Department of Medicine
Lewis Katz School of Medicine at Temple University

2017 Annual Fellows, Residents and Medical Students Research Symposium

Sol Sherry Awards for Excellence in Research

Wednesday, June 7, 2017

Medical Education and Research Building
Luo Commons

The Fellows and Residents Research Forum was initiated over 35 years ago to provide the Fellows and the Residents in the Department of Medicine with an opportunity to present their research effort. The Forum is a reflection of the ongoing research activities in the Department, and a year-end summation of the projects carried out by the Fellows and Residents.

Dedication

Dr. Sol Sherry
1916-1993

Sol Sherry, M.D., joined Temple University School of Medicine as professor and chairman of the Department of Medicine in 1968. In 1970, Dr. Sherry founded and served as director of the University's Specialized Center for Thrombosis Research, the largest of its kind in the United States, which was later named in his honor. He served as dean of the School of Medicine from 1984-86. He was a recipient of an honorary doctor of science degree, the University's first Distinguished Professor and was honored with the establishment of the Sol Sherry Chair in Medicine.

For his contributions to medical research, teaching and patient care, Dr. Sherry was the recipient of other numerous awards and honors. He was Master of the American College of Physicians and The John Phillips Memorial Medalist of the American College of Physicians; a Fellow of the Royal College of Physicians (London), and recipient of the Robert P. Grant Medal of the International Society on Thrombosis and Hemostasis--a society which he founded in 1977. Dr. Sherry also received awards from the American Heart Association, the Philadelphia County Medical Society, the Texas Heart Institute and the Swedish Society of Cardiology.

Fellows, Residents and Medical Students Research Symposium
Wednesday, June 7, 2017
Medical Education and Research Building

8:00 – 11:30 AM	**Oral Presentations** **Fellows – Room 217** **Residents – Room 219**
11:30 – 12:45	**Luncheon, Poster Viewing and Poster Discussions (Luo Commons)**
12:45 PM	**Presentation of Awards to Fellows and Residents (Luo Commons)**

Oral Presentations – Fellows

Chair: A. Koneti Rao, MD
Judges: Drs. Peter Axelrod, Phil Cohen, Frank Friedenberg, Jeffrey Jacobson, Kevin Williams

8:00 AM	**Zubair Malik, MD (Gastroenterology)** *Gastric Per Oral Endoscopic Myotomy (G-POEM) for the Treatment of Refractory Gastroparesis: Early experience*	**Abstract #20**
8:15 AM	**Saurav Chatterjee, MD (Cardiology)** *Impact of Thrombolysis and Use of Inferior Vena Cava Filter Insertion in the Treatment of Saddle Pulmonary Embolus*	**Abstract #2**
8:30 AM	**Mohammad Kousha, MD (Thoracic Medicine)** *Lung Ultrasound Evaluation Immediately Post Placement of Endobronchial Valves in Patients with Advanced Emphysema*	**Abstract #16**
8:45 AM	**Devin Weber, MD (Infectious Diseases)** *Ceftaroline versus Vancomycin+/- Daptomycin for the Treatment of MRSA Endocarditis*	**Abstract #44**
9:00 AM	**James Gerson, MD (Hematology/Oncology)** *Outcomes of Patients with Double-Hit Lymphoma who Achieve First Complete Remission*	**Abstract #5**
9:15 AM	**Rahul Kataria, MD (Gastroenterology)** *Distal Esophageal Impedance (DEI) during High Resolution Esophageal Manometry with Impedance (HREMI) Predicts Presence and Length of Barrett's Esophagus (BE)*	**Abstract #15**
9:30 AM	**Charles Nicolais, MD (Cardiology)** *Temple Cardiogenic Shock Quality Improvement Initiative: Introduction of a Novel Multidisciplinary Algorithmic Approach towards Managing Patients with Cardiogenic Shock*	**Abstract #28**
9:45 AM	**Break**	
10:00 AM	**Jennifer Y. So, MD (Thoracic Medicine)** *Seasonal and Regional Effects on COPD Exacerbation in Patients without Significant Cardiovascular Risk*	**Abstract #37**
10:15 AM	**Jonathan Gotfried, MD (Gastroenterology)** *Moviprep Improves Rates of Successful Colonoscopy and Length of Stay Compared to GoLytely in the Inpatient Hospital Setting*	**Abstract #8**
10:30 AM	**Lindsay Jablonski, MD (Infectious Diseases)** *Infectious Complications of Bronchial Stenosis in Lung Transplant Recipients*	**Abstract #11**

10:45 AM	**Lavanya Viswanathan, MD (Endocrinology)** *Immunosuppressive Therapy in Treatment of Refractory Hypoglycemia in Type B Insulin Resistance - Case Report with a Diagnostic Dilemma*	**Abstract #43**
11:00 AM	**Alexis Zavitsanos, MD (Rheumatology)** **Todd Hasenstein (Podiatry)** *Concordance of the Microscopic Analysis of Joint Aspirate for the Diagnosis of Gout*	**Abstract #45**
11:15 AM	**Chethan Ramamurthy, MD (Hematology/Oncology)** *Are We Still Adjusting to Multigene Panel Testing? An NCI-designated Cancer Center's 2-year Experience*	**Abstract #30**
11:30 AM	**Muhammad A. Shafqet, MD (Gastroenterology)** *Active Bleeding Detected during CT Angiography is an Independent Predictor of Mortality*	**Abstract #35**

Oral Presentations – Residents

Chair: Henry Parkman, MD
Judges: Drs. Roberto Caricchio, David Essex, Henry Parkman, Ajay Rao, Rafik Samuel

8:00 AM	**Eli Miller, MD (Endocrinology)** *The Effect of Eating on Glycemic Control Among Critically-ill Patients Receiving Continuous Intravenous Insulin*	**Abstract #26**
8:15 AM	**Justin Field, MD (Gastroenterology)** *Quantifying Areas of Concern on Volumetric Laser Endomicroscopy Does Not Predict Dysplasia Detection During Surveillance of Barrett's Esophagus*	**Abstract #4**
8:30 AM	**Aaron Lee, MD (Cardiology)** *Contemporary Practice and Cardiovascular Outcomes After Percutaneous Peripheral Vascular Intervention: A Report from the National VA-CART PVI Registry*	**Abstract #19**
8:45 AM	**Seema Malkana, DO (Rheumatology)** *Macrophage Activation Syndrome or Acquired Hemophagocytic Lymphohistiocytosis in Adults: A Case Series of Demographics, Systemic Insults, and Survivorship Characteristics at an American Academic Medical Center*	**Abstract #21**
9:00 AM	**John Harwood Scott, MD (General Internal Medicine)** *Increasing Utilization of Low Dose CT Chest for Lung Cancer Screening. Part I: Finding Our Target Population*	**Abstract #33**
9:15 AM	**Gabrielle Dawkins MD, MPH (Gastroenterology)** *Risk Factors for Failure to Return after a Poor Preparation Colonoscopy: Experience in a Safety-net Hospital*	**Abstract #3**
9:30 AM	**Brooke Heyman, MD (Thoracic Medicine)** *Greater Number of Teeth in COPD Patients with Poor Dental Health Correlates with Worse Daily Respiratory Symptoms*	**Abstract #10**
9:45 AM	**Break**	
10:00 AM	**Amy Phillips, MD (Endocrinology)** *Effects of a Medical Weight Loss Intervention on Quality of Life in Overweight or Obese, HIV Infected Subjects with Type 2 Diabetes*	**Abstract #29**
10:15 AM	**Butros Toro, MD (Gastroenterology/Dermatology)** *Avoiding Food Allergens Associated with Type 4 Hypersensitivity Reactions Improves Symptoms of Irritable Bowel Syndrome: Long Term Follow-Up*	**Abstract #42**

10:30 AM	**Sean Moss, MD (Infectious Diseases)** *Increasing Awareness and Availability of Respiratory Viral Polymerase Chain Reaction Testing to Shorten Time to Diagnosis: An Inpatient Quality Improvement Project*	**Abstract #27**
10:45 AM	**Jessica L. Barlow, DO (Rheumatology)** *Sympathetic Joint Effusions in an Urban Hospital*	**Abstract #1**
11:00 AM	**Satyajit Reddy, MD (Cardiology)** *National Rates of Inferior Cava Filters Placed for Prophylaxis in Patients without Venous Thromboembolism*	**Abstract #31**
11:15 AM	**Jaspreet S. Suri, MD (Gastroenterology)** *Elevated Methane Levels in Small Intestinal Bacterial Overgrowth Suggests Delayed Small Bowel and Colonic Transit*	**Abstract #41**

Poster Presentations – Fellows

Chair: Marissa Blum, MD

Judges: Drs. Marissa Blum, Wissam Chatila, Avrum Gillespie, Sharon Herring, Iris Lee, Dan Rubin

Katherine Joyce, MD (Endocrinology) — **Poster Board #1**
Atypical Carcinoid in Men1 Syndrome: A Case Report — **Abstract #13**

Jessica Sterling, MD (Gastroenterology) — **Poster Board #2**
Venous Thromboembolism Remains a Significant Complication for Hospitalized Patients with Inflammatory Bowel Disease — **Abstract #39**

Kamala Gordon, MD, MBA (Geriatrics) — **Poster Board #3**
The Effects of Smoking Environment on Quality of Life in Nursing Homes Residents — **Abstract #7**

Pooja Ghatalia, MD (Hematology/Oncology) — **Poster Board #4**
The Evolution of Clinical Trials in Renal Cell Carcinoma: A Status Report for 2013-2016 from the ClinicalTrials.gov Website — **Abstract #6**

