis techniques. Results will be analyzed to determine what, if

any, impact pre-clinical, clinical, and/or social exposure to gender and sexuality health concerns or LGBT-specific health concerns have on students' comfort with interacting with LGBT patients and providing gender and sexuality health-specific and appropriate care.

**Conclusions-Implications:** Based on the data analysis, we hope our curriculum will be modified to meet and address the needs of the students with regards to their knowledge and ability to work with and provide care for the LGBT population.

## P21.

### Behind the White Coat Lecture Series

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**Introduction and Objective:** "Behind the White Coat" is designed as a longitudinal lecture series featuring our own FIU HWCOC deans, faculty and staff. The premise of the series is simple – provide a medium for our deans, faculty and staff to speak candidly about the struggles and successes surrounding their journey in medicine. This program not only motivates and benefits our student body, but also provides our faculty with an opportunity to share their journey in a safe and welcoming environment.

**Methods:** Study participants were individuals voluntarily attending one of the installations of the lecture series. Pre/Post lecture surveys were administered to quantify levels of motivation pre/post lecture, likelihood of repeated attendance, and emotions experienced during the session, and assessment of important physician qualities. Emotions include: inspired, motivated, content, empowered, energized. Physician qualities included: reflection, mindfulness, humility, resilience, inner strength. T-test analysis of the aforementioned variables was conducted with pre/post test results.

**Results:** Statistically significant increases in levels of motivation were found in attendees per pre/post lecture survey results. Moreover, statistically significant increases in positive emotional experiences and marked physician qualities were found in attendees per pre/post lecture survey results.

**Conclusion-implications:** This motivational program provides medical students with an opportunity to see their professors and role models as human beings who endured the same kinds of opportunities and challenges that they themselves face. This medium also offers students an opportunity to connect with faculty in a personal way. It serves to provide the students with an opportunity to refocus and step back from the day to day pressures and deadlines of medical school. Most importantly, it reminds us all of the importance of trusting the process, staying motivated, and continuing to search for our calling. Data supports that this medium serves as an effective and efficient tool to motivate medical students.

## P22.

### Determining Associations between Adverse Childhood Experiences and Bullying Perpetration in U.S. Pediatric Population: A cross-sectional study

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**Introduction and objectives:** Bullying has become a national concern. Adverse childhood experiences can weaken a child's emotional health and overall well-being and could be associated with that child being a bully. The objective of this study was to determine if there is an association between adverse childhood events and being a bully. We hypothesize that there will be an association because adverse experiences can be emotionally stressful, resulting in children externalizing their behavior in the form of bullying.

**Methods:** Our research design is a cross-sectional study using data from the National Survey of Children's Health (NSCH) survey conducted between February 2011 and June 2012. Our sample was restricted to children ages 6–17 years. Study participants were further excluded if they refused to answer the questions regarding the variables being investigated, if they did not know the answer, if their answers were missing in error, or if they did not complete the interview. The outcome of bullying perpetration was measured by the survey respondent's assessment of how often their child bullies. The independent variables include whether the child lived with anyone who had a problem with alcohol or drugs, with a parent or guardian who died, or with a parent or guardian who served time in jail or prison after their child was born. The associations were measured using odds ratios. A logistic regression model was used to aid in controlling for bias and confounding variables.

**Results:** The final sample size after exclusion was 65580 children and of this group, 11% were reported to bully. According to our findings, children living with a parent or guardian who served time in jail had an increased likelihood of being a bully (OR 2.3; 95% CI 2.0-2.7). No significant association was found between living with a parent or guardian who has died (OR 1.2; 95% CI 1.0-1.5) or the child living with anyone with an alcohol or substance abuse problem (OR 1.7; 95% CI 1.5-2.0) and the child being a bully.

**Conclusions-Implications:** A statistically significant association was found between a child who had a parent or guardian go to jail after they were born and with being a bully. While the focus of our study was on risk factors of bully perpetration, subsequent works can elucidate the protective factors associated with having an incarcerated parent to aid future interventions.



**P23.**

**Polyunsaturated Fatty Acid Associations with Serotonin Transporter Binding in Major Depressive Disorder Assessed with [<sup>11</sup>C]DASB PET**

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**Introduction and Objective:** Low serotonin transporter (5-HTT) binding and imbalances in polyunsaturated fatty acids (PUFAs) have been implicated in major depressive disorder (MDD). Using positron emission tomography (PET) with [<sup>11</sup>C]DASB, we studied relationships between 5-HTT binding and plasma PUFA levels in MDD patients and healthy volunteers (HV). Since lower n-3 (omega-3) PUFAs relative to n-6 PUFAs are seen in MDD, we hypothesized that docosahexaenoic acid (DHA, 22:6n-3) would correlate positively and arachidonic acid (AA, 20:4n-6) would correlate negatively with 5-HTT binding, with a more pronounced effect in MDD. Eicosapentaenoic acid (EPA, 20:5n-3) was a control as it occurs in low levels in the brain.

**Methods:** MDD patients (*n*=23) and HV (*n*=8) had fasting blood drawn on the day of [<sup>11</sup>C]DASB PET. Plasma PUFAs were quantified using direct transesterification and gas chromatography. In the MDD group, the binding potential (BP<sub>ND</sub>) of [<sup>11</sup>C]DASB was calculated for 12 brain regions of interest (ROIs) as  $BP_{ND} = V_T - V_{ND} / \sqrt{V_{ND} (V_T - V_{ND})}$  (V<sub>T</sub> = volume of distribution, V<sub>ND</sub> = nonspecific binding in the ROI). Correlations were studied between PUFA levels and BP<sub>ND</sub>, and regression models were employed to study effects of PUFA levels and BP<sub>ND</sub> on Hamilton Depression Rating Scale (HDRS-17) scores. Effects of diagnostic group (MDD vs. HV) were explored by including group as a covariate in linear regression models with BP<sub>ND</sub> as outcome measure, and AA as predictor.

**Results:** In MDD, correlations with 5-HTT binding were negative for all PUFAs in all 12 ROIs. Significant correlations were seen for AA in all ROIs (*p*-values ranging from 0.001 – 0.029 with a trend in hippocampus, *p*=0.098) except orbital cortex (*p*=0.468). BP<sub>ND</sub> predicted depression severity in the amygdala and ventral striatum (*p*=0.02), associations that were strengthened (*p*=0.002 – 0.004) by inclusion of AA but not DHA, EPA, sex, or age in the models. In the full sample, both AA and diagnostic group had significant main effects on BP<sub>ND</sub> in anterior cingulate, temporal cortex, ventral striatum, and caudate, and a trend in dorsolateral prefrontal cortex.

**Conclusions-Implications:** Our hypothesis of differential directionality of n-3 vs. n-6 PUFA correlations with 5-HTT binding was not supported; group effects on correlations between AA and BP<sub>ND</sub> were observed, but must be replicated, given the small size of the HV sample. The most significant results were negative correlations between plasma AA and 5-HTT binding. These AA findings are consistent with a cascade previously observed in 5-HTT-deficient mice.

**P24.**

**Gender Disparities in the Administration of Thrombolytic Therapy in Hispanics with Acute Ischemic Stroke**

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**Introduction and Objective:** Treatment of acute ischemic stroke with tissue plasminogen activator (t-PA) has shown to greatly improve outcomes. However, findings in the published literature have shown that women receive t-PA at a lower rate than men. This study aims to determine if there is a difference in the administration of t-PA in a scarcely studied Hispanic population between Puerto Rican men and women diagnosed with acute ischemic stroke.

**Methods:** We conducted a secondary analysis of the Puerto Rican Cardiovascular Surveillance Study, a prospective non-concurrent study that collected information from medical records of acute ischemic stroke cases in each of the 21 hospitals located across Puerto Rico in 2007, 2009, 2011. Participants diagnosed with hemorrhagic stroke, transit ischemic attacks, and below the age of 18 were excluded. The main independent variable was gender, and the dependent variable was t-PA administration. Other variables included in the analysis were age, body mass index (BMI), marital status, hypertension, hyperlipidemia, diabetes mellitus, smoking status, alcoholism, and atrial fibrillation. We used SPSS software (Version 17) to conduct a descriptive analysis comparing these selected variables and gender as well as t-PA administration. We then implemented bivariate analysis, using Pearson chi-squared testing to compare categorical variables. Next, we used multivariate analysis to adjust for potential confounding variables.

**Results:** Our study analyzed 2118 (51.6%) women and 1989 men diagnosed with acute ischemic stroke. A greater proportion of men received t-PA, when compared to women, 6.6% versus 4.1%. Women had 40% lower odds of receiving t-PA when compared to men (OR=0.6, 95% CI 0.5-0.8). When adjusted for variables including age, BMI, hypertension, smoking status, and alcohol, women continued to have 40% reduced odds of receiving t-PA. (OR=0.6, 95% CI 0.4-0.9). When comparing men and women in this population, women were older and more likely to have hypertension, while men were more overweight/obese, and more likely to smoke and have alcoholism. Over 70% of the population was insured. Over half of the study participants were diabetic, while relatively fewer patients had existing diagnoses of hyperlipidemia and atrial

fibrillation, which are major risk factors for acute ischemic stroke.

**Conclusions-Implications:** Results from this study suggests that Hispanic women hospitalized in Puerto Rico with acute ischemic stroke during the study years have 40% less odds of receiving t-PA, even when adjusted for variables such as age, BMI, hypertension, diabetes, atrial fibrillation, smoking status and alcoholism. This difference, although not yet fully understood, underscores for further investigation of this topic and possibly a revision of current stroke protocols to improve outcomes in Hispanic women.

## P25.

### Alcoholism and In-Hospital Mortality Among Hemorrhagic Stroke Patients in Puerto Rico

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**Introduction and Objective:** Stroke is the fifth cause of death and the leading cause of long-term disability in Puerto Rico. The mortality of hemorrhagic stroke is influenced by many risk factors, one of which may be alcoholism. There is a known biologic link between bleeding and mortality secondary to alcoholism, which may thereby apply to hemorrhagic strokes. Our study sought to determine whether there is an association between alcoholism and in-hospital mortality among hemorrhagic stroke patients in Puerto Rico.

**Methods:** A non-concurrent cohort study was conducted utilizing the Puerto Rico Cardiovascular Surveillance Study (PR CVS SS) database, from the years 2007, 2009 and 2011. Subjects that were admitted to any of the 20 participant hospitals with confirmed (CT or MRI) hemorrhagic strokes were included. In-hospital mortality was compared between subjects with and without alcoholism (as defined in the database). Odds ratios were computed for both crude and adjusted confounders. Confounders assessed included smoking, atrial fibrillation, anticoagulant use, hypertension, diabetes, age and gender.

**Results:** 751 patients were included, of whom 81 (10.8%) were alcoholics. There were 146 (19.4%) in-hospital deaths, 15 (18.5%) in alcoholics, and 131 (19.5%) in non-alcoholics. A statistically significant association between alcoholism and in-hospital mortality was not found (OR 1.07, 95% CI 0.59-1.93,  $p=0.82$ , adjusted OR 3.65, 95% CI 0.76-17.56,  $p=0.107$ ). A statistically significant association between the age group 75-84 and in-hospital mortality was identified (adjusted OR 3.18, 95% CI 1.13-9.00,  $p=0.029$ ).

**Conclusions-Implications:** The adjusted OR of 3.18 suggests a positive association between age group 75-84 and in-patient hemorrhagic stroke mortality. However the small sample size and low power limit the ability to delineate a clear statistical association, thereby warranting further study into this subject matter.

## P26.

### Mechanical fatigue testing of an implantable intrafascicular electrode system

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**Introduction and Objective:** We developed an implantable device that uses longitudinal intrafascicular electrodes (LIFEs) to stimulate/record from small groups of fibers in peripheral nerve fascicles in upper-limb amputees. Since the electrodes and leads must maintain functionality when exposed to stresses during routine activities like walking or lifting, mechanical fatigue testing is necessary to assess the long-term reliability before clinical deployment.

**Methods:** Our device consists of a stimulator/recorder unit with a 15-wire lead assembly. A primary sheathed bundle (15 coiled wires) leads to a trifurcation to form 3 sheathed bundles (5 coiled wires/bundle), each of which further separates into individual wires (LIFEs). Each LIFE is a 23 $\mu$ m insulated Pt/Ir wire with a 1mm long active zone. Using a needle, each LIFE is sewn longitudinally into the fascicle and sutured to the nerve at the entry and exit points. When implanted, high stresses may occur on the primary bundle near the trifurcation, at the point where the individual wires exit the sheath, or at the nerve suture points. Mechanical fatigue at these points could trigger device failure such as breakage of electrode wires or cracks in the sheath or insulation. Equipment and procedures were developed to expose the implantable device to stress conditions that mimic the anticipated stress profiles in the upper arm. One setup imposes longitudinal strain on a compliant structure that models the nerve; LIFEs were sewn into the model nerve and anchored using sutures to mimic surgical installation. The second setup imposes angular stresses on the implant by repeatedly bending it about its vertical axis at the trifurcation junction. Electrode wire continuity was measured periodically for both tests and each section was examined using a high power microscope. Two test paradigms were used: a low repetition/high amplitude paradigm to mimic strenuous activities such as lifting (1.2 million cycles; based on OSHA guidelines) and a high repetition/low amplitude paradigm to mimic activities such as walking (7.3 million cycles based on a 2-year design life at 10,000 steps/day). Linear strain amplitudes of 5% (low) and 15% (high) and angular strain amplitudes of  $\pm 15^\circ$  (low) and  $\pm 45^\circ$  (high) were chosen for the respective tests.

**Results:** All electrode wires tested retained electrical continuity and passed visual inspection after the linear strain test was completed. Similar results were obtained for all trifurcation junction specimens.

**Conclusions-Implications:** These results suggest that the set of leads and fine wires as well as the trifurcation junction in our implant can maintain functionality after implantation in the upper arm.

**P27.**

**The association between t-PA administration and in-hospital mortality following acute ischemic stroke in Puerto Rican patients**

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**Introduction and Objective:** Despite being the standard of care, thrombolytic therapy with tissue-plasminogen activator (t-PA) is currently administered only to 5% of acute ischemic stroke (AIS) patients in the United States. Published scientific information is scarce regarding both the use of t-PA for AIS in Hispanic patients, and its impact on short-term mortality. This study aims to investigate the rate of t-PA administration, to compare the risk of in-hospital mortality and its correlates among AIS patients in Puerto Rico according to treatment with t-PA.

**Methods:** We performed secondary analysis of data from patients with AIS admitted to acute care facilities throughout Puerto Rico while participating in the Puerto Rico Cardiovascular Disease Surveillance System in study years 2007, 2009, and 2011. Multivariate logistic regression was used to determine the independent association between treatment with t-PA within 4.5 hours of symptom onset and in-hospital mortality.

**Results:** Of the 1950 study patients hospitalized with AIS, 5% received t-PA treatment. After adjustments for demographic and clinical confounders, patients receiving t-PA had similar odds for in-hospital mortality compared to patients not receiving t-PA (OR=2.49, 95% CI=0.81-7.66). Patients receiving concomitant anticoagulation were independently associated with lower in-hospital mortality (OR=0.42, 95% CI= 0.20-0.88). Patients aged >80 years (OR=2.03, 95% CI=1.13-3.68), those who measured obese (OR=1.88, 95% CI=1.01-3.49), and those who arrived by ambulance (OR=3.61, 95% CI=1.95-6.68) were independently associated with higher in-hospital mortality.

**Conclusions-Implications:** Among patients hospitalized in Puerto Rico with acute ischemic stroke, no evidence of an association between t-PA treatment and in-hospital mortality was found.

**P28.**

**The Role of Autophagy in HIV-1 Tat Induced Neurodegeneration Using Beclin-1 Heterozygous Mouse Behavior Model**

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**Introduction and Objective:** Evidence suggests that HIV-1 induces neurological impairments leading to the development of HIV-associated neurocognitive disorders (HAND). Moreover, intravenous opiate drug users account for 30% of AIDS cases in the USA who frequently show acceleration to AIDS dementia. Inhibition of neuronal autophagy has previously been linked to neurodegeneration seen in the HIV-1-infected brain with representative neuronal loss. Specifically, the striatum brain region which is responsible for motor coordination is disrupted by HIV and opioids. In this study, 3-6 month old Becn1-deficient mice which are heterozygous for the Becn1 allele and show reduced basal autophagy were exposed to both HIV-Tat and morphine to assess alterations in behaviors along with correlated immunohistochemistry associated with neuroAIDS brain pathology.

**Methods:** Intrastratial injections of HIV-Tat protein followed by insertion of subscapular time-release morphine pellets were performed in vivo using the Becn1-deficient mice and C57BL/6J wildtype controls. Sterile saline and placebo pellets were used as experimental controls. Motor function, strength, and coordination was gauged using tests such as grip strength, horizontal bars, and rotarod.

**Results:** No significant differences were seen in the saline/placebo treated wildtype C57BL/6J and Becn1-deficient mice; however, significant deficits were noted between the strains with intrastratial exposure to Tat as compared to the saline injected mice. The performance shown in the behavioral experiments was additionally impaired when intrastratial Tat injection was combined with morphine pellet treatment.

**Conclusions-Implications:** The findings suggest that autophagy is cytoprotective and lack of this pathway exacerbates Tat-induced pathology, with the interactive effects of morphine potentially converging at this pathway.

**P29.**

**Mode of transportation to hospital and in-hospital mortality in patients presenting with acute stroke in Puerto Rico**

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**Introduction and Objective:** Stroke has been recognized as the fourth most common cause of death in the United States and a major cause of death worldwide. Research efforts have recognized the benefits of shortening the time to intervention and have addressed hospital protocols for acute stroke patients. However, few studies have looked at outcomes secondary to mode of transportation to the hospital. The objective of our study is to determine if there is an association between mode of transportation and mortality in acute stroke patients in Puerto Rico.

**Methods:** We performed a secondary analysis of data collected as a retrospective cohort as part of the Puerto Rican Cardiovascular

Disease Surveillance System. The study population consisted of adult Hispanic of all ages residing in Puerto Rico, consecutively hospitalized for suspected acute stroke at all medical centers with acute care facilities (N=21) during 2007, 2009 and 2011. We excluded patients with TIA, subarachnoid hemorrhage, and intracranial hematoma, as well as patients transferred from other hospitals. The independent variable is the mode of transportation to a treatment facility (private or ambulance). The dependent variable was all-cause in-hospital mortality. Logistic regression models were used to test the independent associations between mode of transport and in-hospital mortality. SPSS was used for analysis. P-value<0.05 for a two-tailed test was considered significant.

**Results:** A total of 3,427 acute stroke patients were included in this analysis, of which only 37.8% (N=1296) were transported to the hospital via EMS. Then unadjusted odds of in-hospital mortality for patients who arrived by EMS compared to private transport was 2.9; 95% Confidence interval (CI): 2.3 - 3.7; P<0.001. After adjustment for demographic characteristics, smoking and alcohol use, co-morbidities, and use of t-PA, the odds ratio (OR) for arriving by EMS was 2.7; 95% CI: 2.0 - 3.6; P<0.001. Analysis of a subset of 367 patients with data on NIHSS scale (to assess stroke severity at admission) suggested that higher stroke severity was associated with EMS transportation. Inclusion of stroke severity in the adjustments yielded non-significant associations between EMS transport and in-hospital mortality (OR=1.4, 95% CI=0.2 - 7.8).

**Conclusions-Implications:** We found evidence for higher in-hospital mortality in patients arriving by EMS for health care, but results are likely due to variations in stroke severity.

## P30.

### A comparative analysis of stroke in Haitian and non-Haitian populations of South Florida

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**Introduction and objective:** The USA contains the second largest Haitian population outside the country of Haiti; however, there is only one publication within PubMed concerning the management of Haitian stroke patients, their outcomes, and the comorbidities surrounding their cerebrovascular accidents. Our objective was to compare the demographics, comorbidities, management and outcomes in the Haitian and non-Haitian patients with stroke treated at Baptist Hospital in Miami.

**Methods:** We conducted a non-concurrent cohort study utilizing the Baptist Hospital "Get with the Guidelines Stroke Database." Inclusion criteria were defined as Haitian and non-Haitian patients with a diagnosis of stroke, treated between the years 2008-2014. Two-tailed t test analysis was performed on patient age, BMI, cholesterol, triglyceride, HDL, LDL, Hgb A1c levels, systolic and diastolic blood pressures, and time between symptom onset and

hospital arrive. Two-way contingency table analysis was used to compare rates of comorbidities (atrial fibrillation, hypertension, coronary artery disease, diabetes mellitus, previous stroke, previous transient ischemic attack, and smoking status), insurance status (Medicare or private insurance versus Medicaid or self-pay), management (rates of tissue plasminogen activator), and patients' ability to ambulate on discharge.

**Results:** We identified 56 Haitian and 112 non-Haitian patients. Haitian patients had higher diastolic blood pressure on admission, compared to control patients (89.5 vs 80.8 mmHg; p = 0.03). The prevalence of atrial fibrillation was lower in Haitian patients, versus controls (3.6% vs 17.9%; p = 0.019). Rates of Medicare or private insurance were lower in Haitian versus control patients (57% vs 88%; p=0.00001).

**Conclusions-Implications:** We found a statistically significant difference in terms of Medicare or private insurance carriers between the two populations. The other significant differences we found were that Haitian patients had higher diastolic pressures and a lower incidence of atrial fibrillation. However; the preliminary results still represent a fraction of our actual estimated Haitian patients. We expect to find more statistically significant differences between the two patient populations as we accumulate more patients from our database. We project the database will include an estimated 150 Haitian patients and 300 controls upon completion, which will further increase the statistical power of this study.

## P31.

### Withaferin A suppresses Beta amyloid in APP expressing cells: Studies for Alzheimer's disease

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**Introduction and Objective:** Alzheimer's disease (AD) is a highly prevalent neurodegenerative disease affecting ~36 million people globally. It is characterized by memory loss and various progressive neurocognitive dysfunctions. Histopathological trademark of AD are extracellular aggregates of beta amyloid (A $\beta$ ) plaques and intracellular neurofibrillary tangles, made of hyperphosphorylated tau protein in cortical and limbic areas of human brain. The anomalous processing of Amyloid precursor protein (APP) by  $\beta$ -secretase and  $\gamma$ -secretase into A $\beta$ 40 and A $\beta$ 42, leads to aggregation into plaque formation. In search of efficacious therapy against AD, traditional and natural products have come into the picture. Ashwagandha (ASH) is one among them, whose activity is attributed to Withanolides. Withaferin A (WA), one of the Withanolides is a purified steroidal lactone from ASH which has higher activity and is the active moiety of ASH. Our objective is to study the neutralizing effect of purified WA against A $\beta$  which may be of high therapeutic importance.

**Methods:** The SH-APP cells expressing A $\beta$  were treated with



different concentrations of WA and A $\beta$  levels were analyzed by ELISA and APP precursor protein quantified by Western Blot with antibodies against APP. The dose response studies of WA in SH-APP cells were confirmed by doing MTT assay and percent cell viability test.

**Results:** A $\beta$  can induce cytotoxic effects in SH-APP cells (human neuroblastoma cell line stably over-expressing human APP751) compared to parent cells. WA suppresses A $\beta$  in SH-APP cells in a dose dependent fashion without inducing toxicity or lowering the cell viability of the treated cells.

**Conclusions-Implications:** Targeting A $\beta$  plaques with natural products and their purified products may have significant therapeutic values. Further studies using the nanoformulation of WA for their potential in BBB transmigration are currently in progress. Characterizing the nanoformulation and employing it in animal model for doing behavioral studies are our future perspectives.

### P32.

#### **<sup>18</sup>F-FLT Positron Emission Tomography/ Computed Tomography Imaging in Pancreatic Cancer: Determination of Tumor Proliferative Activity and Comparison with Glycolytic Activity as Measured by <sup>18</sup>F-FDG Positron Emission Tomography/Computed Tomography Imaging**

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**Introduction and Objective:** This phase-I imaging study examined the imaging characteristic of 3'-deoxy-3'-(<sup>18</sup>F)-fluorothymidine (<sup>18</sup>F-FLT) positron emission tomography (PET) in patients with pancreatic cancer and comparisons were made with (<sup>18</sup>F)-fluorodeoxyglucose (<sup>18</sup>F-FDG). The ultimate aim was to develop a molecular imaging tool that could better define the biologic characteristics of pancreas cancer, and to identify the patients who could potentially benefit from surgical resection who were deemed inoperable by conventional means of staging.

**Methods:** Six patients with newly diagnosed pancreatic cancer underwent a combined FLT and FDG computed tomography (CT) PET/CT imaging protocol. The FLT PET/CT scan was performed within 1 week of FDG PET/CT imaging. Tumor uptake of a tracer was determined and compared using various techniques; statistical thresholding (z score=2.5), and fixed standardized uptake value (SUV) thresholds of 1.4 and 2.5, and applying a threshold of 40% of maximum SUV (SUVmax) and mean SUV (SUVmean). The correlation of functional tumor volumes (FTV) between <sup>18</sup>F-FDG and <sup>18</sup>F-FLT was assessed using linear regression analysis.

**Results:** It was found that there is a correlation in FTV due to metabolic and proliferation activity when using a threshold of SUV 2.5 for FDG and 1.4 for FLT (r=0.9606, p<0.05), but a better correlation was obtained when using SUV of 2.5 for both tracers (r=0.973, p<0.05). The z score thresholding (z=2.5) method showed lower correlation between the FTVs (r=0.698, p=ns) of FDG and FLT PET.

**Conclusions and Implications:** Different tumor segmentation techniques yielded varying degrees of correlation in FTV between FLT and FDGPET images. FLT imaging may have a different meaning in determining tumor biology and prognosis.

### P33.

#### **Keeping the Family Healthy: Unintended Pregnancy as a Risk Factor for Post-Partum Depression in the United States**

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**Introduction and Objective:** Post-partum depression (PPD) is a form of major depressive disorder (MDD) affecting approximately 13% of women worldwide. According to the Centers for Disease Control and Prevention, 11- 18% of women report frequent symptoms that include feeling disconnected to the infant, having scary or negative thoughts about the infant, feelings of guilt, low energy, difficulty concentrating, and suicidal thoughts. Post-partum depression is associated with higher maternal morbidity and mortality, and ultimately affects the cognitive, behavioral, and emotional development of the child. While many physiological and psychosocial causes have been studied, the etiology of PPD continues to remain unclear. Unintended pregnancies (UP), reaching close to 50% of the pregnancies in the US, have become a major health concern. UP are associated with poorer health outcomes for both mother and child. The objective of this study is that we aim to investigate the association between pregnancy intendedness and post-partum depression.

**Methods:** We analyzed surveillance data from the Centers for Disease Control and Prevention's Pregnancy Risk Assessment Monitoring System (PRAMS) from 2009 to 2011. The PRAMS population-based random sample includes women who have had recent live births. The Chi square test was used to determine bivariate associations. Binary logistic regression was utilized to study potential confounding factors. Co-linearity diagnostics were run to identify any co-linear variables. Data analysis was completed using STATA 13.

**Results:** We found a significant association between pregnancy intendedness and symptoms of postpartum depression. Of the 110,231 women sampled nationwide only 32.3% reported desiring the pregnancy at the time of conception (67.7% UP). The women who were found to have mistimed pregnancies experienced higher rates of symptoms of depression. In the adjusted model women who

desired the pregnancy sooner were 20% more likely to experience symptoms of depression than those who desired pregnancy at the time of conception [OR= 1.2 (95% CI 1.1-1.3)]. Women who desired the pregnancy later were 30% more likely to have symptoms of depression [OR= 1.3 (CI- 1.2- 1.4)] when compared to those who desired the pregnancy at the time of conception. Women who never wanted children were 50% more likely to have symptoms of post-partum depression [OR= 1.5 (CI- 1.3- 1.7)].

**Conclusions-Implications:** This is the first U.S. study to launch a nationwide evaluation of intendedness as a possible risk factor for PPD. Our extensive review of the literature reveals a paucity of studies examining the relationship between pregnancy intendedness and PPD while other factors have been heavily investigated. Early detection of PPD is important; however, there is limited conclusive evidence on the specific risk factors that aid in detection. Among these is pregnancy intendedness, the focus of our study, due to the high prevalence of unintended pregnancies in the U.S. Our study found a significant association between pregnancy intendedness and PPD. These results can be used to improve upon the diagnosis of PPD by highlighting women who meet this criterion. The conclusion of this study that pregnancy intendedness was found to be a significant risk factor for symptoms of depression during the post-partum period. This finding encourages physician evaluation of pregnancy intendedness during the patient's pre- natal and post- partum office visits. It pertains to both the obstetrician and the child's pediatrician whom will be visited frequently in the weeks following birth. In addition, our study supports the current recommendation of the Bright Futures and American Academy of Pediatrics Mental Health Task Force to integrate screening into the well-child care schedule and prenatal visits, aiding in the maximization of intervention and early referral of women at risk for post-partum depression.

## P34.

### Gestational weight gain and preterm delivery according to maternal age.

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**Introduction and Objective:** Introduction and Objective: Gestational weight gain (GWG) is one of the modifiable maternal factors monitored during pregnancy to promote optimal health outcomes for both the mother and her offspring. Evidence has shown that excessive or insufficient weight gain during pregnancy is associated with potential adverse outcomes. Thus, guidelines were issued by the Institute of Medicine (IOM) in 2009 proposing optimal GWG according to maternal pre-pregnancy BMI. Currently, it is unclear what the distribution of GWG is at a population level and whether the association between GWG and adverse pregnancy outcomes is modified by maternal age.

**Methods:** We performed secondary analysis of data on women

participating in PRAMS (2009-2011). We included women with a pre-pregnancy BMI <30 who delivered singletons. The independent variable was adequacy of GWG (adequate, excessive, and insufficient), as defined by the IOM. The dependent variable was preterm delivery (<37 weeks). We assessed effect modification by maternal age using multivariable logistic regression. Stata 14 was used for statistical analysis.

**Results:** A total of 28,043 women were included in our study. Overall 33.0% of mothers gained adequate weight, 21.8% gained insufficient weight and 45.2% gained excessive weight. In the unadjusted analysis, compared to mothers with adequate weight gain, insufficient weight gain was associated with higher odds of preterm birth (OR=1.8, 95% CI=1.5-2.1) and excessive weight gain was associated with lower odds of preterm birth (OR= 0.7, 95% CI=0.6-0.8). Our adjusted analysis accounted for potential confounders (age, race, education, marital status, smoking/drinking, and insurance/WIC use) and showed similar results for insufficient weight gain (OR=1.7, 95% CI=1.4-2.2) and excessive weight gain (OR=0.6, 95% CI=0.5-0.8).

Independent of GWG, a maternal age of 19 years or younger showed an increased risk of preterm labor compared to all other age groups (OR=1.9, 95% CI=1.5-2.4). However, when maternal age was analyzed as an effect modifier for GWG in the outcome of preterm labor, the association was found to be non-significant (OR=1.0, 95% CI=0.9-1.1, p value=0.63).

**Conclusions-Implications:** Our study found evidence that insufficient weight gain is associated with a higher risk of preterm delivery, while excessive weight gain was found to have a protective effect against the outcome. Furthermore, the association between GWG and preterm labor does not appear to be modified by maternal age.

## P35.

### Combined Abdominoplasty and Gynecologic Procedures - Assessment of Operative Complications

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**Introduction and objectives:** Combined surgical procedures are highly sought out by patients and can offer the benefit of cost and time efficiency. Among patients, there is increasing interest in combining cosmetic procedures, such as an abdominoplasty, with medically necessary procedures, such as a hysterectomy. From a surgical standpoint, the perceived benefits of combining procedures include reduced healing time, decreased hospital stay, and reduced risks from anesthesia – from two anesthesia events to one. In addition to patient health, economical savings from one procedure include reduced costs and increased productivity. However, combining procedures increases operative time, which is often associated as a risk factor for post-operative complications. Our objective is to characterize our patients who underwent combined abdominoplasty and gynecologic surgery, describe the post-

operative complications encountered, and to discover whether this combination is technically and logistically feasible.

**Methods:** Charts of the 68 patients who underwent the combined procedure of abdominoplasty and hysterectomy were retrospectively reviewed between June 1995 and December 2015. Patient demographics were evaluated including age, weight, BMI, co-morbidities, and smoking history. Method of surgery was documented and whether additional procedures were performed. We evaluated surgical time, estimated blood loss, transfusion received, operative time, intraoperative complications, wound infections, long term complication, revisions, and post-op weight loss.

**Results:** The mean age of patients was 46 years ( $\pm 8.3$ ), the average weight was 184 lb ( $\pm 58$ ), and the average BMI was 31.9 ( $\pm 9.9$ ) for the case series. Additionally, the average time of surgery was 209 min ( $\pm 69.3$ ), and the average length of hospital stay was 3.8 days ( $\pm 1.8$ ). Overall complication rate was 32.7% including: intraoperative transfusion (4.5%), Fever (9.1%), UTI (1.5%), atelectasis (9.1%), and wound complications (13.6%). There were no deep venous thrombi or pulmonary embolisms reported which are rare but serious complications.

**Conclusions-Implications:** Much controversy revolves around combining two different surgical procedures from two different surgical regions of the body. The benefits of combining these aforementioned procedures include a decreased number of anesthesia inductions and recoveries, and similarly reduced cost and time. The greatest fear of combining these two procedures is the possible increased rate of complication due to increased surgical time. These results suggest that combining the two procedures could be both effective and safe, allowing for the combination of surgical procedures as a viable option for the appropriate patient. The drawbacks of this study include the small sample size, and necessity to statistically compare to a control group, which will be introduced in the future.

### P36.

#### Association between marital status and survival post-melanoma in Florida patients

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**Introduction and Objective:** Florida has the second highest incidence of melanoma in the United States. Previous research suggests the presence of a spouse may considerably affect melanoma detection rates through more frequent examinations, better access to healthcare, and good social support. Whether marital status affects survival in Florida's melanoma patients is yet unknown. The objective of our study is to determine whether there is an association between marital status and survival following melanoma diagnosis in Florida patients.

**Methods:** *Setting:* The study was performed using data from participants of the Florida Cancer Data System (FCDS), the Florida

Health Department surveillance program for selected cancers.

*Participants:* All melanoma patients reported to the FCDS were included for analysis.

*Design:* We used a retrospective cohort design including melanoma patients diagnosed between 2001 and 2009 and with follow-up information available until 2015.

*Independent variable:* Marital status categorized as single, married, divorced, or widowed.

*Main Outcome:* Time from melanoma diagnosis to death, assessed according to the time interval from the date of diagnosis to the time of death or last contact. Patients alive at last contact were censored.

*Analytical plan:* Cox proportional hazard models were used to assess the independent association between marital status and survival.