Lindsay Jablonski, MD (Infectious Diseases) — **Poster Board #5**
Clinical Experience with Telavancin for Treatment of Methicillin-resistant Staphylococcus Aureus (MRSA) Bacteremia — **Abstract #12**

Abhijana Karunakaran, MD (Endocrinology) — **Poster Board #6**
Oral Iodine for Treatment of Decompensated Hyperthyroidism in Methimazole Induced Cholestatic Liver Injury — **Abstract #14**

Alexis Zavitsanos, MD (Rheumatology) — **Poster Board #7**
Assessing and Improving Immunization Status in Patients with Rheumatoid Arthritis — **Abstract #46**

Jennifer Y. So MD (Thoracic Medicine) — **Poster Board #8**
Seasonal and Regional Effects on Systemic Inflammation in Patients with COPD — **Abstract #38**

Poster Presentations – Residents

Chair: Marissa Blum, MD

Judges: Drs. Serban Constantinescu, Adam Ehrlich, Won Han, Brian O'Murchu, Anuradha Paranjape, Ellen Tedaldi

Xiaolei Chen, MD (General Internal Medicine) — **Poster Board #9**
Improving Osteoporosis Screening using a Specialized Order Set in the Electronic Health System — **Abstract #36**

Jeevan Kumar, MD (Cardiology) — **Poster Board #10**
The Incidence and Mortality of Cardiogenic Shock in Patients Admitted with Acute Decompensated Systolic Heart Failure — **Abstract #18**

Eli Miller, MD (Endocrinology) — **Poster Board #11**
Diabetic Myonecrosis: A Rare Complication of a Common Disease — **Abstract #25**

Andrew Meillier, MD (Gastroenterology) — **Poster Board #12**
Scopolamine Patch for Nausea and Vomiting in Refractory Gastroparesis: A Prospective Case Series — **Abstract #24**

Jaspreet S. Suri, MD (General Internal Medicine/Dermatology) — **Poster Board #13**
Common Antibiotics Leading to an Uncommon Drug Reaction: A Case Report — **Abstract #40**

Robert Marron, MD (Thoracic Medicine) — **Poster Board #14**
Daily Respiratory Symptoms Based on Degree of Airflow Obstruction in Patients with COPD — **Abstract #22**

Robert Marron, MD (Thoracic Medicine) — **Poster Board #15**
Impact of Nebulized Long-Acting Beta Agonists on Daily Symptoms of COPD Patients — **Abstract #23**

Tanya Reznick, MD (Endocrinology) — **Poster Board #16**
Predicting the Risk of Thyroid Cancer with Sonographic Patterns of Thyroid Macrocalcifications — **Abstract #32**

Jennifer Kraft, MD (Thoracic Medicine) — **Poster Board #17**
Rate of Decline in FVC in Non-IPF Pulmonary Fibrosis after Anti-fibrotic Initiation — **Abstract #17**

Poster Presentations – Medical Students

Chair: Marissa Blum, MD

Judges: Drs. Paraq Desai, Leilani Lee

Jason Heckert, MD (Gastroenterology) **Poster Board #18**
Granisetron Transdermal System for Gastroparesis: A Prospective Study using the GCSI-Daily Diary **Abstract #9**

Shelby R Sferra, MPH (Thoracic Medicine) **Poster Board #19**
Online Decision Aid vs. Option Grid in Shared Decision Making Appointment Prior to Lung Cancer Screening **Abstract #34**

Abstract #1

Sympathetic Joint Effusions in an Urban Hospital

Barlow JL and Tan IJ

Introduction: Sympathetic joint effusion is a non-inflammatory collection of synovial fluid that presents as a painful, swollen joint concerning for septic or inflammatory arthritis. Arthrocentesis reveals a transudative, sterile synovial fluid with white blood cell count of less than 200 cells/mm3. Sympathetic joint effusion is a rheumatologic entity that has not been well defined in the medical literature, and our clinical observation suggests that this knowledge gap has led to lack of recognition and misdiagnosis.

Methods: A retrospective chart review was performed on charts of 87 patients age 18 and older admitted to Temple University Hospital with a joint effusion between 1/1/2010 and 12/10/2016 whose synovial fluid analysis showed WBC count of less than 200 cells/mm3. Data analysis includes evaluation of incidence, frequency, as well as patient characteristics in order to look for statistically significant relationships between the variables.

Results: Final results are pending completion of data collection and analysis. Expected results include characterization of associated conditions and potential triggers for sympathetic effusion, as well as common features of this phenomenon. We will use these results to propose criteria which may assist clinicians in readily identifying this entity.

Conclusion: The purpose of this study is to examine conditions associated with and potential triggers for sympathetic joint effusion. The data revealed by this study will fill a knowledge gap in the medical literature, as well as assist clinicians in more readily recognizing sympathetic joint effusions.

Impact of Thrombolysis and Use of Inferior Vena Cava Filter Insertion in the Treatment of Saddle Pulmonary Embolus

Chatterjee A and Bashir R

Background: Saddle pulmonary emboli (saddle PE) are often seen in patients without hemodynamic compromise. It remains unknown if interventions in these patients in the form of thrombolytic therapy and/or insertion of inferior vena caval filters (IVCF) impact the short-term mortality.

Methods: The Nationwide Inpatient Sample (NIS) database was used to identify all patients admitted with a principal diagnosis of saddle embolus (ICD 9 CM code 415.13) from 2011-2013. Thrombolytic use and IVCF insertion were assessed using validated procedure codes 99.10 and 38.7 respectively. In-hospital mortality rates were assessed in patients without cardiogenic shock (ICD 9 CM 785.51).

Results: A total of 3162 patients (weighted N=15,810) were hospitalized for saddle emboli with 87 (2.75%) in cardiogenic shock. Raw in-hospital mortality was significantly higher in saddle PE patients without shock (Odds ratio OR 1.32; 95% CI 1.09-1.60, p=0.005) in comparison with all PE patients without shock. There was a trend of lower mortality with thrombolytic use (N=12.6%)(OR 0.96; 95% CI 0.79-1.17, p=0.695), but mortality was higher with use of IVCF (N=28.81%) (OR 1.25; 95% CI 1.03-1.52, p=0.024).

Conclusions: In this observational study, hemodynamically stable saddle PE was associated with significantly higher in-hospital mortality which was favorably impacted with thrombolytic therapy, but worse with placement of IVCF. Additional prospective studies are indicated to reassess role of IVCF in these patients.

Abstract #3

Risk Factors for Failure to Return after a Poor Preparation Colonoscopy: Experience in a Safety-net Hospital

Toro B, Dawkins G, Friedenberg FK, Ehrlich AC

Introduction: Inadequate bowel preparation for a colonoscopy is common, and patients are asked to return for a repeat colonoscopy. Certain socioeconomic factors are associated with bowel preparation quality. The goal was to identify risk factors associated with patient adherence to recommendations for a repeat colonoscopy after having a suboptimal bowel preparation.

Methods: We queried the endoscopy database at our institution from January 2013 to March 2015 to identify patients who underwent a colonoscopy with a recommendation to return for a repeat procedure within 1 year due to poor bowel preparation. We excluded patients who did not need a repeat exam or who had a diagnostic procedure. Demographic, socioeconomic, and procedural data was recorded.

Results: Three hundred ninety-seven patients (48.9% women) were identified. One hundred sixty-four patients did not return for a repeat procedure. Patients who returned were slightly older (58.9 vs 57.2 years, p=0.046). Multivariate regression modeling examined independent factors that might predict returning. Gender, primary language, anesthesia type, ASA classification, open access status, and insurance type did not predict return (all p> 0.05). Patients over 60 were more likely to return (OR=1.71, 95%CI 1.09-2.66). Non-Caucasian patients were more likely to return trending towards significance (OR=1.84, 95%CI 0.997-3.39).

Conclusions: In this study, 41.3% of patients did not return for a repeat colonoscopy. Older age and non-Caucasian race were predictors of returning. Insignificant factors were insurance type and primary language. The need remains to identify the factors associated with non-compliance to improve the return rate for patients with inadequate initial screening.

Abstract #4

Quantifying Areas of Concern on Volumetric Laser Endomicroscopy Does Not Predict Dysplasia Detection during Surveillance of Barrett's Esophagus

Field J, Baskharoun M, Smith M

Background: Endoscopic surveillance of Barrett's esophagus (BE) is performed to detect progression to dysplasia and neoplasia. The current standard of 4-quadrant biopsies every 1-2 cm leaves a large percentage of tissue unsampled. An emerging technique for diagnosis and surveillance of BE, Volumetric Laser Endomicroscopy (VLE), provides real-time cross-sectional images of a 6 cm segment of BE. Our aim was to assess whether the quantity of areas of concern (AOC) was predictive of finding dysplasia on histopathology.

Methods: Patients undergoing EGD for surveillance of at least 1 cm of untreated, non-nodular BE between 5/2014 and 7/2016 were included. Tissue sample methods included standard biopsies, VLE targeted biopsies, and transepithelial brush biopsies.

Results: 47 patients were included for analysis (68% male, mean age 60.8). Mean number of AOCs was not significantly different in non-dysplastic cases versus dysplastic cases (2.57 +/- 1.66 vs. 2.92 +/- 1.81, respectively, $p = 0.50$). Density of AOCs actually was higher for non-dysplastic patients than for dysplastic patients (1.31 +/- 1.61 glands/cm vs. 0.64 +/- 0.61 glands/cm, respectively; $p = 0.01$). A large number of patients with BE length > 6 were found to have dysplasia. In a separate analysis excluding these patients to eliminate this potential bias, we found similar results.