**Results:** Overall, about 94% of patients were Non-Hispanic White, 59% were males, and the sample had an average age of 62.5 (SD 16.2) years at diagnosis. About 26% of patients had died at the time of last contact. Married patients were significantly more likely to survive than single patients (Hazard ratio (HR)=0.65; 99% Confidence Interval (CI): 0.57-0.74;  $P < 0.001$ ) after adjusting for age, sex, race, ethnicity, geographic location, insurance status, tobacco use, primary site, stage, and histology. Survival for widowed and divorced patients compared to singles were not statistically significant after adjustment for confounders (HR=0.87, 99% CI=0.74 -1.01 and HR=0.89, 99% CI=0.74-1.08, respectively).

**Conclusions-Implications:** Single patients are at a higher risk of death after melanoma diagnosis compared to married patients. Future studies aiming to identify potential mechanisms by which marriage confers survival advantages and to test potential interventions for improving survival in single patients are needed.

### P37.

#### The impact of insurance status on stage of colorectal cancer at diagnosis

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**Introduction and Objective:** In the United states colorectal cancer (CRC) is a common disease with many genetic and environmental risk factors. In recent years advanced surveillance techniques have been developed to increase early stage diagnosis. Factors such as insurance status have been shown to be associated with utilization of preventative resources and could influence timing of diagnosis. Identifying risk factors for late stage diagnoses in Florida residents will provide valuable information so that interventions may be developed to address discrepancies. This study aims to determine if there is an association between insurance status and colorectal (CRC) stage at diagnosis.

**Methods:** This is a retrospective population-based cross sectional study using data obtained from the Florida Cancer Data System (FCDS) from 2010-2014. Our population was composed of 33,726

subjects. A bivariate analysis was used to examine the association of insurance status and each confounding variable with stage at diagnosis. Multivariate logistic regression models were used to calculate adjusted odds ratio and corresponding 95% confidence intervals (CI) to examine the association between insurance status and stage at diagnosis of CRC while controlling for all confounding variables.

**Results:** The unadjusted data shows that uninsured and Medicaid patients are 1.5 (95% CI 1.3-1.7,  $p < 0.001$ ) and 1.6 (95% CI 1.5-1.8,  $p < 0.001$ ) times more likely to have distant disease, respectively, compared to privately insured individuals. These associations remained significant in the adjusted analyses, with uninsured patients being 1.4 times more likely to have distant disease (95% CI 1.3-1.6,  $p < 0.001$ ). In addition, the association remained in the adjusted data for Medicaid (OR 1.6, 95% CI 1.4-1.7,  $p < 0.001$ ). There were no significant associations between Medicare or other government patients with distant disease at diagnosis.

**Conclusions-Implications:** Our data show a relationship between insurance status and distant disease. Both uninsured and Medicaid patients are more likely to present with distant disease compared to privately insured patients. Medicaid and uninsured patients had an equal increase in odds of distant disease, suggesting that this difference cannot be fully attributed to differences in access. Further studies should focus on the differences between uninsured and Medicaid populations and investigate variables that affect utilization in Medicaid patients.

## P38.

### Adjuvant Chemotherapy in the Treatment of Pediatric Cerebellar Cancer

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**Introduction and Objective:** Cerebellar cancers make up 16% of central nervous system tumors, the largest percentage of any region of the brain. The current standard of care for treating children between the age of 3 and 18 diagnosed with cerebellar cancer is surgery with post-surgical chemotherapy and radiation in various chemotherapy-radiation combinations. While chemotherapy is often used in children under the age of three to delay radiation treatments that commonly lead to development sequelae, its benefit in older children is still unclear. This study explores whether adjuvant chemotherapy along with surgery and radiation improves overall survival in children between the ages of 3 and 18 with cerebellar cancer when compared to surgery and radiation without chemotherapy.

**Methods:** This retrospective cohort study analyzed data collected from 1981 to 2014 by the Florida Cancer Data System (FCDS). All patients with a primary cerebellar tumor between the age of 3 and 18 were included. The independent variable was treatment with

surgery, radiation, and adjuvant chemotherapy whereas the control group was treated with surgery and radiation only. The dependent variable was overall survival, defined as the percent of patients still living during a 10-year timespan, assessed based on the interval from primary surgery to death due to any cause. Independent associations between adjuvant chemotherapy and survival were assessed through Cox proportional hazard models. Potential confounders assessed included age, sex, race, insurance status, decade of diagnosis, histological subtype, stage, and extent of surgical resection. Only the latter four were statistically significant and included in the adjusted hazard ratio.

**Results:** The sample included 231 patients (64% male) with a mean age of 8.8 years. The unadjusted hazard ratio demonstrated that patients receiving chemotherapy were more likely to die compared to patients not receiving chemotherapy (HR=1.37, 95% CI=0.56, 3.38,  $p=0.49$ ). The adjusted hazard ratio also demonstrated that patients receiving chemotherapy were more likely to die compared to patients not receiving chemotherapy (HR=1.52, 95% CI=0.45, 5.17,  $p=0.50$ ), however this was not statistically significant.

**Conclusions-Implications:** The findings suggest that adjuvant chemotherapy with conventional surgery and radiation had no statistically significant improvement on overall survival when compared to treatment with surgery and radiation alone. Repeating this analysis using a national database and limiting it to patients diagnosed with medulloblastoma, the most common cerebellar cancer, would improve the sample size and clinical application of this study.

## P39.

### Racial and Ethnic Disparities in Pancreatic Adenocarcinoma

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**Introduction and Objective:** Pancreatic cancer is a malignancy with aggressive course that is predominantly seen in men and at advanced age. Factors including race and cultural background can influence the survival of pancreatic cancer, as Blacks have been shown to have decreased survival with respect to Whites throughout the literature. Our study analyzes the Florida cancer population, previously unrepresented in the literature. Our aims were to analyze whether race and ethnicity are independent determinants of survival in patients with pancreatic cancer. We hypothesized that Black race is associated with decreased survival when compared to Whites.

**Methods:** A retrospective cross-sectional observational study was performed utilizing all patients diagnosed with pancreatic adenocarcinoma between 1983 and 2013 in the Florida Cancer Data System (FCDS). Data included in the FCDS included any patient with a cancer case seen within any licensed Florida health facility. A total of 3,125,433 cancer patients were identified in the FCDS. Of those, 71,680 were diagnosed with pancreatic cancer. After screening for



histological confirmation of pancreatic adenocarcinoma, 36,785 patients remained. Twenty-nine confirmed duplicated cases were then excluded, resulting in a final sample of 36,756 patients. Patient demographics and associations between race and patient characteristics were compared by chi square analysis for categorical variables. Overall survival between racial groups was assessed using Cox proportional hazard analysis and Kaplan-Meier curves, adjusting for potential confounders.

**Results:** Of 36,756 patients, 32,841 were White (89.6%), 3,458 were Black (9.4%), and 337 were Other race (0.9%). The mean age of diagnosis for Whites, Blacks, and Others was 69.8, 65.7 and 65.1 years old, respectively. There was a significant difference in survival time between races, with median survival time of five, four, and six months for Whites, Blacks and Others, respectively. Race was significantly associated with decreased survival among Black patients (HR 1.07, 95% CI 1.03 - 1.13). Ethnicity was also associated with increased survival among Hispanics compared to non-Hispanics (HR 0.86, 95% CI 0.82 - 0.90).

**Conclusions-Implications:** In Florida, Black race is associated with decreased survival when compared to Whites. Additionally, Hispanic ethnicity is associated with an increased survival when compared to Non-Hispanics. Future research into these ethnic and racial disparities is warranted and clinically relevant.

**P40.**

**Mortality difference between uveal and conjunctival melanoma in Florida between 1981 and 2015**

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**Introduction and Objective:** Ocular melanoma is the most common primary intraocular malignant tumor and the most common intraocular cause of mortality in adults. The majority of ocular melanomas originate from the uvea (approximately 83%) followed by conjunctival melanomas. Our objective was to assess if there was a difference in mortality between uveal melanoma (UM) and conjunctival melanoma (CM) in patients diagnosed in Florida between 1981 and 2015.

**Methods:** Retrospective cohort study based on secondary analysis of data obtained from the Florida Cancer Data System. Cox proportional hazards multivariate regression with survival time as dependent variables was used to adjust for differences in age of diagnosis, sex, race, smoking status, decade of diagnosis, histological subtypes, and stage of ocular melanoma.

**Results:** 2381 patients with primary UM and 210 cases of primary CM between 1981 and 2015 in Florida were included in the study. After adjusting the aforementioned variables there was no statistically significant difference in survival in CM compared to UM, with a hazards ratio (HR) of 0.9 (95% CI 0.7-1.3). Median survival time was found to be 8 years in UM and 7.3 years in CM. There was an increase in hazard of mortality with increasing age of diagnosis. In addition, current smokers had a 50% increased hazard of death as

compared to patients who had never smoked (HR 1.5, 95% CI 1.2-1.8), while former smokers have a similar risk as those who never smoked. Patients with regional or distant extension of disease at the time of diagnosis had significantly increased hazard of mortality, as compared with local disease (HR 2.0 [95% CI 1.4-2.8] and HR 11.0 [95% CI 7.4-16.6], respectively). Female sex provided a statistically significant survival benefit (HR 0.8, 95% CI 0.7-0.9).

**Conclusions-Implications:** After adjustment, there was no statistical difference in survival between CM and UM. Patients in Florida have a longer median survival than previously reported (8 years versus 4 years). This may be due to the improvements in diagnosis and recent therapy compared to earlier decades. Furthermore, our results indicate that cessation of tobacco use can improve mortality in both CM and UM.

**P41.**

**Targeted and controlled anticancer drug delivery and release with magnetoelectric nanoparticles.**

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**Introduction and Objective:** Exploiting the difference in electric properties between normal and cancer cell membranes, magnetoelectric nanoparticles (MENs) enter cancerous cells carrying a therapeutic payload and release the payload intracellularly with the application of an external magnetic field, while not affecting normal cells. Our study demonstrates the effectiveness of MENs, which have been developed to address the critical issue of normal cell off-targeting in cancer treatment, in both *in-vitro* and *in-vivo* studies, as well as characterizes their biodistribution and clearance.

**Methods:** SKOV3 human ovarian carcinoma cells were used as a model to show unique cancer targeting capabilities of these CoFe<sub>2</sub>O<sub>4</sub>@BaTiO<sub>3</sub> nanostructures coated with the mitotic inhibitor Paclitaxel (PTX). The MENs-PTX bond was characterized in the lysate of treated cells using spectroscopic analysis and scanning probe microscopy. SKOV3 xenografted athymic nude mice were treated via subcutaneous or IV injection on a weekly basis with a MEN, conventional ferromagnetic nanoparticle (MN), or polymer nanoparticle (PLGA) formulation. Biodistribution and clearance of MENs is investigated through the key parameters that affect the therapeutic index, i.e. the maximum tolerated dose, blood circulation half-life and biodistribution due to organ accumulation. The approach is to study factors such as the size and shape of MENs, chemical composition, targeting ligand functionalization, MENs' biodegradability, and microenvironment and other biological barriers. Both conventional fluorescent markers and a novel nanoparticle distribution approach based on energy dispersion spectroscopy (EDS) are exploited.

**Results:** *In-vitro* studies on the cell lysate of MENs treated SKOV-3 cells determined reliable entry into the cells by MENs with the

application of a small magnetic field (~100 Oe) and reliable payload release with the application of an a.c. magnetic field (~50 Oe, 100 Hz). *In-vivo* studies demonstrated that the MENs-PTX formulation in combination with an externally applied magnetic field reduces tumor growth rate when injected subcutaneously, and fully cures the cancer when delivered via IV injection. The MENs formulation was more successful in treating the tumor than both MN and PLGA formulations. EDS confirmed the presence of MENs in tumor tissues.

**Conclusions-Implications:** MENs provide a novel mechanism by which cancer cells are targeted (using the inherent difference between cancer and normal electric cell membrane properties) and a drug payload is released (externally triggered with the application of an a.c. magnetic field) reliably. The underlying physics of the electric field interactions involved in the MENs drug delivery system was demonstrated here using ovarian cancer, but can be applied to virtually any cancer.

## P42.

### Incidence of human papillomavirus (HPV)-associated cancers in American males: analysis of trends from 2000-2012

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**Introduction and Objective:** Human papillomavirus (HPV) is implicated in several clinical syndromes, including epithelial malignancies. While the Food and Drug Administration has approved the use of a quadrivalent Human Papilloma Virus (HPV) vaccine for both men and women, recent immunization surveillance data shows that only 1.4% of American adolescent males have received at least one dose. Furthermore, few studies have investigated the incidence of three HPV-associated carcinomas - oropharyngeal, anorectal, and penile - in American males. In this study, we analyze the incidence rates and disease burden of these malignancies in various subsets of the American male population.

**Methods:** Data between the years 2000 and 2012 was obtained from the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) database. ICD-O-3 codes were used to identify the annual incidence (per 100,000 men) for anorectal, oropharyngeal, and penile squamous cell carcinomas. Annual percent changes for all carcinomas - as well as each carcinoma individually - were established by linear regression, with jointpoint analysis conducted to indicate significant changes over this time period. Subset analysis was then performed to evaluate trends among different age groups and races/ethnicities.

**Results:** The overall incidence of all HPV-associated carcinomas increased from 5.6 to 6.4 cases per 100,000 males. Statistically significant increases in the incidence of oropharyngeal and anorectal carcinomas were noted, as well. While the incidence of penile carcinomas decreased, this change was not statistically significant. Among different age groups, an increase in the incidence of all three cancers was demonstrated for all American males between the ages

of 50-79. The incidence of oropharyngeal cancers also increased for Native American/Alaskan Native males of all ages, as well as for white males between the ages of 50-79. Among black/African-American males of all ages, the incidence of oropharyngeal carcinomas decreased each year by 1.95%; however, significant increases in the incidence of anorectal carcinoma were detected in younger African-American men (ages 40-59).

**Conclusions-Implications:** The incidence of all HPV-related carcinomas raised in men between 2000 and 2012, with statistically significant increases for oropharyngeal and anorectal carcinomas. Increasing age was found to relate to increasing incidence; this may reflect the indolent course of HPV carcinogenesis, as well as improved healthcare access/screening with advancing age. Statistically significant increases in the rates of anorectal carcinomas were detected in black/African-American males between the ages of 40-59. These findings illustrate the increasing burden of HPV carcinogenesis in males and highlight the importance of improving vaccination efforts for young men.

## P43.

### Combined BH3 and Metabolic Profiling as a Method to Define Therapeutic Response and Resistance in Grade IV Astrocytomas

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**Introduction and Objective:** Grade IV astrocytomas, formerly known as glioblastoma multiforme (GBM), are the most common primary brain tumors and have the highest mortality. The therapeutic standard for managing this malignancy remains a combination of surgery, chemotherapy, and radiotherapy; however, there is no cure, nor has there been any significant advancement in the clinical approach to GBM since this protocol was established in 2005. This study aims to better understand the molecular and metabolic characteristics of GBM-derived cell lines to better define treatment groups and potentially identify new avenues for therapy. This study utilized continuous, commercially-available GBM cell lines U87, U118, A172, and H4, and GBM cell lines from the NCI60 bank (SF268, SF295, SF539, SNB19, SNB75 and U251) and examined the concentrations of Bcl-2 family proteins on mitochondria and metabolic activity for each of the cell lines. The measures were correlated to IC<sub>50</sub> values for temozolomide (TMZ).

**Results:** Western blot analysis of pro-survival and pro-apoptotic Bcl-2 proteins revealed that U118, U87 and SNB19 expressed high levels of Bcl-2, while A172 had increased Bcl-xL expression. Interestingly, Bcl-2 and Bcl-xL were not detected in H4 cells. Incidentally, pro-apoptotic BH3-only protein (Bid, Bim, Puma, etc.) levels were increased in H4 and A172 when compared to the U118 and U87 cell lines. Metabolic analysis of the cell lines revealed that U118 and SF295 cells were glutaminolytic, while U87, A172, and H4 were classified as glycolytic. We assessed cellular viability in the



presence of increasing doses of TMZ for each cell line. We found that U118 and SNB19 cells were the most resistant followed by U87, SF295, U251, A172, SF539, SF268, SNB75 and H4 respectively. Interestingly, MGMT levels did not influence chemo-responsiveness in these cell lines.

**Conclusions-Implications:** We found that Bcl-2 protein profiling was a useful means to determine therapeutic response and resistance. This was further enhanced by metabolic stratification, wherein glycolytic cells were shown to be more sensitive TMZ than glutaminolytic cells that may possess more stable mitochondria. In the immediate future, we will increase the cellular profiling to include mitochondrial dynamics and quality control as well. Using these approaches, we will produce a method to define GBM responses and outcomes based on their mitochondrial and metabolic context.

#### P44.

##### Anatomical preparation method for Achilles tendon allograft in Anterior Cruciate Ligament repair

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**Introduction and Objective:** Achilles tendons are commonly used today as replacements for torn anterior cruciate ligaments. Allografts are used in almost half of primary reconstructions, one-fifth of which are Achilles tendons. Achilles tendons are used because of their strong tensile strength and donor availability; however, in the past this allograft preparation has been plagued by a high failure rate. This team proposes that this failure rate is due in large part to a preparation method that is not specific to this tendon. The objective of this study is using our anatomical approach that is specific for the Achilles tendon allows the tendon to showcase its high tensile strength, making it a good option for a bone-tendon configuration allograft. The present study aims to determine whether the anatomic preparation of Achilles tendons has a higher tensile strength than the traditional central one-third preparation.