Conclusion: These data strongly suggest that neither the absolute number of AOCs nor their concentration within a BE segment predicts finding dysplasia. Instead of quantity, it may be that other characteristics of individual AOC's may be predictive of the presence of dysplasia, warranting future study.

Outcomes of Patients with Double-Hit Lymphoma Who Achieve First Complete Remission

Landsburg DJ, Falkiewicz MK, Maly J, Blum KA, Howlett C, Feldman T, Mato AR, Hill BT, Li S, Medeiros LJ, Torka P, Hernandez-Ilizaliturri F, Reddy NM, Singavi A, Fenske TS, Chavez JC, Kaplan JB, Behdad A, Petrich AM, Bast MA, Vose JM, Olszewski AJ, Costa C, Lansigan F, Gerson JN, Barta SK, Calzada O, Cohen JB, Lue JK, Amengual JE, Rivera X, Persky DO, Peace DJ, Nathan S, Cassaday RD

Purpose: Patients with double-hit lymphoma (DHL) rarely achieve long-term survival following disease relapse. Some patients with DHL undergo consolidative autologous stem-cell transplantation (autoSCT) to reduce the risk of relapse, although the benefit of this treatment strategy is unclear.

Methods: Patients with DHL who achieved first complete remission following completion of front-line therapy with either rituximab plus cyclophosphamide, doxorubicin, vincristine, and prednisone (R-CHOP) or intensive front-line therapy, and deemed fit for autoSCT, were included. A landmark analysis was performed, with time zero defined as 3 months after completion of front-line therapy. Patients who experienced relapse before or who were not followed until that time were excluded.

Results: Relapse-free survival (RFS) and overall survival (OS) rates at 3 years were 80% and 87%, respectively, for all patients (n = 159). Three-year RFS and OS rates did not differ significantly for autoSCT (n = 62) versus non-autoSCT patients (n = 97), but 3-year RFS was inferior in patients who received R-CHOP compared with intensive therapy (56% v 88%; P = .002). Three-year RFS and OS did not differ significantly for patients in the R-CHOP or intensive therapy cohorts when analyzed by receipt of autoSCT. The median OS following relapse was 8.6 months.

Conclusion: In the largest reported series, to our knowledge, of patients with DHL to achieve first complete remission, consolidative autoSCT was not associated with improved 3-year RFS or OS. In addition, patients treated with R-CHOP experienced inferior 3-year RFS compared with those who received intensive front-line therapy. When considered in conjunction with reports of patients with newly diagnosed DHL, which demonstrate lower rates of disease response to R-CHOP compared with intensive front-line therapy, our findings further support the use of intensive front-line therapy for this patient population.

The Evolution of Clinical Trials in Renal Cell Carcinoma: A Status Report for 2013-2016 from the ClinicalTrials.gov Website

Ghatalia P, Pisarcik D, Koenigsberg R, Handorf EA, Geynisman DM, Zibelman M

Background: We previously published a snapshot analysis of clinical trials in RCC using the publicly available ClinicalTrials.gov registry. Here we present a 3 year update in order to understand the current trends in RCC clinical research, to identify opportunities for improvement, and to compare this data to the landscape in 2013.

Methods: The Website's advanced search function was used to search "open studies", "interventional" and "age≥18". Basket trials with ≥7 tumors with non-RCC tumor histologies, terminated studies and pediatric studies were excluded.

Results: We locked our search on May 26, 2016 and 165 trials were eligible, compared with 169 trials on Sep 25, 2013. More clinical trials in 2016 compared to 2013 used immunotherapy (IT) alone or in combination with other drugs (24.2 % vs 10.7%, p=0.001), and the use of targeted therapy alone (TT) declined (32.9% vs 47.9%, p=0.005). IT alone was used in 15.2% of current trials, compared to 5.96% in 2013. TT+IT combination trials more than doubled (6.7% vs 2.3%, p=0.07). The number of trials with treatment in neoadjuvant/adjuvant settings in 2016 and 2013 were similar (9.7% vs 10.6%, p=0.77), respectively. Compared to 2013, the number of trials with non-clear cell histology remained low (n= 10). Many more trials were sponsored by pharmaceutical industry in 2016 vs 2013 (41.5% vs 16.0%, p=<0.001).

Conclusion: More clinical trials included immunotherapy in 2016 compared to 2013, and there was a significant increase in industry sponsored trials. More studies in (neo)adjuvant settings and for non-clear cell histologies are needed.

The Effects of Smoking Environment on Quality of Life in Nursing Homes Residents

Kamala Gordon MD MBA

Objective: To determine the perceived quality of life in a diverse population of elderly adults in a smoking verses non-smoking environment. Quality of life characterizes an individual's personal evaluation of his or her life. Low quality of life and depression are associated with higher odds of smoking initiation and lower odds of smoking cessation. Quality of life encompasses non-medical aspects of a person's life, such as satisfaction with social, psychosocial being, religion, and the physical environment. Second hand smoke appears to be negatively associated with quality of life.

Methods: DEMQOL version 4 is a patient reported outcome measure that is designed to enable the assessment of health-related quality of life of people with dementia. Using the MMSE (mini mental status exam) and DEMQOL version 4 (dementia quality of life), which was proven effective in patients with MMSE >10 face-to-face interviews were conducted to determine perceived quality of life. A written consent was provided which explained the details of the study and risks involved in participating. Participants were selected to complete the DEMQOL version 4 questionnaire if their MMSE>10. Subjects were asked if being in a smoking facility affected their quality of life and if they ever smoked. The population studied were nursing home residents above the age of 65 with MMSE greater than 10 in Belvedere Nursing home (smoking facility) and Wallingford Nursing Home (non-smoking facility), 10 at each one. It took approximately 20 minutes to complete each questionnaire with face-to-face interviews. The participants were randomly selected. An unpaired T-test was done to compare the two populations.

Results: At Belvedere Nursing Home (smoking facility) 8 patients were identified who quit smoking, 1 current smoker and 1 who never smoked. At Wallingford Nursing Home 7 patients were identified who quit smoking and 3 who never smoked. At Belvedere NH 5 patients stated that smoking had no effect on their quality of life, 3 preferred non-smoking and 2 preferred smoking facility. At Wallingford NH 7 preferred non-smoking, 2 preferred smoking facility and 1 said it made no difference whether smoking or non-smoking. The Quality of Life was higher at Belvedere NH (smoking facility) combined than at Wallingford NH (non smoking facility). Fifty percent of the patients at the smoking facility stated that being in a smoking environment did not have a significant impact on their quality of life. Whereas, 70% of the patients who lived at a non-smoking facility preferred non- smoking. The difference of the mean between these nursing homes was a fraction to the mean absolute deviation and Quality of life was determined not to be statistically significant between the two. The two-tailed P value equaled 0.6963 by conventional criteria, this difference is considered to be not statistically significant and a 95% confidence interval of the difference from -0.8594 to 1.2594.

Conclusion: This study presents important insights into the health related quality of life of patients living in smoking verses non-smoking facility. Although the health related quality of life as determined by the DEMQOL version 4 was slightly higher at a facility that allowed smoking. The health related quality of life was not statistically significant. However, majority of patients living in a non-smoking facility preferred non-smoking.

Abstract #8

Moviprep Improves Rates of Successful Colonoscopy and Length of Stay Compared to GoLytely in the Inpatient Hospital Setting

Gotfried J and Ehrlich A

Introduction: Colonoscopy performed in the inpatient setting is often associated with poor bowel preparation, reduced exam completion rates, and increased length of stay (LOS). Low-volume bowel preparation has been associated with improved patient satisfaction and exam completion rates. We undertook a quality improvement project to examine the burden of incomplete bowel preparations using GoLytely and assess improvement after switching to lower volume Moviprep.

Methods: After successfully petitioning to get Moviprep on formulary, we conducted a retrospective chart review at our academic center to compare patients who underwent colonoscopy with GoLytely from Mar-Jun 2015 and patients who underwent colonoscopy with Moviprep from Mar-Jun 2016. Cases were excluded if patients received a preparation for any indication other than colonoscopy (e.g. pre-operative bowel cleansing). Of the remaining cases, inpatient records were reviewed to determine demographic, procedure-related, and hospital admission data. Data was analyzed using standard t-tests, Chi-square, and multivariate logistic regression with SPSS 23.0.

Results: Overall, 233 patients were included in the analysis with 128 patients (55%) receiving MoviPrep and 105 patients (45%) receiving GoLytely. There was no difference between these two groups in age, BMI, or gender breakdown. Use of MoviPrep was far more likely to result in successful completion of the intended procedure compared to GoLytely (85.2% vs 52.4%, $p<0.001$). MoviPrep patients failed to complete drinking the preparation 11.4% of the time (vs 25.8% in the GoLytely group). This resulted in the extension of the length of stay by a total of 10 extra days in the MoviPrep group compared to 30 extra days in the GoLytely group. When correcting for the total number of procedures done in each group, this corresponds to a savings of 21 total hospital days per 100 attempted procedures. Additionally, only 4% of the MoviPrep patients needed an outpatient procedure because the patient did not complete the inpatient prep or due to a poor prep compared to 18.3% in the GoLytely group. In multivariate regression, use of MoviPrep compared to GoLytely remained an independent predictor for successful colonoscopy (OR=4.10, 95% CI: 2.1-7.9) when controlling for age, BMI, gender and use of opiates.