**Methods:** Twelve sets of deidentified cadaver Achilles tendons were procured from the University of Miami tissue bank. Tendons were prepared as pairs, with right and left from a single donor. Within a tendon pair, the right and left tendons were randomized to a preparation method. This ensured that both preparation methods were represented in every tendon pair. Tendons were then be prepared using either the Central 1/3 method (standard of care) or the novel anatomical preparation method. Tendons were taken to Mt. Sinai Institute of Biomechanics, where they were tested on the MTS machine. Maximum tensile strength was measured. Results were analyzed with one-tailed paired t-test, using SPSS.

**Results:** Twelve pairs of Achilles grafts were tested, for a total of 24 tendons. All of the tendons included in the analysis achieved mid-substance rupture when tested on the MTS machine. A paired t-test was used to evaluate the difference between the two preparation method means. It revealed a statistically significant difference

between the two groups, with the anatomical preparation being stronger (95%CI 73.2-1230.6 N m,  $t(11)=2.479$ ,  $p=0.0125$ ). The two preparations were not significantly correlated with each other. The study has a power of 0.79.

**Conclusions-Implications:** The data from our study indicate that the anatomic preparation method of Achilles tendons is significantly stronger than the central one-third method. This challenges the continued use of the central one-third method in ACL reconstructions, given their relatively high failure rate; however, our favorable *ex vivo* results do not necessarily translate to improved clinical outcomes *in vivo*.

#### P45.

##### Neurological symptoms in children with intussusception and their outcomes at a large community hospital.

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**Introduction and Objective:** Intussusception most commonly presents with a triad of classical abdominal symptoms pain, vomiting, and bloody stools. However, intussusception can also present with neurological manifestations with or without the classical symptoms. This atypical presentation makes the identification of intussusception more difficult and may delay its diagnosis, potentially leading to complications. The objective of this study was to find if children with intussusception presenting with neurological symptoms with or without classical symptoms have a higher frequency of complications than children who display only classical symptoms.

**Methods:** Historical cohort study based on chart reviewing of all children under 3 years of age with one or multiple episodes of intussusceptions seen at Baptist Health South Florida (a multi-center community hospital system) from January 2009 to December 2013. The main outcome was the frequency of failed enema and surgery to treat the intussusception. Rates of other complications such as death, admission to the intensive care unit (ICU), and recurrence of intussusception were secondary endpoints.

**Results:** A total of 153 episodes of intussusception were included. Most episodes were observed in infants below two years of age (71%) and in males (65%). Duration of symptoms was under 24 hours in approximately 75% of episodes. Neurological symptoms were significantly more prevalent among episodes of non-Hispanics than in episodes among Hispanics (60.0% vs. 40.0%;  $p=0.002$ ). Complications were observed in 23 episodes, and according to the unadjusted analysis complications were more frequent in those presenting with neurological symptoms compared to those with classical symptoms (OR 4.1; 95% CI: 1.24 -13.61;  $p=0.021$ ). These findings were confirmed in the adjusted analysis where age, and duration of symptoms were controlled (OR 4.12; 95% CI: 1.18 – 14.37;  $p=0.026$ ).

**Conclusions-Implications:** Pediatric patients presenting with neurological symptoms typically undergo various testing do determine the cause of their presentation. It is important to

consider intussusception, as those patients presenting with neurological symptoms were 4 times more likely to have complications. The small sample size of neurological patients presents a potential limitation in the precision of the study, although the sample size demonstrates a statistically significant result. In the end, it is important that physicians consider intussusception in pediatric patients presenting with neurological symptoms since they have a higher frequency of complications.

## P46.

### Pulse Oximetry Use in Detecting Congenital Heart Defects in Asymptomatic Infants: A Look at how Recommendations are Implemented in the Hospital Setting

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**Introduction and objective:** Pulse oximetry has been recommended by the Department of Health and Human Services (HHS) Secretary and the American Academy of Pediatrics (AAP) to be added to newborn screening panel to screen for critical congenital heart defects prior to discharge from the hospital. Despite evidence that pulse oximetry is an effective screening method for congenital heart defects, the implementation of these recommendations varies. The objective of this study is to evaluate the implementation of pulse oximetry screening in a multi-hospital health system.

**Methods:** An observational descriptive study was conducted through retrospective evaluation of clinical records of 308 healthy newborns. The information obtained included demographic information, whether pulse oximetry screening was performed prior to discharge, and if so, on what limb and what time after birth.

**Results:** In this study 79.5% (95% CI 74.8% to 83.8%) of newborns were screened with pulse oximetry. Of those newborns who were screened, 71.5% (95% CI 65.6% to 77.0%) were screened at more than 24 hours of age and 99.6% (95% CI 98.0% to 99.9%) were screened on both the arm and the leg. There was significant inter hospital variation in screening. While hospitals A and B screened the vast majority of newborns (97.1%, 95.8% respectively), the other two centers (C and D) screened none.

**Conclusions-Implications:** Our results indicate that once a protocol has been implemented in this hospital system, there is a high rate of compliance with the recommendations for pulse oximetry screening. As we did find a large inter-hospital discrepancy future studies needs to address the issue that having a protocol for screening in place within a hospital system, does not guarantee that all newborns within the system are being screened. Implementation at each institution needs to be looked at individually and compliance with recommendations needs to be determined.

## P47.

### Does obesity affect outcomes in children admitted from trauma centers?

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**Introduction and Objective:** Pediatric obesity has reached epidemic proportions in the United States. In the critical care setting, obesity has yet to be fully studied. We sought to evaluate the effects of obesity in children who are admitted to a hospital from trauma centers using Kid's Inpatient Database (KID) during 2009. We expect to find that pediatric obesity will correlate strongly with previously established papers; that obese patients will more likely be Black or Hispanic, be female, have longer lengths of stay, have a larger number of diagnoses and procedures, a worse severity of illness, a higher risk of mortality, have commonly found comorbidities as obese adults, and will have worse critical care outcomes when intubated.

**Methods:** The study examined inpatient admissions from pediatric trauma patients in 2009 using the Kids' Inpatient Database (KID). Patients (n=27599) were selected from the KID based on Age (AGE>1) and Admission Type (ATYPE=5) and assessed on Race, Sex, Length of Stay (LOS), Number of Diagnoses and Procedures, Severity of Illness (SOI), Risk of Mortality (ROM), Co-morbidities, and Intubation by comparing obese and non-obese cohorts. Chi-square test and Student t-test were used to analyze the data. All variables were weighted to get national estimates.

**Results:** The overall prevalence of obesity (those coded as having obesity as co-morbidity) was 1.6% with significantly higher prevalence among Blacks (1.8%), Hispanics (2.3%), and Native Americans (4.1%; p<0.001). Obesity was more prevalent among females (2.4% vs 1.2%; p<.001). Overall mortality in the cohort was 4.8%. Obesity was significantly lower among children who died during hospitalization (0.5% vs 1.6%; p<0.002). However, obese children had significantly longer LOS, greater number of diagnoses, more procedures and greater than expected loss of function due to SOI when compared with non-obese cohort (p<.001). Deficiency anemia, diabetes, hypertension, liver disease, and fluid and electrolyte disorders are all strongly associated with the presence of obesity (p<.005). The rate of intubation is similar between obese and non-obese cohorts.

**Conclusions-Implications:** Our study using KID national database found that obese children who are admitted from trauma centers have higher morbidity and LOS but lower mortality. Racial and gender inequalities of obesity prevalence is consistent with previous reports.

**P48.**

**Prematurity and an Increased Risk of Epilepsy in a Population of United States Children Aged 0-17 years**

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**Introduction and Objective:** According to the WHO, there are approximately 15 million infants born prematurely each year. In the U.S. alone, it is currently estimated that the 1-year prevalence of epilepsy in children is 7.1 per 1000. A relationship between prematurity and the development of epilepsy would indicate a significantly at risk population in the U.S. and globally.

**Methods:** A cross-sectional study utilizing the SLAITS database, a 2011-2012 national telephone survey of children's health from a sample of the general community. A secondary data analysis was performed using STATA software. We completed baseline characteristic analyses between pre-term and term groups and identified statistically significant differences. We performed bivariate analyses of potential confounding variables with epilepsy. This information was analyzed using chi-square testing with an alpha level of 0.05. We used multivariate logistic regression to calculate the adjusted association between prematurity and epilepsy. Finally, we identified cerebral palsy as an effect modifier and stratified the data into a group of cerebral palsy only and a group excluding cerebral palsy. The information was analyzed by computing odds ratios with a p value of <0.05 and confidence interval of 95%.

**Results:** Pre-term birth, age, poverty level, kids' insurance coverage, brain injury and cerebral palsy were significantly associated with higher rates of epilepsy (all p values<0.05). Results from the unadjusted bivariate analysis showed that pre-term birth was significantly associated with a greater risk of epilepsy (OR=2.3, 95% CI=1.7-3.1). In the adjusted model, pre-term birth was significantly associated with a greater risk of epilepsy (OR=2.5, 95% CI=1.8-3.4). Stratified logistic regression excluding CP patients slightly attenuated the un-stratified, unadjusted model: pre-term birth was significantly associated with an increased risk of epilepsy (OR=2.0, 95% CI=1.4-2.7).

**Conclusions-Implications:** We found that pre-term birth independently increases the risk of epilepsy approximately 2-fold in a United States population aged 6 months to 17 years. This corroborates existing literature documenting a similar relationship in European populations. The significantly increased risk of epilepsy in pre-term infants has varied clinical implications including a potential role for counseling parents of pre-term infants on the clinical manifestations of epilepsy, closer neurologic follow up of pre-term infants, earlier diagnosis of epilepsy and improved management of these patients.

**P49.**

**Access to prescription medications as an indicator of school day absenteeism for children with special health care needs**

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**Introduction and Objective:** Education has been extensively studied as a leading indicator of health outcomes. The National Poverty Center (NPC) states that better educated individuals have lower morbidity rates from the most common chronic and acute illnesses regardless of many other factors including income, access to insurance, and family background indicators. Although life expectancy is increasing in the United States, the difference in life expectancy between those with and without a college education has also grown over time. Excessive school day absence rates, even as early as elementary school, have been found to be useful predictors of future school dropout. While it has been widely known that the majority of school absences are due to health problems of the student or family members, there is little evidence present on the specific factors that prevent children from attending school. This study served to identify if access to prescription medications is an underlying factor in the number of school absences reported by children with special health care needs (CSHCN).

**Methods:** The data examined in this study is de-identified data from a cross-sectional study performed as a part of the Centers for Disease Control and Prevention (CDC) 2009-2010 National Survey of Children with Special Health Care Needs (NS-CSHCN). After consideration of the exclusion and inclusion criteria, 29,881 children ages 5-17 were included in the study. Stata 14 was used for data analysis which included the use of the Chi-square statistic, bivariate analysis and subsequent binary logistic regression, and assessment of collinearity.

**Results:** The adjusted model revealed that CSHCN without access to prescribed medications had approximately 3.3 times higher odds of missing more than 5 days of school due to illness or injury in the previous year compared to those who had access to their medication, independent of socioeconomic, demographic, and access to health care characteristics.

**Conclusions-Implications:** This work has important implications for realistic and sustainable implementations to increase access to prescription medications as a strategy to decrease numbers of school day absences. Compared to many of the other barriers to school attendance, for example poverty level, family structure, or other demographic variables that are inherent to a household, increasing access to medications is relatively feasible. Further investigation will involve eliciting the modifiable barriers that inhibited students from obtaining their prescription medications.

## P50.

### Investigating the Physiological Effects of Endotracheal Suction in the Pediatric Intensive Care Unit

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**Introduction and Objective:** Endotracheal (ET) suction is a routine and necessary procedure for children receiving mechanical ventilation to remove accumulated secretions from the airway. The physiologic effects of ET suction with or without saline instillation during the procedure are not well studied in children. The use of saline during ET suction might help to increase sputum yield and improve airway clearance. However, saline instillation may worsen physiologic instability that can potentially occur during ET suction. This study evaluates the effect of saline on various physiologic parameters after ET suction in ventilated children.

**Methods:** For pediatrics of mean age  $6 \pm 5.3$ ,  $n = 26$  Patients' Heart Rates, Blood Pressures (Systolic and Diastolic), Respiratory Rates, and Oxygen Saturations were monitored continuously before and after suction; each patient had suction by routine or as-needed and saline was prescribed at the discretion of the clinician for a total of  $n = 332$  suction events.

**Results:** The results reported are derived from the mean values of a 5-minute window before and after suction. Heart Rate was found to increase by 3.63 bpm on average due to suction with saline ( $P < 0.01$ ), while all other parameters had no significant changes. However, when suction was performed without saline, Heart Rate, Systolic Blood Pressure, and Diastolic Blood Pressure increased by 3.14 bpm, 1.83 mmHg, and 1.34 mmHg, respectively ( $P < 0.01$ ). Oxygen Saturation decreased by 0.28% ( $P < 0.01$ ), while Respiratory Rate had no significant change.

**Conclusions-Implications:** The results of this study strongly suggest that the changes due to suction and saline are very small and can only be seen with large samples. This study shows that instillation of saline during ET suction does not worsen physiologic instability. Provided there are no other complications from the use of saline it can be safely used during ET suction.

## P51.

### Venous thromboembolism incidence, risk factors, and prophylaxis in 332 patients who underwent robotic hysterectomy with staging for uterine cancer.

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**Introduction & Objective:** Uterine cancer (UC) is the most common gynecologic malignancy in the United States. The standard of care is total hysterectomy and surgical staging. The Caprini Risk Assessment Score predicts that many UC patients undergoing hysterectomy will be at high risk for venous thromboembolism (VTE),

including deep vein thrombosis (DVT) and pulmonary embolism (PE). VTE is the major cause of morbidity and mortality in post-operative hysterectomy patients. It is not yet clear whether minimally invasive surgery (MIS) carries a different risk of perioperative VTE compared with open surgery. The objective of this study is to determine the incidence and risk factors for VTE after MIS in patients with UC.

**Methods:** This was a retrospective cohort study of all patients with uterine cancer treated with MIS by 2 gynecologic oncologists from 2010-2014. Cases converted to laparotomy were excluded. The primary outcome measure was clinically diagnosed VTE within 120 days of operation.

**Results:** Of the 332 patients included in this study, 97.6% underwent robotic hysterectomy and 2.4% underwent a robotic radical hysterectomy for uterine carcinoma. VTE prophylaxis included 100% on sequential compression devices and 31.2% on chemoprophylaxis with unfractionated or low molecular weight heparin doses given on post-op day 0 (3.8%), post-op day 1 (29.8%), and post-op day 2 (6.0%). 100% of our patients had a Caprini score greater than 5, predicting that 40-80% would develop a VTE. During a 120-day follow up, the VTE prevalence was 1.5% (5/332). Only 4 (1.2%) DVTs occurred in the 30 day postoperative period. 2 of the 5 patients had a previous DVT at 1 year and 30 days prior to surgery, respectively. Of the 3 patients with new onset DVT, 2 received chemoprophylaxis. The mortality rate was 0.3% (1/332), representing a patient diagnosed with a preoperative DVT and PE 1 month prior to surgery and on continuous chemoprophylaxis. Only 1 (0.4%) of 228 patients not receiving chemoprophylaxis developed a DVT.

**Conclusions-Implications:** The Caprini score predicted a 40-80% risk of DVT/PE among UC patients, yet our rate of new onset DVT/PE was only 0.9% among this high risk group. The very low VTE rate of 0.4% among UC patients not receiving chemoprophylaxis calls into question whether chemoprophylaxis is warranted in this patient population.

## P52.

### Biochemical characterization of Arsl: a novel C-As lyase for degradation of environmental organoarsenicals

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**Introduction & Objective:** Arsenic is considered by the U.S. Environmental Protection Agency (EPA) to be the most prevalent environmental toxin. Pentavalent organoarsenicals such as MSMA (monosodium methylarsenate or MAs(V)), roxarsone (4-hydroxy-3-nitrophenylarsonic acid) (Rox(V)) and phenylarsenonic acid (PhAs(V)) are currently used as herbicides and growth enhancers in animal husbandry, respectively. They undergo environmental degradation to more toxic inorganic arsenite (As(III))



that contaminate crops and drinking water supplies. Recently, our laboratory identified a two-step pathway of degradation of MSMA to As(III) by microbial communities: (i) reduction of MSMA to methylarsonous acid (MAs(III)) by some bacterial species, and (ii) demethylation of MAs(III) to As(III) by other bacteria. We cloned the *arsI* gene responsible for MAs(III) demethylation from an environmental isolate, *Bacillus* sp. MD1. *arsI* encodes a non-heme iron-dependent dioxygenase that cleaves the carbon-arsenic bond. Purified Arsl catalyzes Fe(II)-dependent demethylation of the trivalent forms of MSMA and roxarsone. This is the first C-As lyase to be identified and shown to be involved in organoarsenical degradation. The objective of my research is characterization of the molecular mechanism of Arsl cleavage of the C-As bond.

**Methods:** To investigate the role of specific residues in catalysis, amino acid residues lining the Fe(II)-binding site, and the substrate binding site have been altered by site directed mutagenesis. I evaluated the biochemical properties the altered enzymes using a combination of fluorometry, isothermal titration calorimetry (ITC) and other biophysical techniques.

**Results:** My results employing protein fluorescence of wild type Arsl show that the enzyme has the highest affinity for the trivalent form of the growth promoter roxarsone. The order of affinity is  $Rox(III) > PhAs(III) > MAs(III)$ . The affinity ( $K_d$ ) for PhAs(III) and Fe(II) determined by ITC is 0.62 nM and 4.2  $\mu$ M, respectively. These data are in agreement with the results from ligand-dependent quenching of intrinsic protein fluorescence. Rox(III) has a unique absorption spectrum. Arsl produced a blue shift in the absorption spectrum of trivalent roxarsone, allowing for real-time measurement of catalysis.