Conclusion: The use of MoviPrep resulted in an increased colonoscopy completion rate compared to GoLytely. This reduced the overall LOS and also reduced the number of outpatient colonoscopies needed upon discharge. In multivariate regression, the use of Moviprep was a strong and independent predictor of having a successful colonoscopy. Ongoing cost analysis is expected to show a significant overall cost savings to the hospital despite increased cost of the medication. We are strongly advocating this formulary change be made permanent in our hospital.

Granisetron Transdermal System for Gastroparesis: A Prospective Study using the GCSI-Daily Diary

Heckert J, Schey R, Parkman H

Granisetron transdermal system (GTS; Sancuso®), a patch delivering a 5-HT_3 receptor antagonist, has been shown to improve nausea and vomiting in gastroparesis. Recent FDA guidance on gastroparesis suggests daily scoring of symptoms to show efficacy.

Aim: Determine the efficacy of GTS in improving symptoms of gastroparesis in patients with gastroparesis using a daily symptom diary for gastroparesis.

Methods: Symptomatic patients with diabetic or idiopathic gastroparesis with nausea and/or vomiting were enrolled. Gastroparesis Cardinal Symptom Index Daily Diary (GCSI-DD) captured severity of symptoms at baseline for one week and during two weeks of treatment with GTS.

Results: 14 patients (age 41.5±17 years; 13 females) with refractory gastroparesis (5 idiopathic, 9 diabetic) participated in this open label study. Nausea, early satiety, postprandial fullness, abdominal pain, GCSI-DD composite score, and overall symptom severity significantly improved ($p<0.05$) during treatment when compared to the baseline week. Nausea and early satiety significantly decreased on day five ($p<0.01$) of treatment. Episodes of vomiting did not significantly change. Side effects included pruritus (2 patients) and redness (1) at the patch site, headache (1), constipation (1), and poor patch adherence (5).

Conclusions: GTS significantly reduced nausea severity in patients with gastroparesis. There were also significant improvements in early satiety, postprandial fullness, and abdominal pain. Improvement for nausea and early satiety occurred on the fifth day of treatment. Thus, GTS has a therapeutic effect on nausea, as well as other gastroparesis symptoms, in patients with gastroparesis as captured using a daily diary for gastroparesis.

Greater Number of Teeth in COPD Patients with Poor Dental Health Correlates with Worse Daily Respiratory Symptoms

Heyman B, Gaeckle N, Criner A, Criner G

Rationale: In COPD subjects, poor dental health correlates with severity of disease assessed by FEV1, and it's been shown that dental care can decrease exacerbations. This study is a prospective evaluation of how certain dental health indices are correlated with daily respiratory symptoms in COPD subjects.

Methods: Subjects >40 years old with stage 3-4 COPD and >10 pack year smoking history were included. Exclusion criteria: exacerbation within 4 weeks requiring steroids or antibiotics, edentulous subjects. At initial visit, dental exam was performed, including counting teeth and calculating plaque index (PI). Oral Health Impact Profile (OHIP) questionnaires were completed. COPD subjects documented symptoms of breathlessness (BORG), cough, sputum, and wheeze in a daily journal. Correlations with dental indices and daily COPD symptoms were drawn with linear regression. COPD subjects were compared to controls with t-test.

Results: 18 COPD subjects followed for total 1158 patient days. 10 controls. COPD subjects have fewer teeth and worse OHIP scores than healthy controls. There's no difference in PI. Number of teeth positively correlated with percent days with cough (β=2.68, R^2=0.26, p=0.03), and wheeze (β=2.46, R^2=0.26, p=0.03). There was a positive correlation with teeth and BORG score (β=0.07, R^2=0.06, p=0.31) as well as sputum (β=1.73, R^2=0.15, p=0.11), but this wasn't statistically significant.

Conclusions: Compared to controls, COPD subjects have poorer dental health. More teeth is associated with increased daily respiratory symptoms, specifically cough and wheeze. In the setting of poor dentition, it's possible that more teeth may harbor more bacteria and inflammation, causing worse daily symptoms.

Infectious Complications of Bronchial Stenosis in Lung Transplant Recipients

Jablonski L, Moss S, Fallis R, Clauss H, Axelrod P

Background: Development of bronchial stenosis remains a significant source of morbidity and mortality for lung transplant recipients.

Study Objectives: Evaluate whether lung transplant recipients with bronchial stenosis develop more infectious complications than those without stenosis.

Methods: The study population included two subsets of lung transplant recipients at Temple University Hospital who received organs between January 1, 2011 and September 29, 2016: A) patients with bronchial stenosis, and B) a random sample of lung transplant recipients without bronchial stenosis. Charts were reviewed retrospectively to collect demographic information, bronchial stenosis treatments, culture data, and episodes of pneumonia and tracheobronchitis. Patients were followed up to one year after transplant.

Results: We identified 35 patients who had been diagnosed with bronchial stenosis following transplant and 35 control patients. Stenosis occurred a median of 54 days after transplant (range 5-365 days). Patients with bronchial stenosis had more hospital days (87.4 vs 46.8 days, p=0.011) and had more total hospitalizations (4.54 vs 2.37, p=0.00009). The relative risk of pneumonia among cases vs controls was 3.97 (95% CI 2.17-7.26, p=0.000001), and tracheobronchitis 3.10 (95% CI 1.58-6.08, p=0.000443). Patients with bronchial stenosis had significantly more respiratory cultures with *Staphylococcus aureus* (RR 5.0; p=0.001) and *Pseudomonas aeruginosa* (RR 2.1, p=0.026). Mortality within the first year following transplant was equal in both groups (14.3% vs 14.3%).

Conclusions: There was no significant increase in one year mortality in patients who developed bronchial stenosis following lung transplant. However, patients with bronchial stenosis had significantly higher risks of pneumonia and tracheobronchitis, and spent more days in the hospital.

Clinical Experience with Telavancin for Treatment of Methicillin-Resistant *Staphylococcus Aureus* (MRSA) Bacteremia

Jablonski L and Suh B

Background: Complicated methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia is becoming increasingly challenging to manage. We have noted a frequent number of cases with poor response to vancomycin and daptomycin, which are the first-line agents recommended in the Infectious Disease Society of America (IDSA) guidelines for the treatment of MRSA bacteremia. Telavancin has recently been approved for MRSA bacteremia associated with complicated skin and skin-structure infections and hospital-acquired and ventilator-associated bacterial pneumonia.

Methods: We present a retrospective case-series report of 8 patients treated with telavancin for MRSA bacteremia with and without endocarditis.

Results: Of 8 patients treated with telavancin for refractory MRSA bacteremia, 7 of them had blood cultures sterilize on telavancin therapy. 1 patient died after receiving telavancin for 2 days, soon after a cardiac surgery. 5 of 8 (62.5%) patients had definite infectious endocarditis (IE), 2 (25%) had possible IE by modified Duke's Criteria. No patients developed renal failure necessitating a change in antibiotic therapy.

Conclusions: We present several cases of MRSA bacteremia with or without IE successfully treated with telavancin after exhibiting poor clinical and microbiological response to vancomycin and daptomycin. While more randomized controlled clinical trials need to be conducted, we may be able to include telavancin in our armamentarium against complicated MRSA bacteremia infections.

Atypical Carcinoid in MEN1 Syndrome: A Case Report

Joyce K, Hall MJ, Ridge JA, Sirisena I, Veloski C

Objective: Multiple endocrine neoplasia type 1 (MEN1) is a well-known, yet rare, autosomal dominant syndrome characterized by tumors of the parathyroid, anterior pituitary, and pancreas. Carcinoid tumors are found with increased frequency, with thymic carcinoids in 1-5% of patients with MEN1. Thymic carcinoid in MEN1 affects men more than women, with reported M:F ratios ranging from 20:1 to 2:1. Some have found an association between MEN1-associated thymic carcinoid and smoking. Here, we report a thymic carcinoid in a nonsmoking woman with MEN1.

Case Presentation: A 39 year old woman with a history of subcutaneous lipomas presented with abdominal pain and increased abdominal girth. She did not smoke. Imaging revealed enlarged ovaries and uterine fibroids. She underwent TAH/BSO. Pathology demonstrated bilateral granulosa cell tumors of the ovaries, Stage Ib. Imaging also showed a 4 cm anterior mediastinal mass and a 2.4 cm pancreatic head mass. On resection, the anterior mediastinal mass was consistent with thymic carcinoid and thymoma. Hypercalcemia led to a 3.5 gland excision. During parathyroidectomy, papillary thyroid carcinoma was discovered incidentally in a central lymph node and a total thyroidectomy with central neck dissection was performed. One lymph node from the central compartment also revealed neuroendocrine tumor similar to the thymic carcinoid. The pancreatic head mass proved to be a low grade neuroendocrine tumor. The thymic carcinoid has not recurred.

Conclusion: Thymic carcinoid tumors can occur in any patient with MEN1 and their poor prognosis may warrant active surveillance.