**Conclusions-Implications:** These data will elucidate the mechanism of Arsl catalysis, augmenting our understanding how microbes remodel the environment through biotransformation of organoarsenicals, and complement our understanding of the arsenic biogeochemical cycle.

### P53.

#### A Brain Attack protocol achieving better door to needle time in stroke.

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**Introduction and Objective:** Rapid administration of intravenous thrombolysis in patients with acute ischemic stroke requires a well-coordinated process. The American Heart Association reduced the goal of door to needle time from 60 to 45 minutes (min) to achieve better clinical outcomes. The objective of this study is to evaluate the impact of a change in the Brain Attack (BrA) protocol in our institution as a quality improvement project to reduce the door to needle time.

**Methods:** This is a single center retrospective chart review of our brain attack database before and after the implementation of a new brain attack protocol on April 2014 in the Cleveland Clinic

Florida. The major difference in the brain attack protocol was the performance of head computed tomography (CT) scanning before neurological assessment as compared to after. We assessed demographic data, and the times for door to neurology assessment, door to CT imaging, door to imaging interpretation and door to needle from May 2013 through April 2014 (Pre-BrA group) as compared to May 2014 through April 2015 (Post-BrA group).

**Results:** A total of 199 patients (76 in the Pre-BrA group and 123 in the Post-BrA group) were included in this study. Both groups were similarly comparable in age, sex and risk factors. NIHSS results on admission were also comparable among both groups (mean 4.8 in the Pre-BrA group and 6.7 in the Post-BrA group). After the new brain attack protocol was formally established the door to neurology assessment time was reduced from a mean of 15 to 5 min. There was a reduction in door to CT time from a mean of 14.9 to 4.1 min and door to imaging interpretation from 36.9 to 19.5 min. For patients eligible for thrombolysis (15 in the Pre-BrA group and 23 in the Post-BrA group) the door to needle time was reduced from a mean of 53 to 40 min.

**Conclusion-Implications:** The newly implemented brain attack protocol in our institution was successful in reducing door to needle time.

### P54.

#### Obstructive Shock in a Patient Presenting with Rectal Bleeding and Syncope

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**Introduction and Objective:** Aortic aneurysms (AA) can often present with sudden rapid decompensation. We present the case of a gentleman who presented with rectal bleeding and syncope. He was found to have a large thoracic AA which led to acute decompensation and unfortunately, death. We present this case in order to highlight an unusual cause of rectal bleeding and the potential rapidity of decline in these patients.

**Clinical Course:** An 85 year old male with a past medical history of hypertension presented to the emergency department (ED) with syncope and rectal bleeding. He had noticed bright red blood per rectum one day prior to presentation. The following morning, he experienced exertional chest pain, lightheadedness and syncope. He was alert on arrival. His vitals in the ED were: BP 89/62 mmHg, Pulse 56 and respiratory rate of 15. Initial workup revealed a hemoglobin of 12.5, BUN of 28 and creatinine of 1.10 (unknown baseline). INR and aPTT were normal. EKG showed RBBB. Stool was brown in color but positive for occult blood. Chest x-ray showed a mildly tortuous ectatic aorta. CT abdomen revealed diverticulosis without diverticulitis. A CT-angiogram (CTA) was ordered to rule out pulmonary embolism. CTA revealed an aortic aneurysmal dilatation of the ascending thoracic aorta measuring 5.6 x 5 cm, with a large intramural hematoma measuring 1.5 cm in maximum thickness and hemopericardium.

Shortly after initial evaluation, he suddenly became unresponsive and lost his pulse. CPR was initiated. Initial rhythm was PEA. He also had new jugular vein distention, consistent with obstructive shock secondary to cardiac tamponade. Emergent ultrasound guided pericardiocentesis drained 250 cc bloody secretions. The patient expired despite 45 minutes of aggressive resuscitation efforts.

**Conclusions-Implications:** Our case has two teaching points. Firstly, we aim to present an account of sudden decompensation in an otherwise stable patient. Our patient had been active, ambulatory and had a high functional level prior to presentation. We witnessed his decline over a matter of seconds and wish to communicate the urgency of evaluating and treating patients with this condition. Secondly, in a patient like ours, physicians may be tempted to stop investigative workup, having identified a “cause” for the presentation. Our case highlights the importance of considering alternative diagnoses even in the presence of an established cause. Although our patient did not survive, it is our hope that our experience will assist other clinicians in maintaining a high vigilance for similar presentations.

## P55.

### The Emergency Medical Services impact on stroke patient management arriving at the Cleveland Clinic Florida.

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**Introduction and Objective:** Rapid administration of intravenous thrombolysis in patients with acute ischemic stroke requires a well-coordinated process. EMS carries the important role of transporting stroke patients to the ED for rapid intervention. The American Heart Association reduced the goal of door to needle time from 60 to 45 minutes (min). The objective of this study is to evaluate the Emergency Medical Services (EMS) impact on the management of stroke patients in the Cleveland Clinic Florida.

**Methods:** Single center retrospective chart review of our stroke database from May 2013 to April 2015 in the Cleveland Clinic Florida. Stroke patients were divided in two groups, EMS-arrival group (EMSG) and the ED-walking group (ED-Wg). We assessed demographic data, NIHSS, and the time in minutes (min) for onset to door (OTD-time), door to neurologist (DTN-time), door to computed tomography of the head (DTCT-time), and door to needle (DTN-time) and onset to needle (OTN-time).

**Results:** 62 patients (34 in the EMSG and 28 in the ED-Wg) were included. The mean NIHSS for EMSG and the ED-Wg were 10.0 and 5.1, respectively. An NIHSS of 6 or more was 62% in the EMSG compare to ED-Wg, 32%. Mean OTD-time in the EMSG was 163.8 min compare to ED-Wg with 485.6 min. Mean DTN-time is 6.3 min in the EMSG whereas the ED-Wg was 17.5 min. Mean DTCT-time in EMSG was 8 compare to 15.3 min in the ED-Wg. 14 patients

received IV-tPA in the EMSG and 8 on the ED-Wg. The mean DTN-time and OTN-time in the EMSG was 41 and 101.6 min compare to 48 and 147.9 min in the ED-Wg. All patients receiving IV-tPA in less than 30 min were in the EMSG.

**Conclusions-Implications:** Most patients brought by EMS will have an NIHSS of 6 or more. The EMS is a determining variable to achieve better management in stroke patients.

## P56.

### Case report: Graves' disease with autoimmune hepatitis and immune thrombocytopenia – “An Autoimmune Tsunami” – A diagnostic and therapeutic dilemma.

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**Introduction and Objective:** Autoimmune diseases are often known to occur simultaneously. There are many confirmed cases of Graves' disease with autoimmune hepatitis (AIH) as well as AIH with immune thrombocytopenia (ITP). We present a unique case of a patient with three different autoimmune diseases—Graves' disease, AIH and ITP occurring together and presenting significant challenges in management and treatment.

**Case presentation:** A 35-year-old female with no significant past medical history presented with symptoms of jaundice, dyspnea and lower extremity edema (LE) for 1 month. She reported worsening dyspnea on exertion for 1 week. On physical examination, she had scleral icterus, thyroid enlargement, thyroid bruit, tachycardia, irregularly irregular heart rhythm, hepatosplenomegaly, ascites and bilateral LE pitting edema. Laboratory findings showed severe anemia, pancytopenia (hemoglobin 7.2 g/dL, white blood cell count  $2.2 \times 10^3$  cells/uL, platelet count  $57 \times 10^3$  u/L) and liver dysfunction with a cholestatic pattern (total bilirubin 4.7 mg/dL). On further evaluation, she was found to have Graves' disease with severely decreased thyroid stimulating hormone (0.007 uIU/mL), increased free T4 (5.13 ng/dL), increased total T3 (200 ng/dL), and elevated thyroid-stimulating immunoglobulins (TSI 447%). Thyroid ultrasound showed a diffusely enlarged, heterogeneous, and lobulated thyroid without discrete cystic or solid nodules. Computed tomography (CT) and ultrasound (U/S) of the abdomen showed liver heterogeneity without a definitive mass, suggestive of active inflammation. Electrocardiogram showed atrial fibrillation with rapid ventricular response. She was also found to have positive anti-platelet antibodies and evidence of hemolytic anemia. She had elevated INR, elevated IgG, positive anti-smooth muscle antibody and negative hepatitis panel, consistent with AIH. Traditional treatment strategies like use of anti-thyroid drugs, radioactive iodine thyroid ablation or thyroidectomy were contraindicated due to the ongoing process of pancytopenia, liver dysfunction, and because the patient underwent CT scan of the abdomen with intravenous contrast, potentially interfering with radioactive iodine ablation. Liver biopsy was contraindicated due to coagulopathy. Conservative



medical management was initiated with prednisone, furosemide, spironolactone, and propranolol. Her symptoms started improving gradually over one week and she was discharged with close outpatient follow up with endocrinology, gastroenterology and hematology.

**Conclusions-Implications:** This case is of great significance as it helps increase awareness of diagnostic and therapeutic challenges involved in cases with a convoluted presentation due to multiple autoimmune diseases. The role of steroids as a rescue drug in curtailing autoimmune processes remains vital especially when other treatment modalities cannot be implemented as in our case.

**P57.**

**Acute gastric volvulus: a deadly but commonly forgotten complication of hiatal hernia. Autopsy case report.**

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**Introduction and Objective:** Gastric volvulus is a rare condition resulting from rotation of the stomach beyond 180°. Gastric volvulus is a difficult diagnosis, mostly because it is rarely considered. Furthermore, the imaging findings are often subtle resulting in many cases being diagnosed at the time of surgery or, as in our case, at autopsy.

**Case Report:** We present a case of a 76 year-old man with an extensive medical history, including coronary artery disease with multiple bypass grafts, who became diaphoretic and nauseated while eating. His presumptive diagnosis at arrival to the hospital was an acute coronary event; however, his initial cardiac work up was negative. A chest CT scan revealed a type III sliding hiatal hernia. The following day, after consistent complaints of nausea and episodes of non-bloody emesis, he suddenly became hypotensive, tachycardic and had an episode of coffee ground emesis. Subsequently, the patient coded and resuscitation attempts were unsuccessful. Autopsy revealed a partially sliding hiatal hernia, consistent with the radiologic impression. Additionally, a gastric volvulus was present with extensive, focally transmural necrosis involving the body/fundus.

**Conclusions-Implications:** Gastric volvulus is a rare entity with variable, non-specific clinical presentations which requires a high level of suspicion for radiologic diagnosis. Acute cases have a high mortality rate and require emergent surgery. This case highlights the value of autopsy in the diagnosis of unsuspected cases of gastric volvulus when death occurs prior to surgical intervention.

**P58.**

**“Black Esophagus” or Acute Esophageal Necrosis: A Rare Complication of Diabetic Ketoacidosis.**

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**Introduction and Objective:** Acute esophageal necrosis(AEN) also known as “black esophagus” or necrotizing esophagitis, is a rare syndrome characterized by diffuse patchy or circumferential black appearance of the esophageal mucosa that preferentially affects the distal esophagus and terminates at the gastro-esophageal junction. Only 88 patients over a span of 40 years have received this diagnosis, prevalence is 0.001 to 0.2% of cases in literature, commonly affecting men (4:1 ratio) in the sixth decade of life. It is associated with high mortality rate (32%). We present a case of AEN presenting in the setting of diabetic ketoacidosis(DKA), affecting both proximal and distal esophagus.

**Case Presentation:** A 65-year-old male presented to the hospital with altered mental status and agitation. He had blood glucose of 989, positive serum acetones, anion gap of 30, consistent with DKA and was started on insulin drip. On day 3, he developed coffee ground emesis and melena, with hemoglobin drop from 10.5 to 7.9. Emergent esophagogastroduodenoscopy(EGD) showed circumferential black necrotic mucosa in the cervical esophagus. Consequently, the scope was withdrawn for fear of perforation, and biopsies were deferred. He was kept nil-per-os(NPO), was placed on nasogastric(NG) suction and intravenous proton pump inhibitors(PPI). His DKA resolved and he was weaned off the insulin drip. Repeat EGD three days later, showed remarkable improvement with only patchy areas of residual necrosis and diffuses ulceration, without any stricture or stenosis. No history of caustic ingestion was documented.

**Conclusions-Implications:** Our case illustrates AEN in the setting of DKA. A history of diabetes mellitus(24%), malignancy(20%), hypertension(20%), alcohol abuse(10%) and coronary artery disease(9%) places patients at risk of developing AEN. Clinically, AEN can present with upper gastrointestinal bleeding(UGIB), epigastric pain, dysphagia, nausea and vomiting. Management of this condition comprises of treating the underlying etiology, maintaining hemodynamic stability, NPO, intravenous PPI, fluoroscopically guided NG tube placement and blood transfusions as needed. Complications include esophageal perforation, mediastinal abscess, stricture formation and death. The present case serves to illustrate the point that upon endoscopic examination, as with caustic ingestion, the presence of circumferential necrosis should prompt immediate withdrawal of the scope, in order to avoid esophageal perforation. This is one of the few known indications for immediate scope withdrawal and termination of the EGD study.

## P59.

### **Myroides – A New player causing Cellulitis and Septic Shock**

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**Introduction and Objective:** Myroides spp. previously known as Flavobacterium is a gram negative aerobic bacillus found in soil and water. A handful of cases of opportunistic infections in immunocompromised patients have been reported since its classification in 1923. We present a case of a male with alcoholic cirrhosis and bilateral lower extremity cellulitis who developed septic shock due to Myroides spp.

**Case Presentation:** Patient is a 68 year old male who was transferred to our hospital with a diagnosis of sepsis. His past medical history was relevant for alcoholic cirrhosis, CHF and chronic lower extremity edema. He was found on the ground for an unknown amount of time covered in his own feces and urine. Upon transfer to our ER he was found to be disheveled and disoriented. He admitted to drinking alcohol but was unable to quantify the amount. Vital signs included BP 95/38 mmHg, HR 123 bpm, RR 21 and a temperature of 37.2 C. His physical exam revealed a distended abdomen and severe cellulitis of bilateral lower extremities with multiple draining ulcers. Patient also had a 1.5cm left gluteal ulcer draining purulent material. Laboratory studies were significant for a WBC count of 11.3k with 84% neutrophils and a creatinine of 2.8. On presentation, the patient met criteria for septic shock and he was started on aggressive fluid resuscitation and empiric antibiotic therapy with Piperacillin/ Tazobactam and Vancomycin. He was admitted to the ICU and started on norepinephrine due to continuing hemodynamic instability. His clinical status continued to decompensate with increasing confusion and respiratory failure requiring intubation. On day 4, patient's blood cultures grew a pan-resistant Myroides spp. sensitive only to Meropenem at an MIC of  $\leq 0.25$  mcgs/ml and Piperacillin/ Tazobactam MIC of 8 mcgs/ml. Patient's antibiotics were switched to Meropenem with subsequent improvement in his clinical status and eventual extubation.

**Conclusions-Implications:** Myroides spp. is a gram negative bacterium found mainly in soil or water and is not a part of the normal human flora. However in immunosuppressed hosts it can present as an opportunistic infection causing cellulitis leading to sepsis. It is known to be a highly resistant bacterium due to  $\beta$ -lactamase production. Given its propensity to cause severe sepsis secondary to cellulitis, it is important to consider this pathogen in immunosuppressed patients presenting with cellulitis not responding to usual antibiotic therapy.

## P60.

### **Aspergillus spondylodiscitis: A rare complication of intrathecal methotrexate chemotherapy in diffuse large B cell lymphoma**

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**Introduction and Objective:** Infectious spondylodiscitis is a destructive central nerve system (CNS) infection leading to detrimental neurologic sequelae. Aspergillus spondylodiscitis is a rare and virulent entity carrying high mortality and is usually associated with chronic granulomatous disease, transplant, or leukemia. Here we describe the first reported case of a patient with diffuse large B cell lymphoma who recently received intrathecal chemotherapy and presented with acute onset of paraparesis. Aspergillus spondylodiscitis was diagnosed through disc biopsy with fungal culture.

**Case Presentation:** A 56-year-old Hispanic male with history of HIV taking antiretroviral therapy presented with paraplegia and severe lower back pain for two days. He had no AIDS-defining illnesses until six months prior to admission when he was found to have CNS lymphoma, diffuse large B cell type. He received standard chemotherapy with adequate response. However, since four months prior to admission, intrathecal therapy with methotrexate was started due to tumor relapse.

The patient presented to our hospital with acute onset of paraparesis, fever and back pain for two days. On physical examination, his blood pressure was 139/83 mmHg and body temperature was 107.6°F when taken rectally. Neurologic examination revealed spastic paraparesis in the lower extremities and he had a sensory level at T12. There was a bilateral extensor plantar reflex. Complete blood count (CBC) showed WBC count of 8900 with 96% neutrophil. His CD4 count was 45. MRI of lumbar spine showed heterogeneous paraspinal soft tissue and epidural enhancement at this T12-L1 level, suggesting discitis and intradiscal phlegmon. No evidence of spinal root compression was observed. Empirical broad spectrum antibiotics were administered. Patient received T12 disc biopsy and gram stain showed extensive inflammation and no visible organisms. Cultures from disc biopsy disclosed Aspergillus fumigatus. Three sets of blood cultures were all negative. We started intravenous voriconazole 4mg/kg every 12 hours and leukocytosis with left shift on CBC resolved on the second day of antifungal therapy. We switched to oral voriconazole before discharge and suggested 6 months of antifungal therapy.