Oral Iodine for Treatment of Decompensated Hyperthyroidism in Methimazole Induced Cholestatic Liver Injury

Karunakaran A, Criner K, Anolik J

Case: 41 year old woman with Graves' disease presented with jaundice and pruritus 1 month after starting methimazole(MMI). Labs prior MMI showed normal LFT and CBC. MMI was held and testing revealed elevated total bilirubin(TBILI) of 16.7(0.2-1.2mg/dL), direct bilirubin(DBILI) 9.8(0.0-0.6mg/dl), ALP 575(33-115U/L), AST 57(10-30U/L), ALT 110(6-29U/L), INR 0.9, with TSH 0.01(0.4-4.20IU/ml), T3 402.8(76-181ng/dL) and free T4 4.5(0.8-1.8ng/dl). Biliary tree calculus, viral and autoimmune hepatitis were excluded. Liver biopsy showed drug induced cholestatic injury with preserved architecture. Hyperbilirubinemia and hyperthyroidism worsened despite cholestyramine, ursodiol, metoprolol, prednisone and propranolol. Lugol's iodine was tried and in 1 week TBILI fell to 6.6mg/dl, ALP 77U/L, Free T4 0.8ng/dl and T3 80ng/dl. Thyroidectomy was later performed and her liver function continued to improve.

Discussion: Cholestatic liver injury is a rare but potentially fatal complication of MMI. Drug induced liver injury was suspected based on absence of risk factors, mechanical obstruction, or concomitant liver diseases, plus a temporal relationship of MMI use and onset of cholestasis. Hyperthyroidism and liver injury are interrelated as thyroxine can cause liver hypoxia, while its metabolism is reduced in liver dysfunction. Successful treatment with iodine of uncontrolled hyperthyroidism to liver injury has rarely been reported. This resulted in prompt clinical and biochemical improvement. Urgent thyroidectomy was performed to avoid escape from Wolff-Chaikoff effect.

Conclusion: Iodine therapy should be considered along with other modalities in the treatment of uncontrolled hyperthyroidism in the setting of severe drug induced cholestatic liver injury.

Distal Esophageal Impedance (DEI) during High Resolution Esophageal Manometry with Impedance (HREMI) Predicts Presence and Length of Barrett's Esophagus (BE)

Kataria R, Rosenfeld B, Malik Z, Harrison M, Parkman H, Schey R, Smith MS

Introduction: Barrett's esophagus is characterized by intestinal metaplasia in the distal esophagus. Use of HREMI to measure DEI is limited. Our aims are to: compare DEI using HREMI in patients with BE, esophagitis, and healthy volunteers; correlate the length of low DEI in patients with BE using HREMI to the length of endoscopically measured BE (Prague Score).

Methods: A retrospective review was performed. DEI was calculated from HREMI using a 30 second segment without swallows. Readings from the first three sensors above the lower esophageal sphincter (LES) were compared. In patients with BE, visual analysis low impedance (VLI) on HREMI was assessed. The impedance values were plotted to measure the extent of plotted low impedance (PLI). Lengths of VLI and PLI were correlated to the Prague score.

Results: 45 patients were included (16 BE; 19 esophagitis; 10 volunteers). BE patients had significantly lower DEI at the first three sensors above the LES (0.81±0.20, 0.97±0.27, 1.37±0.45) compared to volunteers (6.94±0.99, 8.20±0.73, 8.73±0.60; $p<0.01$). DEI was significantly lower for patients with BE than esophagitis (2.01±0.51, 2.49±0.56, 2.98±0.65) at the first two sensors ($p<0.01$); i.e., BE<<esophagitis<<controls. PLI and VLI had stronger correlation to the C score ($r2=0.84$; 0.83) than M score ($r2=0.76$; 0.68).

Conclusions: DEI assessed by HREMI is significantly lower in patients with BE compared to those with esophagitis and healthy volunteers. Impedance values by HREMI have a strong correlation to the Prague score. Our data suggests HREMI can distinguish between BE, esophagitis, and normal mucosa, and also predict BE segment length.

Lung Ultrasound Evaluation Immediately Post Placement of Endobronchial Valves in Patients with Advanced Emphysema

Kousha M, Kim C, Desai P, Criner G

Rationale: Endobronchial valves have been utilized for bronchoscopic lung volume reduction in patients with advanced emphysema. We report the use of lung ultrasound (LUS) immediately post placement of endobronchial valves (EBV) in patients with advanced emphysema.

Methods: We performed bedside LUS immediately before and after endobronchial valve placement in patients with severe emphysema participating in the Pulmonx® Endobronchial Valves Used in Treatment of Emphysema (LIBERATE) and the Evaluation of the Spiration® Valve System for Emphysema to Improve Lung Function (EMPROVE) studies. LUS included 2D and M-mode assessments of pleural apposition and excursion in treated and non-treated lobes. Patients received chest x-rays immediately following valve placements and then as defined by study protocols.

Results: LUS evaluation was performed in 7 patients who successfully received endobronchial valves. In all seven patients, post-procedure ultrasound in areas corresponding to treated lobes showed absence or significant decrease in normal pleural excursion when compared to pre-procedural evaluation. No change was found in areas of untreated lobes bilaterally, except in the one patient with a pneumothorax. The one patient with pneumothorax acutely developed absence of pleural excursion in both areas of treated and untreated lobes in the EBV treated lung.

Conclusion: LUS can help provide rapid assessment of pleural excursion in patients undergoing EBV placement for lung volume reduction. Absence or significant decrease in pleural excursion post-procedure suggests efficacious and successful placement. However, presence of these changes in areas of both treated and untreated ipsilateral lobes of the target lung likely indicates development of significant post-procedure pneumothorax.

Abstract #17

Rate of Decline in FVC in Non-IPF Pulmonary Fibrosis after Anti-fibrotic Initiation

Brown JC, Kraft J, Vega-Olivo M, Galli JA, Simpson S, Criner GJ

Rationale: Anti-fibrotic (AF) medications, pirfenidone and nintedanib, are not approved for use in non-IPF pulmonary fibrosis. We hypothesized that AF agents would slow the rate of disease progression in patients with non-IPF pulmonary fibrosis.

Methods: We reviewed a cohort of patients diagnosed with non-IPF fibrosis and compared their rate of change in forced vital capacity (FVC) before and after starting AF therapy. We reviewed the charts of 44 patients who were diagnosed with non-IPF fibrosis who were prescribed either pirfenidone or nintedanib. 28 patients were eliminated due to insufficient FVC measurements either pre or post AF initiation. 3 were eliminated because AF medication was stopped prior to repeat FVC measurement. 2 were eliminated after further review of their chart found their diagnosis to in fact be IPF. The remaining patients carried diagnoses of either chronic hypersensitivity pneumonitis, NSIP, connective tissue disease related ILD, or dermatomyositis. At least 2 FVC measurements were needed both before and after starting an AF agent in order to measure the rate of change in FVC over time. We collected data regarding number of days between FVC measurements pre and post AF initiation, type of fibrosis, use of mycophenolate (MP), AF dose tolerated, HRCT findings as reviewed by a thoracic radiologist, and biopsy results when available. Data is presented as Mean + SD.

Results: In the eligible subjects, there was no significant difference in number of days between FVC measurements before starting an AF (avg = 157 ± 69 days, 95% CI [116,197]) vs after starting an AF (156 ± 74 days, 95% CI [112, 199]) ($p = 0.75$). Before starting an AF, there was an average rate of decline in FVC of 1.4mL per day (FVC slope avg = -1.4mL/day, SD = 1.5, 95% CI [-2.2, -.5]). After starting an AF, there was an average increase in FVC of 0.2mL per day (FVC slope avg = 0.2, SD = 1.6, 95% CI [-0.7, 1.2]) ($p = 0.005$). The 6 patients taking MP were on MP both pre and post AF initiation.

Conclusion: AF agents slow the progression of non-IPF pulmonary fibrosis as measured by FVC. With our small sample size and 95% CI, it is unclear if AF therapies can improve, stabilize, or merely slow the rate of FVC decline. Prospective studies are needed.

The Incidence and Mortality of Cardiogenic Shock in Patients Admitted with Acute Decompensated Systolic Heart Failure

Kumar J, Dillane C, Plamenac J, Schwartz D

Introduction: Cardiogenic shock (CS) is a state of end-organ hypo perfusion due to heart failure. No data exists on the mortality of CS in patients admitted with acute systolic heart failure (ASHF).

Method: We performed a retrospective chart review of 319 admissions with a diagnosis of ASHF in 2014. Patients were identified using ICD-9 codes. CS was defined as a cardiac index (CI) of <1.8 L/min/m2 without support or <2.2 L/min/m2 with support. Exclusion criteria included; ACS, admission for cardiac surgery, admission post elective right heart catheterization (RHC), pre-existing inotrope dependence, post heart transplant (OHT) or ventricular assist device (VAD) and patients transferred with presumed CS.

Results: 270 admissions were analyzed, 49 patients had a RHC. 29 had CS confirmed by CI (Group 1; mean CI 1.656 L/min/$m^{2.}$). The incidence of CS was 10.3% (95% CI 7.5%-15%). The remaining 241 patients were not in CS clinically or hemodynamically (Group 2; mean CI 2.57 L/min/$m^{2.}$). Group 1 had a greater proportion of Hispanics (48% versus 22.8%, P=0.001) and less African Americans (24% v 51.4% P=0.02). Group 1 had a prolonged length of stay (10 versus 5 days, P=< .00001). The mortality in Group 1 at discharge was 0% versus 5% in group 2 and at one-year was 44.9% versus 32.8% in Group 2.

Conclusion: CS occurs due to ASHF with relative frequency. The in-patient mortality may be less in CS as a complication of ASHF. A larger study is needed to determine the mortality of CS.