**Conclusions-Implications:** Immunocompromised patients are prone to infection while receiving invasive procedures. We report the first case of aspergillus spondylodiscitis secondary to intrathecal chemotherapy. Aspergillus spondylodiscitis is a fatal disease carrying 25% mortality. Nevertheless, with early diagnosis and appropriate antifungal therapy, the majority of patients do not require surgical intervention. This case highlights the importance of how physicians should be vigilant of post-procedure infection and consider atypical pathogens in patients with immunocompromised condition.

**P61.**

**The lethality of pseudomonas aeruginosa in neutropenic patients**

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**Introduction and Objective:** Pseudomonas aeruginosa is a gram negative, non-motile, non-spore forming bacteria. It is found in fresh water environments, as well as sinks, showers, respiratory equipment and contaminated distilled water. Infections caused by Pseudomonas aeruginosa are often opportunistic in nature, it has a greater propensity to cause disease in the immunocompromised and rarely presents in healthy individuals. As neutrophils are the main defense mechanism against this bacterium, neutropenia is an important risk factor for life-threatening Pseudomonas infections. For this case study, we report a patient who had neutropenia secondary to cyclosporine therapy and subsequently developed extensive cellulitis of his lower extremity.

**Case Presentation:** A 66 year-old Hispanic male on immunosuppressive therapy for idiopathic membranous glomerulonephritis presented with left leg cellulitis. His past medical history was significant for coronary artery disease, diabetes mellitus and chronic kidney disease secondary to glomerulonephritis. On admission, the patient was found with severe sepsis, a WBC count of 2.5, lactic acid of 4.6, elevated troponins at 3.8, and an elevated creatinine at 2.25. Quickly, he progressed to septic shock with a blood pressure of 55/31, a heart rate of 103 accompanied by hypoglycemia and encephalopathy. He was immediately transferred to the intensive care unit, where he was intubated, volume resuscitated, placed on vasopressors, pan-cultured, and started on empiric IV antibiotics. On examination, the patient was found to have severe swelling of his left lower extremity with multiple fluid-filled bullous lesions consistent with compartment syndrome. A CT scan of the leg was obtained which depicted extensive soft tissue swelling and marked edematous changes throughout the left thigh, leg, and foot. The patient was taken to the operating room for an emergent fasciotomy. The following day wound and blood cultures returned positive for Pseudomonas aeruginosa and he was started on dual antibiotic coverage. However, despite utilization of multiple vasopressors and further radical debridements, the patient continued to decompensate, ultimately progressing to multi-organ failure and subsequent expiration.

**Conclusions-Implications:** Despite timely interventions and careful monitoring, Pseudomonas aeruginosa has proven to be a deadly bacterium in the neutropenic patient population. In this case the patient had chronic lymphedema secondary to nephrotic syndrome, which was the point of entry for the bacteria. The patient's inability to mount a robust inflammatory response led to minimal symptoms and signs preceding the Pseudomonas infection-induced septic shock. Even with the advances in medical care and antibiotic therapy, the mortality for Pseudomonas remains as high as 50 to 70 percent.

**P62.**

**Severe Rhabdomyolysis without Systemic Involvement: A rare case of Idiopathic Eosinophilic Polymyositis**

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**Introduction and Objective:** Eosinophilic polymyositis (EPM) is a rare cause of rhabdomyolysis characterized by eosinophilic infiltrates in the muscle. We describe the case of a young patient with eosinophilic polymyositis causing isolated severe rhabdomyolysis without systemic involvement. We further examine the etiologies of EPM and discuss the general approach to diagnosing this rare entity.

**Case Presentation:** A 22-year-old Haitian female with no past medical history presented to us with progressive generalized muscle aches with no precipitating factors. She had no significant drug or family history. Examination of the extremities revealed diffuse muscle tenderness on palpation with limited range of motion secondary to muscle pain. Laboratory findings demonstrated peripheral eosinophilia and high creatinine phosphokinase (CPK) and transaminase levels. She was admitted for severe rhabdomyolysis requiring aggressive intravenous fluid hydration. Work up for the usual culprits was negative. Her CPK continued to rise to greater than 100,000 units/L so a muscle biopsy was performed which showed widespread eosinophilic infiltrate consistent with eosinophilic polymyositis. She was started on high dose systemic corticosteroids. Her symptoms, eosinophilia and CPK level gradually improved.

**Conclusions-Implications:** This case illustrates a systematic work up of rhabdomyolysis in the presence of peripheral eosinophilia. After biopsy demonstrated eosinophilic myositis, many differential diagnoses were considered before establishing a diagnosis of idiopathic eosinophilic polymyositis. To our knowledge, our case of eosinophilic polymyositis is unique as it presented with severe rhabdomyolysis without other organ involvement. Clinicians should maintain a high index of suspicion for this physically debilitating disease to aid in prompt diagnosis.

**P63.**

**Sporadic renal hemangioblastoma:**

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**Introduction and Objective:** Hemangioblastomas are uncommon slowly growing, highly vascularized circumscribed tumors. They occur sporadically or as a component of Von Hippel Lindau disease.

**Case Presentation:** A 78 year old woman, while undergoing a follow-up abdominal CT scan for a recently resected low risk duodenal Gastrointestinal stromal tumor (GIST), was found to have a 3.2 cm mass in the left kidney, without interval change since a study performed 13 months before. Ultrasound revealed a vascular

solid mass in the superior pole of the kidney “concerning for malignancy”. The patient underwent a radical nephrectomy. Gross examination revealed a circumscribed, solid, red mass, measuring 3 x 3 x 2.5 cm. Pathology showed a circumscribed encapsulated neoplasm, composed of numerous capillary-sized blood vessels intermingled with stromal cells with variable amounts of cytoplasm, some showing fine vacuolation. The neoplasm showed alternating areas of hyper and hypocellularity, as well as hemosiderin deposits and foci of extramedullary hematopoiesis. Mitotic figures were rare. The neoplastic cells showed immunoreactivity for inhibin and S-100, and were negative for AE1/AE3, EMA, HMB-45 and Melan A. CD34 and Factor VIII highlighted the rich vascular network, while CD117 showed the presence of mast cells. CD10 was patchy positive and there was a weak to moderate nuclear immunoreactivity for PAX8. This immunoprofile together with the morphology supported the diagnosis of hemangioblastoma.

**Conclusions-Implications:** Renal hemangioblastomas are rare, and can be mistaken for malignancies radiologically. Additionally, they may mimic other neoplasms such as renal cell carcinoma, or epithelioid hemangiopericytoma, microscopically. Wider recognition of their occurrence as primary renal tumors is warranted.

## P64.

### Progressive Sensory Neuropathy and Gait Ataxia as the initial manifestation of Breast Cancer. Case report of a Paraneoplastic Sensory Neuronopathy.

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**Introduction and Objective:** Paraneoplastic Sensory Neuronopathy (PSN) are a heterogeneous group of disorders. Approximately 6.6% of all cancer patients and 4% of women with Breast Cancer had evidence of Peripheral Neuropathy. Pathogenesis of PSN might be T-cell-related or antibody-mediated. Most cases, imaging studies would reveal a possible neoplasm. The objective of this study is to report a 56 year-old female of PSN who presented with Sensory Neuropathy and Gait Ataxia, and after multiple testing, Breast Cancer was diagnosed.

**Results:** 56 year-old right-handed female with PMH significant for Diabetes Mellitus who presented with progressive numbness and tingling of the lower extremities and unsteadiness for 6 months. Neuro-examination showed symmetric areflexia of the lower extremities, proprioception loss in the left foot and gait ataxia. Extensive blood testing demonstrated HbA1c: 6.9, normal autoimmune and tumor markers panel except for anti-SSB 1.2 and CEA 4.9. Anti-Hu antibody was negative. Lumbar puncture showed WBC: 25 and Protein: 87mg/dL.

Electromyographic study showed absent H Reflexes and prolonged latency and decrease amplitude of bilateral ulnar sensory nerve response. PanCT revealed extensive lymphadenopathies in the right axillary area. Ultrasound-guided biopsy of a 6.6 cm abnormal lymph node was performed. MRI Lumbar Spine showed enhancement

of the cauda equine and MRI Cervical Spine revealed multiple root enhancement. Pathology results showed Ductal Carcinoma of the breast. Patient was diagnosed with a PSN and started on Dexamethasone.

**Conclusions-Implications:** PSN should be considered as part of the differential diagnosis of peripheral neuropathy. Imaging studies might not reveal the presence of a neoplasm and further testing is advisable.

## P65.

### Acute stroke and stroke mimics in two different brain attack protocols at Cleveland Clinic Florida.

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**Introduction and Objective:** Stroke mimics are heterogeneous and are challenging to differentiate from stroke at the time of administering tPA. The standardized Protocols adopted by different hospitals for brain attack vary; some may require obtaining neurological assessment prior to NCCT while others obtain NCCT after the neurological assessment. The objective is to study stroke mimics in two different brain attack algorithms that use neurological assessment before and after non-contrast CT (NCCT).

**Methods:** We performed a retrospective chart review of patients who presented to Cleveland Clinic Florida with a brain attack, the year before the change of protocol (May 2013 to April 2014) and one year after the change of protocol (May 2014 to April 2015), group 1 and 2 respectively. We studied the frequency of stroke mimics and the frequency with which tPA was given to them, before and after implementation of the new protocol.

**Results:** A total of 83 and 130 patients were included in group 1 and group 2 respectively. Stroke mimics in group 1 and group2 were 61% and 56% respectively. The common stroke mimics in group 1 were syncope 12%, seizures 10%, migraine 10% and TGA 6% and in group 2, were seizures/post ictal 10%, anxiety 8%, conversion/somatization disorder 6% and migraine 6%. The percent of stroke mimic patients who received tPA in group1 and group2 were 4% and 7% respectively. There was no reduction in the number of patients stroke mimics in group 2 as compare to group 1 (OR=1.244(95% CI 0.7097 to 2.18; p=0.2.) nor was there a reduction in the number of stroke mimics receiving tPA (OR=0.5538(95% CI 0.0926 to 3.3114; p=0.9).

**Conclusions-Implications:** There was no statistical difference in stroke mimics between the two groups and administration of tPA in such patients representing different protocols.



**P66.**

**Altered mental status due to possible trazodone overdose diagnosed as SLE cerebritis**

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**Introduction and Objective:** Systemic Lupus Erythematosus (SLE) is a chronic autoimmune inflammatory condition with a spectrum of clinical presentations. The differential diagnosis includes various other autoimmune, hematologic, psychiatric and infectious etiologies. We present case of a 59-year-old female previously diagnosed with bipolar and anxiety disorders presenting with altered mental status (AMS) who was finally diagnosed with SLE cerebritis.

**Case Presentation:** A 59-year-old female previously diagnosed with bipolar disorder, anxiety, hypertension and breast cancer (s/p treatment) presented with AMS. Initially medication overdose was suspected because an empty bottle of trazodone was found beside her. We were unable to obtain appropriate history as the patient had AMS and her husband (only close relative) had dementia. Extensive workup was done and most of the differential diagnoses were ruled out. Patient was found to have elevated gamma gap, which initiated a rheumatologic workup. The patient had elevated ANA and anti-ds DNA antibodies. During the hospitalization, she was found to meet SLICC criteria for SLE. Lumbar puncture was done and CSF analysis revealed lymphocytic pleocytosis, elevated protein with aseptic and likely non-infectious picture. MRI spectroscopy of brain revealed reversal of normal Hunter's angle with elevated choline to creatine ratio within the white matter and a lactate peak, which may be present in neuropsychiatric lupus. Patient was diagnosed with suspected lupus cerebritis with neuropsychiatric lupus. Subsequently, a kidney biopsy was done that showed Class IV diffuse proliferative glomerulonephritis with fibrillary component likely related to lupus nephritis. Patient was started on treatment for lupus nephritis, which includes treatment for neuropsychiatric lupus with high dose pulse methylprednisolone 1 gram/day for 3 days. It brought down the anti-ds DNA titers from 81 to 15 IU/ml. Clinically, the patient started improving gradually. She was given one dose of cyclophosphamide and discharged on treatment with cyclophosphamide and prednisone with outpatient rheumatology follow-up.

**Conclusions-Implications:** This case stresses the importance of ruling out differential diagnosis of AMS before diagnosing patients with a psychiatric disorder. On the other hand, all patients with SLE might not meet the criteria for diagnosis when they start having symptoms, hence it is critically important to obtain appropriate history and physical examination to support the diagnosis if possible. It is unclear whether we can relate our patient's AMS to pre-existing psychiatric conditions or we can attribute her symptoms to neuropsychiatric lupus by itself. Patient will be following up in the outpatient clinic.

**P67.**

**Acute Disseminated Encephalomyelitis (ADEM) due to *Mycoplasma pneumoniae* Infection in an Adult**

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**Introduction and Objective:** Acute Disseminated Encephalomyelitis (ADEM) is an acute, progressive, yet reversible autoimmune demyelinating CNS disorder. ADEM is a post-infectious, immune-mediated encephalomyelitis, an unusual variant of a CNS demyelinating disorder with a reported incidence of 0.2-0.4/100,000 with only about 3% in adults.

**Case presentation:** We describe a forty year old previously healthy male, who migrated from Venezuela five months prior, presented to the emergency department with three days of sudden onset progressively worsening ataxia and one day of slurred speech. Patient's history was unremarkable with the exception of a few days of flu-like symptoms two weeks prior to presentation. He reported to no alcohol or drug use. He also denied any significant family medical history. On admission, patient was afebrile and hemodynamically stable. His initial neurological exam was normal except for a wide-based unsteady gait. An initial CT Brain revealed no acute intracranial abnormalities. Within 12 hours of admission, the patient neurologically worsened with development of severe dysmetria, dysdiadochokinesia, abnormal heel-shin test and severe truncal ataxia. An emergent MRI Brain revealed abnormal signal intensities within dentate nuclei of cerebellum bilaterally and inferior cerebellar peduncles, extending from the inferior aspect of the mid brain and into the medulla. CSF analysis was unremarkable with no oligoclonal bands. Nutritional deficiencies, heavy metal toxicities and hematological malignancies were ruled out. However, *Mycoplasma pneumoniae* IgM was detected to be reactive. Other acute infections were also ruled out. Patient was diagnosed with ADEM in the setting of *Mycoplasma pneumoniae* infection. Patient was started on pulse dose steroids and azithromycin. A significant reversal of symptoms was observed during his seven days of hospitalization.

**Conclusions-Implications:** Diagnosis of ADEM was established in the absence of CSF oligoclonal bands, presence of MRI findings consistent with grey and white matter demyelination, and rapid reversal of symptoms with antibiotic and steroid therapy. Unlike viral encephalitis, ADEM does not have CNS invasion by microorganisms; and unlike Multiple Sclerosis, ADEM is a monophasic reversible illness. *Mycoplasma pneumoniae* in some rare cases has been associated with ADEM. While these cases have been described in children and adolescents, this is a unique case of *Mycoplasma pneumoniae*-ADEM in an Adult. It is vital for physicians to consider variants of acute demyelinating CNS pathologies, such as ADEM, as a possible etiology that can present with focal or diffuse neurological symptoms.

## P68.

### Clinico-serologic predictors of positive repetitive nerve stimulation study in newly diagnosed generalized Myasthenia Gravis.

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**Introduction and Objective:** Myasthenia gravis (MG) is an autoimmune disorder characterized by antibodies to the post-synaptic acetylcholine (Ach) receptors. A Positive Repetitive Nerve Stimulation (RNSP) is seen in about 80-90% of generalized (g)MG. Few studies have analyzed the clinical and serological markers affecting RNS response in newly diagnosed MG cohort. The objective of this study is to analyze the clinical and serological markers affecting RNS response in newly diagnosed MG patients.

**Methods:** Retrospective chart review of newly diagnosed gMG patients with RNS study and one year follow-up between 2001 and 2011. The medical charts were reviewed for clinical, serological and electrodiagnostic data extraction. Chi-Squared/Fisher was used for categorical variables; Student t-test/ANOVA was used for continuous variables and our level of significance was  $p < 0.05$ .

**Results:** 44 patients included (Mean age: 64, Males: 17, Females: 27, Caucasians: 68%, Hispanics: 16%). Older patients presented with diplopia, ( $p < 0.01$ ) although with less proximal limb weakness ( $p < 0.01$ ). Proximal limb involvement was strongly associated with thymus hyperplasia/thymoma ( $p = 0.053$ ) and Caucasian race ( $p < 0.01$ ). Ach antibodies were positive in 70% and elevated Ach Binding antibodies (Ach-Bind-Abs) correlated with generalized weakness ( $p < 0.05$ ). RNS was positive in 75% and in older patients the odds of having a RNSP decreases ( $p < 0.01$ ). Patients with generalized symptoms had trapezius affected at 46%.

**Conclusions-Implications:** Age was the best predictor for clinical presentation and RNSP. Thymus involvement correlates with proximal weakness. Patients with gMG most likely will have an elevated Ach-Bind-Abs and a RNSP affecting the Trapezius muscle. Patients with upper and/or lower limb weakness would correlate with a RNSP in the same distribution.

## P69.

### Susac's Syndrome, a rare disorder with retino-cochleo-cerebral vasculopathy

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**Introduction and Objective:** Susac's syndrome is a rare disorder characterized by a clinical triad of encephalopathy, branched retinal artery occlusion (BRAO) and sensorineural hearing loss. It is thought to be an autoimmune endotheliopathy leading to inflammation and occlusion of pre-capillary arterioles of the brain, retina and inner ear.