Contemporary Practice and Cardiovascular Outcomes after Percutaneous Peripheral Vascular Intervention: A report from the National VA-CART PVI Registry

Lee A, Stanislawski MA, Dattilo PB, Donaldson D, Warner J, O'Donnell CI, Rogers RK, Shunk KA, Kinlay S, Jones WS, Brilakis ES, Klein AP, Casserly IP, Rumsfeld JS, Ho PM, Maddox TM, Armstrong E, Tsai TT, Aggarwal V

Recent advances in percutaneous peripheral vascular intervention (PVI) have led to increased utilization of this treatment approach in patients with peripheral artery disease (PAD). However, given that PVI is an emerging field, there have been no major multi-center studies that have examined usage patterns, associations, or outcomes in patients undergoing PVI. In this study, the VA-CART program peripheral registry was used to analyze procedural characteristics, associations, and outcomes in patients who underwent PVI at 33 VA sites from 06/15/2005 to 08/20/2010 for claudication or critical limb ischemia (CLI). Outcome assessments were performed for stroke/transient ischemic attack (TIA), major adverse cardiovascular events (MACE), subsequent coronary revascularization, and transfusion. Stent placement was the most prevalent revascularization strategy in the aorto-iliac and femoral segments, whereas balloon angioplasty was the dominant revascularization strategy in the infra-popliteal segments. All-cause mortality was higher among patients with CLI as compared to claudicants (31 vs. 21; $p<0.0001$). Furthermore, patients with CLI were more likely to experience MACE (HR 2.00; 95% CI 1.55 – 2.58) compared to claudication patients over a median follow up of 29.2 months. There was no difference in the hazard of experiencing stroke/TIA in patients with CLI compared to patients with claudication (HR 1.43; 95% CI 0.70 – 2.90). Patients with CLI had a lower hazard for coronary revascularization as compared to claudicants (HR 0.38; 95% CI 0.18-0.80). These findings extend our current knowledge on PVI outcomes from vessel patency rates and amputation to overall survival and major adverse cardiovascular events.

Gastric Per Oral Endoscopic Myotomy (G-POEM) for the Treatment of Refractory Gastroparesis: Early experience

Malik Z, Kataria R, Modayil R, Ehrlich AC, Schey R, Parkman H, Stavropoulos SN

Gastroparesis (GP) is a disorder that can be difficult to treat. Gastric per oral endoscopic myotomy (G-POEM) of the pylorus is a new technique that is being used to treat GP. Our aim was to report our findings in performing G-POEM for refractory GP and determine if there are symptoms that predict a response.

Methods: The first 13 patients undergoing G-POEM are reported. Pre-procedure and post-procedure gastric emptying scan (GES) and symptom severity were obtained. Patients underwent G-POEM by creating a submucosal tunnel proximal to the pylorus, followed by full thickness pyloromyotomy.

Results: All 13 patients successfully underwent G-POEM. The average time of G-POEM was 119 minutes, average myotomy length was 3.5 cm, and average hospital length of stay (LOS) was 2.5 days. Eleven patients completed follow up questionnaires; 8 were improved subjectively (73%), 2 were worsened, and 1 was unchanged. There was no significant difference in GCSI when comparing pre vs post procedure (2.2, 1.9). There is a trend towards a lower baseline GCSI in those who responded (1.9, 2.8, p=0.14). Individual symptom severity scores tended to improve, particularly vomiting. Six patients had post G-POEM GES; 4 improved, 1 was unchanged, and 1 worsened.

Conclusions: G-POEM for treatment of refractory GP appears to be a feasible, safe, and useful technique. This study shows 73% clinical response. G-POEM was successfully performed in patients with a variety of etiologies of gastroparesis. Clinical improvement may correlate with a lower starting GCSI but did not correlate with GES changes post procedure.

Macrophage Activation Syndrome or Acquired Hemophagocytic Lymphohistiocytosis in Adults: Demographics, Clinical Characteristics, and Survivorship in an American Academic Medical Center

Malkana S and Tan IJ

Background: Macrophage Activation Syndrome (MAS), also known as acquired Hemophagocytic Lymphohistiocytosis (aHLH) in adults, is an immune-mediated systemic inflammatory state. It is associated with multisystem organ failure and high mortality. Diagnostic criteria are extrapolated from children with primary HLH as there is a paucity of literature on adults. Additionally, most recent evidence is reported from non-U.S. populations. These gaps in the literature may contribute to under-recognition and under-diagnosis of adults in the U.S. Study objectives were to characterize the demographic, clinical, and biopsy features of adult MAS/aHLH at a single American academic medical center; along with treatments, outcomes, and possible predictive factors in the outcomes.

Methods: The study center's Electronic Health Record was queried for adult patients in the inpatient or outpatient setting between 1/1/2010-8/30/2015 with ICD-9 codes for hyperferritinemia, adult-onset Still's disease, MAS, HLH, or combinations of these. This produced 42 patients. A chart review was performed to confirm diagnosis and patients with only hyperferritinemia or adult-onset Still's disease were excluded. Patients without primary data or reliable report thereof for the first presentation of the disease were also excluded. A detailed chart review followed.

Results: Thirteen patients met criteria during the study period. As compared to the global literature, the majority of patients with MAS/aHLH were male at our center and more often autoimmune-triggered as opposed to viral infection-associated. Ten patients (77%) had biopsy findings or elevated biomarkers for MAS/aHLH, though soluble IL-2 receptor and CD25 were more commonly positive than bone marrow aspirate. Although cardiopulmonary compromise requiring ICU-level care was common, normal renal function was often maintained. Combination immunosuppressive therapy with anakinra was the most common treatment. Importantly, ten of the eleven patients (91%) whose index encounter was at the medical center survived to discharge.

Conclusion: This study reviewed data for adult patients from an American population that is under-represented in the literature. Patient demographics and key clinical features differ from globally observed trends. This may reflect characteristics innate to the study center or the limitations of using EHR-captured data retrospectively. Molecular and biochemical markers can provide a diagnosis when pathognomonic hemophagocytes are not seen in the bone marrow or lymph organs. Combination immunosuppressive therapy remains important but survivorship is difficult to predict without standardization of treatment regimens.

Daily Respiratory Symptoms Based on Degree of Airflow Obstruction in Patients with COPD

Marron R, Gaeckle N, Criner A, Smith B, Criner G

Rationale: In patients with chronic obstructive pulmonary disease (COPD), complaints of cough, mucous production and dyspnea are frequently present and affect quality of life, increase the risk of future exacerbations, and are associated with a greater decline in lung function over time. Several recent studies have highlighted that respiratory symptoms measured episodically may be independent of the degree of airflow obstruction. We sought to assess the presence and magnitude of *daily* respiratory symptoms in relationship to the degree of airflow obstruction in a large cohort of patients with COPD followed for a prolonged period of time. The patients recruited into this cohort had had recent hospitalizations for COPD exacerbations or multiple office-diagnosed exacerbations. They then reported their daily symptoms into a smartphone application as part of the COPD Co-pilot program at Temple Lung Center.

Methods: All patients in the cohort who reported > 90 days of respiratory symptoms and peak flow measurements between January 2015 and September 2016 were included. Daily symptoms including breathlessness, sputum production, cough, nasal congestion, fever, sore throat, and wheezing were compared between patients based on their GOLD FEV_1 classification. The daily symptoms were measured on a semi-quantitated scale as previously reported (Cordova 2015). The percentage of days patients were flagged to have exacerbations of COPD were also analyzed. Data is presented as mean $\pm$ standard deviation (SD).

Results: A total of 108,376 days of symptoms from 301 patients were included in this analysis which included an F test with ANOVA and chi-square test. Breathlessness measured by modified Borg score varied independently of GOLD classification (I-4.24$\pm$1.44, II-3.55$\pm$2.29, III-3.80$\pm$2.13, IV-4.33$\pm$1.94, $p<0.001$). GOLD I patients reported a higher quantity of sputum as well as thicker sputum consistency ($p<0.001$). GOLD I patients more frequently recorded cough, nasal congestion, and sore throat, but less wheeze than more obstructed patients ($p<0.001$). Percentage of days with cough was variable (I-72%, II-45%, III-43%, IV-35%, $P<0.001$).

Conclusion: Presence and severity of daily symptoms, like those measured episodically, may not correlate with level of obstruction on pulmonary function tests. Daily complaints of cough, in particular, appear to be independent of the level of obstruction in our analysis. Awareness of subjective *daily* symptom burden may help dictate treatment of COPD patients independent of measurements of airflow obstruction.

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Abstract #23

Impact of Nebulized Long-Acting Beta Agonists on Daily Symptoms of COPD Patients

Marron R, Gaeckle N, Criner A, Smith B, Criner G

Rationale: Long-acting beta agonists (LABAs) are prescribed to patients with chronic obstructive pulmonary disease (COPD) to aid in limiting symptoms, improve lung function, and to help avoid exacerbations. LABAs can be delivered via dry-powder inhaler (DPI) or in nebulized format. We do not know who is prescribed nebulized LABAs versus DPI LABAs in general medical practice. The COPD Co-Pilot Program that has been designed and implemented at the Temple Lung Center enrolls patients with COPD and allows them to enter their daily symptoms into a smartphone application. We analyzed this database to characterize the patient population on nebulized LABAs compared with those not on nebulized LABAs and measured their reported daily symptoms over time.

Methods: All patients who reported more than 90 days of symptoms between January 2015 and September 2016 were included. A chart review was performed to determine which patients were prescribed a nebulized LABA. Daily symptoms including breathlessness, sputum production, cough, nasal congestion, fever, sore throat, and wheezing were compared between patients on nebulized LABAs and those not on them. The percentage of days patients were flagged to be in exacerbation was also compared. Data is presented as Mean + Standard Deviation (SD).