**Case presentation:** 43-year-old woman with a previous diagnosis of MS presented to the ED with sudden onset of painless vision loss

in her right eye for 3 weeks and blurred vision in her left eye for 1 day. The visual symptoms were accompanied by transient abnormal fullness and tinnitus in the right ear. A fluorescein angiogram showed BRAO of the central and inferotemporal region of right eye and BRAO in the inferotemporal region with focal vasculitis changes on left eye. The patient also reported having episodes of confusion like forgetting passwords and getting lost while driving home over the past year. She was diagnosed with MS 3 years ago. MRI at that time revealed abnormal FLAIR intensity in the supratentorial white matter and corpus callosum which led to the diagnosis of MS and initiation of glatiramer acetate. CSF analysis was essentially negative with no oligoclonal bands and a normal IgG index.

On current presentation, neurological exam revealed visual field defects at superior temporal, inferior temporal and superior nasal quadrants of the right eye and inferior temporal quadrant of the left eye. Brain MRI showed focal areas of hyperintense T2/FLAIR signal within frontal subcortical white matter as well as a lesion of non-specific intensity within the corpus callosum. MRA was negative. An extensive workup for vasculitis was negative.

Given the clinical scenario of bilateral BRAO with subacute encephalopathy, transient inner ear symptoms and MRI findings in the corpus callosum, the diagnosis of Susac's syndrome was considered. The patient was started on 1gm steroid and 0.4gm/kg of IVIG for 3 days and maintenance therapy with mycophenolate and monthly IVIG for 6 months. She noticed dramatic improvement in her vision in both eyes 4 days post discharge. Repeat fluorescein angiogram showed resolution of the BRAO in both eyes.

**Conclusions-Implications:** Susac's syndrome is an autoimmune endotheliopathy, which can present with varying degrees of the clinical triad of encephalopathy, BRAO and sensorineural hearing loss. The syndrome can mimic MS in clinical presentation and MRI findings and a high index of suspicion is required to make an accurate diagnosis. Prompt recognition and treatment can significantly improve patient outcomes and minimize long term neurological sequelae.

## P70.

### A Brain Attack protocol reducing length of hospitalization in stroke patients at the Cleveland Clinic Florida.

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**Introduction and Objective:** Rapid administration of intravenous thrombolysis in patients with acute ischemic stroke leads to great clinical outcome. American Heart Association reduced the goal of door to needle time from 60 to 45 minutes (min). Literature is limited for the length of hospitalization as a clinical outcome marker in stroke patients. The objective of this study is to determine the impact of a new Brain Attack (BrA) protocol on the length of hospitalization and discharge plan.

**Methods:** Single center retrospective chart review of our BrA



database before and after a new BrA protocol implemented on April 2014 in our institution. The major difference in the brain attack protocol was the performance of head computed tomography (CT) scanning before neurological assessment as compared to after. We assessed demographic data, length of hospitalization (LOH) and discharge plan from May 2013 through April 2014 (Pre-BrA-group) as compared to May 2014 through April 2015 (Post-BrA-group).

**Results:** 62 patients (28 in the Pre-BrA-group and 34 in the Post-BrA-group) were included. Both groups were similar in age, sex and risk factors. Mean NIHSS was 7.9 and 7.8 in the Pre-BrA and Post-BrA groups, respectively. Mean LOH for the Pre-BrA-group was 6.9 days with standard deviation (SD) +/- 8.6 and in the Post-BrA-group was 4.9 SD +/- 3.3 days. Stroke patients walking through emergency experienced a 30% reduction in the mean LOH after the new BrA protocol. The mean LOH in stroke patients who received IV tPA in the Pre-BrA-group was 5.6 compare to 6.9 in the Post-BrA group. Patient not receiving IV tPA had a 49% reduction after the new BrA protocol. 61% and 52% of the patients were discharge home in the Pre-BrA and Post-BrA groups, respectively.

**Conclusions-Implications:** This new brain attack protocol demonstrated a reduction in the length of hospitalization of the stroke patients.

## P71.

### Same day urogynecology surgery: rates of acute postoperative urinary retention when using spinal versus general anesthesia

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**Introduction and Objective:** Rates of urinary retention after pelvic floor surgery are quoted at 24% based on inpatient surgery data. However, there is paucity of data regarding postoperative urinary retention (POUR) for outpatient pelvic organ prolapse (POP) vaginal surgery and the effects of spinal anesthesia. We hypothesized that spinal anesthesia was going to be a risk factor for developing POUR. Our objective was to compare postoperative urinary retention (POUR) rates for same day vaginal pelvic floor surgeries when using spinal versus general anesthesia. Our secondary outcome was to identify potential risk factors for PUR.

**Methods:** This was a retrospective review of outpatient POP vaginal surgeries performed in 2014. A standardized voiding trial was performed by backfilling the bladder with 300 ml of saline. A successful trial was if the patient voided two-thirds of the total volume instilled, confirmed by bladder scanner. Our primary outcome was to compare POUR requiring discharge with a Foley catheter between spinal and general anesthesia. Multivariate logistic regression was performed for variables with significance at  $p < 0.1$  at the univariate level.

**Results:** A total of 177 procedures were included, 126 with general

and 51 with spinal anesthesia. The overall POUR rate was 48.9%. For the primary outcome, there was a statistically significant higher rate of POUR in the spinal group (60.8%) compared to the general group (43.7%),  $p = 0.0389$ . However, multivariate logistic regression demonstrated that age  $< 55$  years (adjusted odds ratio [OR] 3.73; 95% confidence interval [CI], 1.31-11.7), diabetes (adjusted OR 4.18, 95% CI 1.04-21.67), and having a cystocele  $\geq$  stage two (adjusted OR 4.23, 95% CI 1.89-10) were the only risk factors for developing POUR.

**Conclusions-Implications:** Acute urinary retention after outpatient vaginal pelvic floor surgery can vary by procedure, but overall is 48.9%. Spinal anesthesia does not contribute to POUR but rates are higher in those women that are younger than 55 years of age, those who have a cystocele  $\geq$  stage two preoperatively, and those with a history of diabetes.

## P72.

### Are rates of success after total vaginal hysterectomy with McCall's culdoplasty for massive uterovaginal prolapse comparable to those with less severe prolapse?

**Introduction and Objective:** Massive uterovaginal pelvic organ prolapse (POP) represents unique challenges to the pelvic surgeon, as surgical correction can be associated with longer operating times, and higher complication rates. Failure rates for total vaginal hysterectomy (TVH) with McCall's culdoplasty have been reported as high as 15%, but data is limited to less severe stages.(1-3) The aim of this study was to compare long-term success of TVH with McCall's culdoplasty in women with massive POP compared to less severe POP.

**Methods:** This was a retrospective review using a urogynecologic database of women undergoing TVH with McCall's culdoplasty from 2005 to 2014. Massive prolapse was defined as exteriorized prolapse with Pelvic Organ Prolapse Quantification system (POPQ) point C, Ba, or Bp  $\geq 50\%$  of total vaginal length. Primary aim was to compare surgical success of massive POP compared to less severe at  $\geq 1$  year, defined as  $<$  stage 2 POPQ and a validated patient improvement satisfaction score of "cured" or "greatly improved."

**Results:** A total of 311 women were included, 38 with massive POP and 273 with less severe POP. Women with massive POP were older (71.6 vs. 61.8,  $p < 0.0001$ ), but similar by body mass index, parity, medical co-morbidities, and prior POP or stress incontinence surgeries. There was no difference in median follow-up (102.5 vs. 117,  $p = 0.2378$ ) or mean estimated blood loss (167.1 vs. 160.1,  $p = 0.6042$ ) for massive versus less severe POP, respectively. There was no difference in the primary outcome of success between massive POP (76.3%) and less severe POP (68.5%,  $p = 0.3553$ ). There was noted to be a higher rate of failure in the anterior vaginal compartment in those with massive POP (18.4% vs. 6.2%,  $p = 0.0168$ ), but no increased failure rate in the apical or posterior compartment. Complication rates up to 6-weeks postoperative were similar for massive and less severe POP (26.3% vs. 18.6%,  $p = 0.3681$ ) and included UTI (15.1%), hematoma (1.3%), emergency

room presentation (1.3%), conversion to laparotomy (0.6%), ureteral kinking from McCall suture (0.3%), readmission (0.3%), cuff cellulitis (0.3%), and vulvar abscess (0.3%). There was no difference in reoperation rates between massive and less severe POP (2.6 vs. 4,  $p > 0.9999$ ).

**Conclusions-Implications:** TVH with McCall's culdoplasty is equally effective for surgical treatment of massive uterovaginal prolapse compared to surgical success of those with less severe POP. Surgeons should consider this traditional surgery for their patients even if they have high stage uterovaginal prolapse.

## P73.

### Resolution of Rectal Prolapse by Vaginal Reconstruction

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**Introduction and Objective:** Rectal prolapse is a disorder of the pelvic floor in which the layers of the rectal mucosa protrude outwards through the anus. Surgical repair is the mainstay of treatment. Options include intra-abdominal procedures such as rectopexy, perineal procedures such as the Delorme and Altemier perineal rectosigmoidectomy. Rectal and vaginal prolapse can often co-exist. However to our knowledge, there are no cases of rectal prolapse resolved by the repair of a compressive enterocele abutting the anterior rectal wall through a vaginal approach. We present a novel case of rectal prolapse that resolved by correction of the vaginal defect.

**Case Presentation:** A 53 year old female with prior history of abdominal hysterectomy, presented to the Urogynecology clinic with complaints of vaginal bulge, urge urinary incontinence and rectal bulge on straining with no fecal incontinence for several years. On physical examination, she was found to have stage 2 anterior, posterior and apical vaginal prolapse and reducible rectal prolapse. Colorectal Surgery (CRS) evaluation was requested, which revealed minimal anterior mucosal prolapse on Valsalva with no full thickness prolapse. MRI defecogram was performed, which demonstrated a large rectocele, enterocele and small bowel prolapsing between the rectum and vagina during the evacuation phase, with no rectal prolapse. The decision to proceed with vaginal prolapse surgery without concomitant rectal prolapse repair was made, as the patient had no fecal incontinence and the degree of rectal prolapse was minimal. On the day of the surgery, 2 months later, she presented with a 2 cm full thickness rectal prolapse with no incontinence. CRS was consulted again, but unavailable. The patient wished to proceed with her planned surgery. It was felt that correcting the anterior rectocele and enterocele, thereby eliminating the descent of the bowel on the anterior rectal wall might cause resolution of the rectal prolapse. She then underwent a sacrospinous ligament fixation with mesh through an anterior vaginal approach, enterocele repair, Moschowitz culdoplasty and posterior colporrhaphy. She had an uneventful postoperative course and noted resolution of

both vaginal and rectal prolapse. At 54 weeks, she continues without any complaints of rectal prolapse which was confirmed on physical examination.

**Conclusions-Implications:** Usually, the choice of surgical approach is tailored to each individual based on anatomy, age, co-morbidity and patient factors. Correcting both vaginal and rectal prolapse at the same time with a minimally invasive approach is an advantage to the patient. Restoring the apical, anterior, posterior vaginal wall anatomy and an enterocele repair through the vaginal route caused resolution of the rectal prolapse. Further research is required as to whether rectal prolapse caused by anterior rectal compression needs an additional procedure or repair of the vaginal prolapse and enterocele alone will suffice.

## P74.

### Dermatofibrosarcoma protuberans with coexisting fibrosarcomatous and giant cell fibroblastoma-like components in the breast of a woman

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**Introduction and Objective:** Dermatofibrosarcoma protuberans (DFSP) is a rare, slow growing, locally aggressive tumor that constitutes 1% of all soft tissue sarcomas. Metastases are rare. Fibrosarcomatous changes have been identified in up to 20% of all cases of DFSP. When these changes make up >5% of the tumor, a diagnosis of fibrosarcomatous DFSP (DFSP-FS) is made. Multiple studies report more aggressive behavior, higher local recurrence rate and increased risk of distant metastases in DFSP-FS.

Giant cell fibroblastoma (GCF), a childhood tumor is thought to be a variant of DFSP, as both tumors have the same clinical appearance, immunohistochemical and molecular features. Herein, we present a case of a 48-year old woman presenting with a 6.4 cm. breast mass. To our knowledge, this is the first case report of a DFSP-FS with a GCF-like component in an adult.

**Case Presentation:** A 48 year-old woman was referred to surgery for evaluation of a right breast mass which had increased in size. She had a history of a biopsy-proven fibroadenoma in the same breast. She reported no pain or changes to the skin of the breast. There was no family history of breast or ovarian cancer. On physical exam, the mass measured approximately 5 cm and was associated with mild erythema of the overlying, stretched skin. A large sebaceous/follicular cyst was clinically suspected and excision was recommended.

Gross examination revealed a round, circumscribed, tan mass which had a homogeneous, glistening cut surface and measured 6.4 cm in maximum dimension. The mass was surrounded by fatty breast tissue and was closest to the superior specimen margin of resection, where it was covered by a thin membrane. Histologic examination showed a spindle-cell neoplasm with areas of delicate fibroblast-like cells arranged in a storiform pattern, as seen in classic DFSP. These areas were strongly and diffusely positive

for CD34. However, distributed throughout the tumor, there were multiple fibrosarcomatous areas showing fascicular architecture, hypercellularity, increased mitotic rate, and near-complete loss of CD34 expression. These fibrosarcomatous areas constituted approximately 70% of the lesion. In addition, a GCF-like component consisting of large, atypical multinucleated cells, was seen. Margins were focally positive. A re-excision of the area around the mass was performed resulting in negative margins.

**Conclusions-Implications:** While DFSP usually presents in the trunk and extremities, breast involvement has rarely been reported. In this case, fibrosarcomatous changes were identified in a large percentage of the lesion, which qualifies for a diagnosis of DFSP-FS. Multiple studies report more aggressive behavior, higher local recurrence rate and increased risk of distant metastases in DFSP-FS. However, there is no full consensus on the clinical behavior of DFSP-FS compared with classic DFSP. In addition, focal areas of GCF-like changes were seen in this case. The relationship between GCF, a tumor seen mostly in children, and DFSP has been suspected since the description of numerous cases of hybrid lesions. In addition, GCF and DFSP have similar clinical behaviors with male predominance, truncal distribution and high local recurrence, and share immunohistochemical and molecular features such as positivity for CD34 and the same t(17;22) translocation. Although previous cases of DFSP-FS with a GCF component have been reported in the literature, this is the first instance of a DFSP-FS with a GCF-like component in the breast of an adult woman. This finding brings attention to the breast as a possible site for DFSP formation and further supports the notion that GCF and DFSP may be variants of the same entity.

**P75.**

**Inflammatory Myofibroblastic Tumor of the Liver: a Mimicker of Malignancy**

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**Introduction and Objective:** The differential diagnosis of a liver mass includes metastatic disease, hepatocellular carcinoma, lymphoma, granulomatous lesions and others. Patients with inflammatory myofibroblastic tumors may also present with a liver mass. Herein, with present the case of a 77 year-old man whose liver mass was initially thought to represent a malignant tumor. The objective of this case report is to highlight the importance of performing a biopsy to establish the correct diagnosis of inflammatory myofibroblastic tumor.

**Case Presentation:** The patient is a 77 year-old man with a history daily alcohol intake who went to see his primary care physician with a chief complaint of weight loss. An MRI revealed a heterogeneous mass in the right lobe of the liver, measuring 8 cm. in maximum dimension with enhancement along the periphery. The pancreas was

atrophic with fatty replacement.

Laboratory studies showed a mildly elevated bilirubin of 1.3 (0.0-1.2 mg/dL), a serum alkaline phosphatase of 227 (39-117 IU/L), an AST of 134 (0-40 IU/L), and an ALT of 91 (0-44 IU/L). A hepatitis panel was negative for Hep A Ab, HBsAg, Hep B Core Ab, and Hep C virus Ab. A PSA was 0.2 (0.0-4.0 ng/mL). A CA 19-9 was elevated at 116 (0-35 U/mL). Smooth muscle antibody was weakly positive at 24. An antinuclear antibody was positive.

A liver biopsy revealed fibrosis with a dense infiltrate of plasma cells and scattered eosinophils. Also present were spindle cells arranged in a storiform pattern. An immunohistochemistry stains for SMA was positive, one for Desmin was focally positive. Stains for ALK and IgG4 were negative. A diagnosis of inflammatory myofibroblastic tumor (IMT) was made.

**Conclusions-Implications:** The etiology of IMTs is unknown and may include infectious agents and autoimmune disease. It is important to differentiate IMT from hepatic lesions such as metastatic disease, hepatocellular carcinoma, lymphoma, granulomatous lesions and others. A biopsy is required to reach the correct diagnosis.

**P76.**

**Seeing is Believing: Breast Metastasis from Vaginal Cancer**

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**Introduction and Objective:** Vaginal carcinomas are rare malignancies accounting for 3% of tumors of the female genital tract. These tumors are locally invasive and can rarely metastasize through the hematogenous route. To our knowledge, breast cancer occurring as a metastasis of a primary vaginal cancer has never been reported. Treatment for this type of malignancy is very challenging, as there is no standard of therapy, however our course of treatment generated a favorable outcome for our patient. We present a novel and unique case of vaginal cancer metastasizing to the breast.