Results: Of the 302 patients who were included, 103 (34.1%) were taking nebulized LABAs. A total of 109,419 days of symptoms were included in this analysis which included a t-test and chi-square test for each variable. Patients taking nebulized LABAs were older (69.0 years + 7.3 vs 65.7 + 7.3, $p<0.001$), more breathless (Borg score 4.2 + 2.02 vs 3.8 + 2.10, $p<0.001$), and had a worse FEV_1 (36.4% pred. + 15.6 vs 40.7% + 18.7, $p<0.001$). They reported less cough (40% days vs 43%, $p<0.001$), sore throat (4% days vs 8%, $p<0.001$), and fevers (0.3% days vs 0.7%, $p<0.001$) but did report more wheezing (39% days vs 28%, $p<0.001$) than those not on nebulized LABAs. Patients on nebulized LABAs had slightly more days in exacerbation (14% vs 13%, $p<0.001$).

Conclusion: This observational study shows that patients prescribed nebulized LABAs overall are older, more breathless, have more days in exacerbation, and have worse lung obstruction. Sicker COPD patients are, in general, put on nebulized therapy in place of inhaler therapy. Patients on nebulized LABAs, however, reported less cough despite the fact that they are sicker which could be a sign that nebulized therapy is more effective in alleviating this symptom.

Scopolamine Patch for Nausea and Vomiting in Refractory Gastroparesis: A Prospective Case Series

Meillier A, Divakaruni L, Roberts A, Schey R, Parkman H

Background: Scopolamine patch efficiency in treatment of gastroparesis is not known. Persistent refractory symptoms of nausea and vomiting may coincide with undiagnosed vestibular dysfunction.

Goals: The objective is to study the efficacy and side effects of scopolamine patch in patients with nausea and vomiting in gastroparesis and gastroparesis-like syndrome. Additionally, the study is to assess motion sickness characteristics in patients with gastroparesis and the prevalence of labyrinthine disturbances in this group of patients.

Study: Patients with a diagnosis of gastroparesis filled out a demographic questionnaire and PAGI-SYM surveys. The patient had additional physical examination tests including checking for nystagmus, modified Fukuda stepping test and Romberg performed. The patient were prescribed scopolamine patch with follow-up telephone calls after 2 and 4 weeks with PAGI-SYM, CPGAS and side effects assessed.

Results: 9 patients with gastroparesis were included in this study from 8/2016-11/2016 (52±15Y, 3M/6F). Baseline symptoms of nausea and vomiting had a perceived relief following 4 weeks of treatment in CPGAS (3.2±2.3, p=0.024). The initial severity of symptoms did not significantly improve in PAGI-SYM (p=NS). No significant difference was seen in a relationship between relief of nausea or vomiting and a positive nystagmus, Romberg or Marching test (p=NS).

Conclusions: Refractory gastroparesis had a significant improvement in the severity of nausea and vomiting following 4 weeks of treatment with CPGAS. Generally no significant change was seen in the other symptoms tested and no changes were seen with vestibular dysfunction and relief of symptoms.

Diabetic Myonecrosis: A Rare Complication of a Common Disease

Miller E and Rubin D

Introduction: Diabetic myonecrosis (DMN) is rare, diagnostically challenging complication of diabetes. This case report of DMN illustrates key features to aid diagnostic efforts.

Case Description: A 44 year-old female with Type 2 diabetes and end stage renal disease presented to her primary care physician (PCP) describing refractory severe right anterior thigh pain for 2 weeks. During subsequent hospitalization, CT angiogram showed mild-moderate arterial stenosis from the common iliac to the popliteal bilaterally. She was given acetaminophen and discharged without a definitive diagnosis. She was later seen in an outside hospital where extensive cellulitic changes and T2 hyperintensity in the RLE quadriceps were seen on MRI. She presented to her PCP with continued pain of her proximal RLE and focal thigh inflammation. The PCP prescribed tramadol. The next day she was admitted with worsening thigh pain. Physical exam revealed warmth and erythema on the right thigh with extreme tenderness. Laboratory studies showed blood sugar 624mg/dL, anion gap 21, CRP 124.4mg/dL, ESR 41mm/hr, Total Ck 161 U/L. Hemoglobin A1c ranged from 9.2-12.2% since 2012. The patient underwent biopsy of the right vastus medialis, revealing necrotic muscle fibers consistent with DMN. Acetaminophen and tramadol were provided, modest improvement was noted at 3-week follow-up.

Discussion: DMN is a rare complication of both type 1 and type 2 diabetes, seen most often in patients with long-standing, poorly controlled disease. Around 200 cases have been reported since the initial description in 1965. Correlates of DMN typically include other microvascular complications: nephropathy (71%), retinopathy (57%) and neuropathy (55%). DMN typically affects the quadriceps (80%). Clinical diagnosis includes history and MRI findings: increased T2-signal of the affected muscle, diffuse enlargement of ill-defined borders, and loss of the normal fatty intramuscular septa (T1). Muscle biopsy, though not essential, shows muscle fiber necrosis and blood extravasation. No specific treatment guidelines exist. Anecdotal evidence suggests rest and analgesia lead to recovery in approximately 8 weeks. Approximately 40% of patients may have recurrence. Tight glycemic control has not been demonstrated to prevent recurrence.

The Effect of Eating on Glycemic Control among Critically-ill Patients Receiving Continuous Intravenous Insulin

Miller E, Lalla M, Zaidi A, Elgash M, Zhao H, Rubin D

Consensus guidelines recommend that ICU patients with blood glucose (BG) levels >180 mg/dL be given continuous IV insulin (CII) to maintain levels between 140 and 180 mg/dL. The effectiveness of CII at controlling BG levels among patients who are eating (E) relative to those who are not eating (NE) has not been described.

We conducted a retrospective cohort study of 262 patients admitted to an ICU between 1/1/2014 and 12/31/2014 who received only CII. Patients were excluded for age <18 years, a diagnosis of diabetic ketoacidosis or hyperglycemic hyperosmolar nonketotic syndrome, admission to an obstetrics service, or receiving continuous enteral or parenteral nutrition.

Among 22 baseline characteristics, only the proportion of patients receiving glucocorticoid treatment (GCT) (17.7% E, 37.5% NE, p<0.001) and APACHE II score (15.0 +/- 7.4 E, 17.9 +/- 7.9 NE, p=0.004) were significantly different between groups. There was no significant difference in the primary outcome of patient-day weighted mean BG overall (E, 168 +/- 75 mg/dL vs. NE, 157 +/- 82 mg/dL, (p=0.18) or day-by-day (p=0.16) adjusted for GCT and APACHE score. Surprisingly, there was a significant difference in the distribution of BG values favoring E patients (140-180 mg/dL, 26.1% E, 24.4% NE, <70 mg/dL, 1.2% E, 1.3% NE, and >180 mg/dL, 18.2 E, 22.7% NE, p=0.0002).

Eating does not adversely affect mean BG levels of ICU patients receiving only CII. Prandial SC insulin may not improve BG control of ICU patients receiving CII.

Increasing Awareness and Availability of Respiratory Viral Polymerase Chain Reaction Testing to Shorten Time to Diagnosis: An Inpatient Quality Improvement Project

Moss S and Mueller D

Early identification of an infectious etiology can improve outcomes, including admission rates, length of stay, duration of antimicrobial therapy, and mortality. Rapid diagnostic testing, including Polymerase Chain Reaction (PCR) testing, has been incorporated into many hospital microbiology labs and is a useful tool in antimicrobial stewardship. Temple's own microbiology lab initiated respiratory viral PCR testing in January 2016. Previously, knowledge of the availability of this test had not been widely disseminated and testing kits were only available in the microbiology lab. The aim of our quality improvement project was to increase awareness of the test and facilitate timelier viral PCR. To accomplish this, we provided verbal and written educational material to the Internal Medicine Medical Admitter housestaff and physicians, and we created storage space for viral testing kits in the emergency department. Information was collected over an eight-week period during the influenza season, including four weeks before and after our intervention. Our primary outcomes included the total number of viral PCRs ordered, the number of viral PCRs ordered in the emergency room, and the time-to-viral PCR order and result for non-ICU patients. Secondary measures included the choices and durations of antimicrobial therapy. **Data is being collected and analyzed**.

Temple Cardiogenic Shock Quality Improvement Initiative: Introduction of a Novel Multidisciplinary Algorithmic Approach towards Managing Patients with Cardiogenic Shock

Nicolais C,* Fonseka N,* Lashner M,* O'Neill B, O'Murchu B, Bashir R, Alvarez R, Abraham JG, Punnoose L, Hamad E, Aggarwal V

***Dr. Nicolais is the presenting author and Drs. Nicolais, Lashner and Fonseka are co-first authors.**

Introduction: In-hospital mortality from cardiogenic shock continues to be over 70% nationwide despite many newer percutaneous mechanical circulatory support (p-MCS) devices. Given lack of evidence and consensus, management is highly variable, empiric; based on physician practice, perceptions and experiences.

Aim: We aimed to review our local Temple outcomes in such patients, identify gaps for improvement and then institute a universally accepted Temple Cardiogenic Shock Management Algorithm.

Methods: Chart review was performed on all cardiogenic shock patients who received p-MCS at Temple Hospital. Literature search for similar outcomes from other institutions was performed and these data were synthesized to inform practice and develop the proposed Temple Cardiogenic Shock Initiative (CSI) Algorithm.