**Case Presentation:** A 66-year old woman presented to the emergency room with a 3-day history of vaginal bleeding. Physical examination revealed a 3 cm distally located vaginal tumor, and a 5cm left breast tumor. Biopsies from both masses revealed identical characteristics. The vagina was favored to be the primary, as both masses demonstrated pure squamous cell elements with no heterogeneity, human papilloma virus positivity, and negative axillary lymph nodes. Since the tumors were mobile, well rounded, and non-fungating, surgical removal was performed first. She underwent robot assisted total laparoscopic hysterectomy, partial vaginectomy, and partial mastectomy. Pathological assessment confirmed the diagnosis of primary vaginal carcinoma stage IVB with metastasis to the breast. She was then treated with 6 cycles of Carboplatin

and Paclitaxel based chemotherapy. Carboplatin was favored over Cisplatin in light of the patient's comorbidities. This was followed by 7 weeks of low dose Cis-platinum chemoradiation to the pelvis. Radiation to the breast was not performed, as the vagina was the primary. She was carefully followed every 3 months and has maintained remission till this day.

**Conclusions-Implications:** Generally, chemoradiation is preferred in the initial management of stage IVB vaginal cancer, as surgery is associated with less favorable outcomes, and obtaining negative margins is challenging. In our patient, surgical removal was performed since the morphology of the tumors demonstrated obtainable and safe margins free, which were free of malignancy. Following surgery, the patient demonstrated an optimal response to a Carboplatin-Paclitaxel based chemotherapy regimen, which has anecdotally been tried for vaginal cancer. Cis-platinum chemoradiation, which has only been validated in a few case series' for vaginal cancer, proved effective in this patient. These options are safe, efficacious, and should be considered when treating vaginal cancer. Large randomized control trials evaluating outcomes of different chemotherapy regimens should be undertaken. The role of chemoradiation for vaginal cancer should also be evaluated with larger studies.

## P77.

### Follicular dendritic cell sarcoma presenting as subcutaneous masses in left chest wall

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**Introduction and Objective:** Follicular dendritic cell sarcoma (FDCS) is a rare neoplasm of follicular dendritic cells (FDC). Since FDCS was first described in 1986, approximately 150 cases have been reported worldwide. The disease usually involves the lymph nodes, especially those of the head and neck, mediastinal and axillary areas. Extranodal sites are involved in almost one-third of the patients. The purpose of this report is to highlight the importance of using immunohistochemistry to definitively follicular dendritic cell sarcoma and avoid misdiagnosis, as many entities may have similar histologic features.

**Case Presentation:** The patient is an 84-year old man who presented with unintentional weight loss of 10 pounds two years after first noticing a lump on his left chest, which he thought was associated with accidental trauma to the area. PET CT revealed two large mobile masses along the left chest wall as well as left axillary lymphadenopathy. One of the axillary lymph nodes was biopsied at an outside institution for diagnosis. The patient underwent excision of the large chest wall masses and remaining enlarged axillary lymph nodes. A diagnosis of FDCS was made.

**Conclusions-Implications:** The non-specific histological appearance of FDCS has resulted in cases being misdiagnosed as inflammatory pseudotumor, ectopic meningioma, malignant

schwannoma, poorly differentiated carcinoma, fibrous histiocytoma, carcinoma showing thymus like elements (CASTLE), and acinic cell carcinoma. A helpful histologic feature suggestive of FDCS is the perivascular distribution of small lymphocytes within the tumor; however, confirmation by immunohistochemistry is required. Our case was positive for FDC-associated antigens CD21, CD23, and D2-40. Other positive markers reported in the literature include FDC marker CD35, clusterin, EGFR, fascin, vimentin, EMA, desmoplakin, and HLA-DR. S100 and CD68 are variably positive.

FDCS has been considered a low grade tumor with a low tendency for recurrence or metastasis, but recent reports have revealed its more aggressive nature. The rarity of the malignancy precludes a better assessment of prognosis and clinical outcome. In our case, there was no evidence of recurrent or metastatic disease one year after excision.

## P78.

### Bleeding to death: When comfort care requires a rapid response

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**Introduction and objective:** The aims of palliative care are to focus on symptom control, improve a patient's quality of life and reserve diagnostic testing and treatments to that which will help a patient achieve their goals for end of life. End stage head and neck cancers have a propensity to erode into surrounding structures, including major vessels such as the carotid artery. When patients present with impending or actual carotid blow-out bleeding, there is an emergent decision to either proceed to surgery or to control anxiety during terminal exsanguination.

**Case Presentation:** A 63yr old male patient presents with shortness of breath, stridor and dysphagia secondary to a 6.5cm x 7.9cm x 5.6cm laryngeal tumor that had eroded through the skin, was compressing the trachea and esophagus, and abutting the external carotid artery on CT angiography of the neck. Following emergency tracheostomy and percutaneous endoscopic gastrostomy tube placement the patient was being stabilized for transfer home. He developed large volume, pulsating blood loss externally from the neck mass, which was initially controlled with pressure application and packing. His hemoglobin fell by 2.4g/dL over six hours requiring transfusion. He was transferred to ICU and discussions ensued regarding his wishes for end of life care, which were to die at home. He was hemodynamically unstable for transfer, requiring vasopressors, therefore the neuro-interventional radiologist performed coil embolization of the right external carotid artery. The next day he proceeded to have a massive carotid artery blow-out bleed and returned to the operating room for coil embolization of the right common carotid artery and right internal carotid artery. This was preceded by a 15 minute balloon occlusion test during which his motor strength, sensation and visual acuity were tested. Following the surgery, the patient remained neurologically intact and



was transferred home with hospice services three days later. The patient died peacefully at home three weeks later.

**Conclusions-Implications:** We present this case to increase awareness of the options for treatment of massive hemorrhage in head and neck cancers, however, these principles can be applied to the treatment of many erosive tumors. For the internist, intensivist or palliative care physician caring for these patients it is vital to plan ahead for impending massive hemorrhage. For surgical versus medical management, we must balance the benefit to the patient against the burden of each treatment, in terms of maintaining quality of life or achieving end of life care goals.

**P79.**

**Mucinous breast carcinoma on the nipple of a man: A case report.**

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**Introduction and Objective:** Male breast cancer is rare, comprising less than 1% of all breast cancers. Furthermore, mucinous carcinoma of the male breast is an exceedingly rare histologic subtype of breast cancer. Risk factors for male breast cancer include hormonal imbalances, BRCA2 mutation and radiation.

**Case Presentation:** We present a case of a 75 year-old man with a history of breast cancer, status post left mastectomy and axillary dissection approximately 30 years ago, who presented with a bloody blister on his right nipple. After a shave biopsy revealed malignancy, he underwent a right modified radical mastectomy and sentinel lymph node biopsy. The resected breast had a 0.4 cm. circumscribed, focally hemorrhagic papule on the tip of the nipple. Microscopically, the papule was composed of neoplastic cells in a mucinous background. The neoplastic cells were positive for immunohistochemical stains with CK7, GATA-3, GCDFF-15, e-cadherin, mammaglobin (focal, minimal) and CK20 (focal, minimal). In addition, the neoplastic cells were positive for ER, PR and HER2-Neu. The histologic features and staining patterns supported the diagnosis of a pure mucinous breast carcinoma, grade 3.

**Conclusions-Implications:** Mucinous carcinoma can be classified as pure or mixed, and typically presents as a retroareolar mass. To our knowledge, this is the first case to present as a papule on the nipple. Most of the information known about this tumor comes from studies of women because this diagnosis in men is rare, although there appears to be many similarities. Mucinous breast carcinoma usually has excellent survival and over 90% are ER and PR positive and HER2-Neu negative. Due to the location and size of the tumor, no additional therapy was deemed necessary despite a lack of data

outlining treatment guidelines; however, given his remote history of contralateral breast cancer and the tumor's triple positive status, which is uncommon, testing for genetic mutations was clinically warranted. No genetic mutations were identified and the patient is doing well one year later.

**P80.**

**Are Autolytic-Type Changes in Surgically Removed Gallbladder Specimens Related to Fixation Delay?**

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**Introduction and Objective:** Specimen autolysis, a form of self-degradation with characteristic histological features, can interfere with pathologic evaluation and diagnosis. <sup>1</sup>The importance of adequate specimen fixation has been previously established. <sup>2</sup>In our institution, we routinely see autolytic-type changes in some surgically removed gallbladders. This study was undertaken to determine whether such changes are related to delay in fixation, and therefore represent an in-vitro (vs an in-vivo) process.

**Case Presentation:** This study is a case control study of 100 gallbladder specimens. Times of removal and fixation were recorded for each specimen, and the total time to fixation was calculated. Specimens were histologically assessed for the presence of autolytic-type changes. The sample was divided into two cohorts, one consisting of specimens with autolytic-type changes and one of specimens without. The group with autolytic-type changes had 44 specimens and a mean time to fixation of 12 hours, and the group without autolytic-type changes had 56 specimens and a mean time to fixation of 8 hours. A one tailed T-test statistical analysis was run, with the null hypothesis being that there was no difference between the mean time to fixation between the cohorts.

**Conclusion-Implications:** Statistical analysis showed with 93% confidence that there is a statistically significant difference between the mean time to fixation of the two cohorts (p value: 0.067). It is therefore likely there is a correlation between autolytic-type changes and longer time to fixation. This study is limited by sample size and a more powerful study may yield more definitive results.



## P81.

### CNS Toxoplasmosis: Unusual initial presentation of Acquired Immune Deficiency Syndrome

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**Introduction and Objective:** Infections of the Central Nervous System (CNS) in patients with human immunodeficiency virus (HIV) are diagnostically challenging due to non-specific presentations and similar findings in cerebrospinal fluid analysis and imaging. Therefore, the diagnosis must be based on a combination of high levels of clinical suspicion with compatible clinical presentations, radiographic findings, and understanding the role of HIV causing such opportunistic infections. We present the case of a patient, with initial non-specific neurologic symptomatology and radiologic presentations, who was later determined to have CNS Toxoplasmosis complicating a newly diagnosed HIV status.

**Case Presentation:** A 63-year-old Hispanic female patient with a known history of hypertension and hyperlipidemia presented to our emergency department complaining of an hour-long progressive altered mental status, acute right-sided hemiplegia and expressive aphasia. Initial neurological evaluation revealed the patient to have involuntary movements of the left upper extremity with bilateral eyelid fluttering and aversive gaze to the left along with urinary and fecal incontinence. Computerized tomography (CT) identified an area of decreased density comprising the left temporal and parietal lobes, which seemed to be consistent with an evolving non-hemorrhagic infarct. Subsequent CT angiography of the head and neck was performed showing no intracranial aneurysms or arterial occlusions. Tissue plasminogen activator (tPA) was not administered due to the suspected seizure-like presentation as well as the already evident ischemic stroke in plain CT. Magnetic resonance imaging (MRI) with and without contrast was ordered which revealed a 2.2 cm left parietal brain mass with irregular peripheral enhancement, central necrosis, associated extensive peripheral edema and mass effect, which was believed to be compatible with glioblastoma multiforme (GBM). Neurologically, patient became asymptomatic within twenty-four hours since admission; however, the presence of leukopenia and increased protein-albumin gap prompted HIV testing, which was positive along with a CD4 count of 44 cells/ $\mu$ L, and 53,959 HIV-1 RNA copies/ $\mu$ L. IgG antibodies against toxoplasmosis were also identified. Ultimately, the patient underwent resection of the mass and the pathology report was consistent with CNS toxoplasmosis. Patient was placed on highly active antiretroviral therapy, appropriate prophylaxis for both *Mycobacterium avium* complex, and *Pneumocystis jirovecii*, and therapy for toxoplasmosis.

**Conclusions-Implications:** As an AIDS-defining condition, Toxoplasmosis, along with other CNS infections in the HIV-infected population, continues to be a significant cause of mortality and morbidity, especially in developing countries. This case demonstrates that HIV-related conditions should be considered in the group of differential diagnoses in patients presenting with atypical stroke symptoms.

## P82.

### Epstein-Barr Virus-associated Diffuse Large B-cell Lymphoma in a Patient with Complete DiGeorge Syndrome status-post Umbilical Cord Blood Cell Transplantation

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**Introduction and Objective:** Patients with primary immunodeficiencies are at increased risk for malignancies, including hematologic ones; however, there are few reports of malignancies associated with DiGeorge syndrome. We herein present a rare case of EBV-positive, post-transplant lymphoproliferative disorder, diffuse large B cell lymphoma in a patient with complete DiGeorge syndrome.

**Case Presentation:** The patient is a 16-year old boy with a history of complete DiGeorge syndrome who was diagnosed shortly after birth and received an unrelated umbilical cord blood transplant at approximately six weeks of age.

Eight years post-transplant, the patient presented with fever, dry cough, loose stools, hypocalcemia, cervical and axillary lymphadenopathy. Splenomegaly was noted. An excisional biopsy of a left axillary lymph node showed an Epstein-Barr virus (EBV) related lymphoproliferative disorder. Rituximab infusions were started; however, the patient did not respond to treatment. A few months later, the patient returned complaining of fever, fatigue and decreased appetite. A CT scan showed new retroperitoneal, paraaortic and porta hepatis lymphadenopathy as well as worsening splenomegaly. A diagnosis of EBV-positive, post-transplant lymphoproliferative disorder, diffuse large B cell lymphoma (DLBCL) was made. Chemotherapy with methotrexate and Ara-C was started and the patient went into remission.

**Conclusions-Implications:** The patient in this case has complete DiGeorge syndrome, seen in only 1% of DiGeorge patients. Patients with complete DiGeorge syndrome are athymic and extremely susceptible to life threatening infections. The syndrome is usually lethal in infancy. The unrelated cord blood transplant was done with the purpose of transferring mature T-cells from the donor to the recipient. However; although initial chimerism was achieved, fewer than 100 T cells/mm<sup>3</sup> were present 2 years after transplantation. Furthermore, when patients with complete DiGeorge anomaly receive hematopoietic transplants from EBV-seronegative donors, T-cells with receptors effective against EBV likely are not present in the initial inoculum, making these patients susceptible to EBV infections and EBV-driven lymphomas.

**P83.**

**Staphylococcus Lugdenensis: Rare Culprit of Endovascular Stent Infection**

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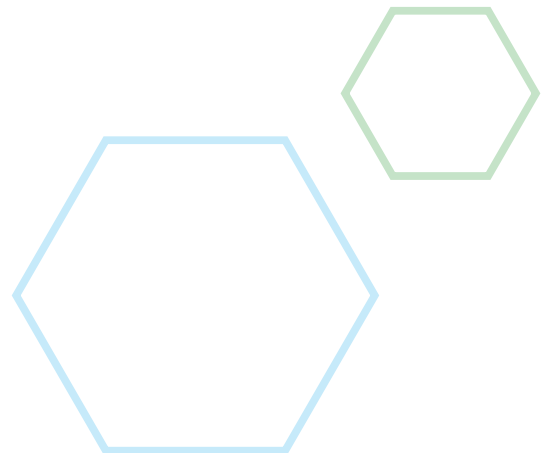
Kendall Regional Medical Center

**Introduction and Objective:** *Staphylococcus lugdenensis* is unique among coagulase negative Staphylococci due to its high virulence and pathogenicity. It has been described as one of the rare pathogens causing infective endocarditis, but we are presenting a unique case of *S. lugdenensis* endovascular stent infection.

**Case Presentation:** Our patient is a 70-year-old gentleman with a complex medical history including diabetes and severe peripheral vascular disease who was admitted to the hospital with a non-healing ulcer of the left foot. Six months prior, the patient had undergone angioplasty and stenting of the left superficial femoral artery. On physical examination, a 3.5 x 3 cm ulcer with an eschar was noted on the plantar aspect of left foot below the first metatarsal head with bluish discoloration of the left first three digits. Left posterior tibial and dorsalis pedis pulses were non-palpable. CT Angio Runoff showed occlusion of the long segment stent involving the entire left superficial femoral artery and supra articular popliteal artery with distal reconstitution. Patient underwent emergent open exploration of the left femoral artery. He was found

to have a completely occluded stent, freely floating with pus and thrombus and inflammatory encasement of the distal common femoral artery extending to the superficial femoral artery. A left femoral to below knee popliteal artery bypass was performed with removal of the intravascular stent. Surgical cultures from intravascular and perivascular purulence along with the metal stent all grew coagulase negative staphylococcus speciated as a pan-sensitive *S. lugdenensis*. The patient was started on IV Oxacillin to complete a 4-week course. Subsequent blood cultures did not show any growth. Patient's condition improved and he was sent to rehabilitation for further recovery.

**Conclusions-Implications:** *Staphylococcus lugdenensis* has been reported as a cause of skin and soft tissue infections, prosthetic valve endocarditis and prosthetic device related infections, however, infections of vascular prosthesis are relatively uncommon. It is known to have the ability to form biofilms, which increases its affinity for prosthetic devices. Only a handful of cases have been reported of endovascular stent infection due to *Staphylococcus lugdenensis*. The recognition of vascular prosthetic infection can be challenging as the clinical presentation is often asymptomatic but may include a draining wound sinus, peri-graft exudate or a pseudo-aneurysm at the anastomotic site. Fortunately, *S.lugdenensis* is generally susceptible to most antimicrobial agents. Due to the nature of this pathogen, clinicians must have high suspicion, in order to promptly and adequately initiate treatment to prevent significant sequelae.

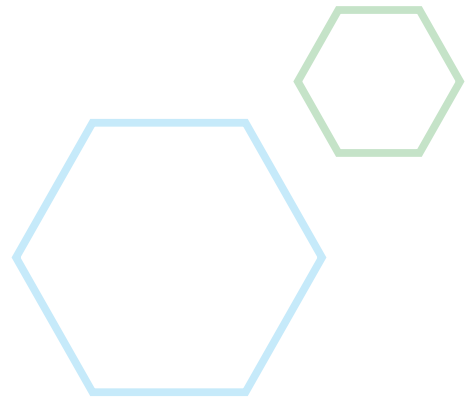


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