Results: Our review identified 42 patients who received p-MCS for cardiogenic shock from Jan 2013- December 2016 at Temple Cardiac Catheterization Laboratory. Of these patients only 6 patients survived to hospital discharge. Out of hospital cardiac arrest requiring ACLS, dependence on multiple vasoactive agents, initiation of p-MCS >24 hours after presentation and need for bi-ventricular support strongly predicted mortality in this cohort.

Our outcomes were comparable to national data but we identified a recent report of improved outcomes (mortality rate of 30%) with an algorithmic approach and preaching early institution of p-MCS based on objective hemodynamic parameters. These data were used to develop the proposed Temple Cardiogenic Shock Initiative (CSI) Algorithm (See Figure).

Conclusions: Temple CSI is a quality improvement initiative aimed to streamline processes of care and enhance care of cardiogenic shock patients at Temple Hospital.

Abstract #29

Effects of a Medical Weight Loss Intervention on Quality of Life in Overweight or Obese, HIV Infected Subjects with Type 2 Diabetes

Phillips A and Vaz C

Controlling type 2 diabetes (T2DM) in HIV infected individuals is a challenge since HIV and HAART worsen insulin resistance. HIV and T2DM have synergistic adverse effects on neurocognition which in turn affects patients' ability to manage health. We are conducting a pilot study (N=20) examining the effect of liraglutide and lifestyle intervention on neurocognition and inflammatory markers in HIV infected subjects with T2DM. The prespecified primary outcome is change in global and domain averages measured on a neuropsychological profile at 6 months.
We describe here an additional aim of this study to determine the effect of lifestyle intervention combined with liraglutide, on the quality of life (QOL) in this population. The research hypothesis is that patient's QOL will improve after receiving the lifestyle and liraglutide intervention from beneficial effects on weight, glycemic control, metabolic health, and possible direct effects of GLP1 in the brain, which in turn should improve neurocognition and QOL.

The change in QOL with the study intervention will be assessed by a self-reported questionnaire. Patients will complete the questionnaire at 0, 3, and 6 month visits. We will use the World Health Organization QOL- HIV brief *instrument* (*WHOQOL-HIV BREF*) which measures QOL through six domains and has been validated by multiple studies and is tested cross-culturally. This will be the first study examining these outcomes following a medical weight loss intervention as well as the first study evaluating the use of liraglutide in this vulnerable population of HIV infected subjects with diabetes.

Abstract #30

Are We Still Adjusting to Multigene Panel Testing? An NCI-designated Cancer Center's 2-year Experience

Ramamurty C, Hitrik MA, Demora L, Forman A, Rainey K, Savage M, Montgomery S, Schwartz S, Masny A, Hall M, Daly MB, Obeid E

Background: Genetic testing for hereditary cancer predisposition has rapidly changed over the past few years with the introduction of multigene panel testing (MPT). MPT evolved from disease-agnostic comprehensive (C) panels alone to include disease-specific but expanded (DSE) panels as well as guideline-based (GB) panels. We analyzed trends in utilization of genetic testing over a two-year period in one NCI-designated Cancer Center, hypothesizing that over time MPT usage would trend toward more disease-specific panels.

Methods: We conducted a retrospective analysis of our program's database for all MPT ordered from 9/1/2013 to 8/31/2015 (n=619; 243 in year 1, and 361 in year 2). Tests were categorized into three groups based on specificity: GB, DSE, and C. The Chi-square test was used to analyze test types ordered in year 1 (9/1/2013-8/31/2014) and year 2 (9/1/2014 – 8/31/2015) and the proportions of resulting mutation types.

Results: A total of 604 MPT met the inclusion criteria: 39 GB (20 year 1, 19 year 2), 171 DSE (43 year 1, 128 year 2), and 394 C (180 year 1, 214 year 2). Compared to year 1, a larger proportion of DSE tests were ordered (35% v. 18%, $p<0.001$), and a smaller proportion of C tests (59% v. 74%, $p<0.001$) and GB tests (5% vs. 8%, $p=0.146$). DSE panels revealed a pathogenic variant (PV) at a rate of 16% and a variant of unknown significance (VUS) at a rate of 24%. C tests revealed a PV and VUS at rates of 14% and 29%, respectively. GB tests revealed a PV and VUS at rates of 20.5% and 18.0%, respectively. No statistically significant difference in detection rates of mutation types were found between GB, DSE, or C tests.

Conclusions: As expected, the proportion of C panels decreased while the proportion of DSE panels increased over time. The rate of GB panel ordering did not statistically differ over time. Exploration of possible factors contributing to this trend - insurance coverage, changing perceptions of genetic counselors, and patient preferences based on pretest counseling - is warranted. The rate of PV detected was not significantly different among the MPT categories.

National Rates of Inferior Cava Filters Placed for Prophylaxis in Patients without Venous Thromboembolism

Reddy S, Lakhter V, Zack C, Bashir R

The effectiveness of inferior vena cava filter (IVCF) insertion in reducing venous thromboembolism (VTE) associated morbidity and mortality is uncertain. There are well-documented safety issues with IVCF including device migration, fracture, and thrombosis. Nevertheless, the IVCF implantation rates in the United States (US) are 25 fold higher than in Europe. National Inpatient Sample (NIS) is the largest publically available all-payer health care database, which contains clinical and hospital specific information on approximately 8 million US hospital discharges annually. We used the NIS database to identify all patients in the US that underwent IVCF implantation over a nine-year period from January 2005 to December 2013. Using International Classification of Diseases codes, we investigated the national rates of IVCF placement, and the associated patient demographics and VTE diagnoses. An average of about 115,000 IVCF were placed annually nationwide for a total of 1,035,514 over the study period. Of the patient's receiving an IVCF, 37.2% had a pulmonary embolism (PE), 59.2% had a deep vein thrombosis (DVT), and perhaps, most importantly, 24.3% had neither a PE nor DVT. This last group representing the use of IVCF for VTE prophylaxis is highly controversial with absence of definitive data demonstrating efficacy. Given the high IVCF implantation rates across the US, the prophylactic IVCF use in nearly quarter of patients can serve as a strong starting point for the reduction of these devices in patients that may not derive benefit.

Predicting the Risk of Thyroid Cancer with Sonographic Patterns of Thyroid Macrocalcifications

Reznick T, Viswanathan L, Vaz C

There is no clear consensus on the risk of malignancy with macrocalcifications on thyroid ultrasound (1-4). We are conducting a retrospective analysis evaluating the association between patterns of macrocalcifications on ultrasound and risk of thyroid cancer. Prevalence data on thyroid cancer in our predominantly African American and Hispanic population is described here. A retrospective chart review of patients who underwent thyroidectomy at Temple University Hospital between January 1, 2010 – December 31, 2015 was performed. Records were obtained from EPIC EMR with a search for all thyroidectomies performed during the specified period. Surgical pathology, cytology by fine needle aspiration with Bethesda classification and demographic variables including age, ethnicity, sex, BMI, and smoking history were analyzed in available records. Our population n = 70 was 75% female, mean age 55 years, 61% AA, 20% Hispanic, 7% Caucasian, mean BMI 32 (29% overweight, 50% obese) and 15% smokers. The most prevalent type of thyroid cancer in our predominantly African American and Hispanic population who underwent thyroidectomies for any indication was papillary thyroid cancer (PTC). The prevalence of thyroid cancer in patients undergoing thyroidectomy for any indication was 24%. Our interim analysis reveals that PTC is the most prevalent type of thyroid cancer in a predominantly female minority (AA and Hispanic) population. We are obtaining consolidated records from pathology department for additional analysis so the final sample size should be larger. A correlation analysis will be performed for demographic factors, crucially for BMI and smoking history, after complete data collection.

Abstract #33

Increasing Utilization of Low Dose CT Chest for Lung Cancer Screening. Part I: Finding Our Target Population

Scott, JH

Quality improvement project at the Medicine Group Practice (residents clinic) at Temple University Hospital. Our research investigated the current status, accuracy, and reliability of the documented smoking history (more specifically, historical elements used to create the “Pack-Year” history) in our electronic medical record (Epic). Research looked into ways to improved accuracy and reliability of this data via physician mediated interventions. Also investigated current utilization of Chest CT Low Dose for lung cancer screening at Medicine Group Practice.

Findings have been troubling in that data in Epic is not up-to-date, accurate, or updated. Utilization of CT chest for lung cancer screening is low despite a significant proportion of our patients meeting criteria for lung cancer screening. Physician mediated interventions showed modest improvement in Epic documentation of smoking history but will likely not be a lasting intervention.

Online Decision Aid vs. Option Grid in Shared Decision Making Appointment Prior to Lung Cancer Screening

Sferra SR, Cheng JS, DiSesa V, Kaiser LR, Ma GX, Erkmen CP

Introduction: In lung cancer screening, providers should help patients understand potential harms and benefits through a process of Shared Decision Making (SDM). SDM is not only supported by the USPSTF, but it is a required element for reimbursement under the Centers for Medicare and Medicaid Services. Despite the importance, there are no evidence-based guidelines on methods of SDM. Our pilot study compares two SDM methods: Shouldiscreen, an online decision aid and option grids, an interactive guide. Our hypothesis is that these methods are equivalent in guiding patients through screening.

Methods: From May-November 2016, we conducted a randomized controlled trial in which lung cancer screening patients underwent SDM with Shouldiscreen or option grids. After screening, patients discussed their experience using CollaboRATE, a validated SDM assessment tool and answered a knowledge retention questionnaire.

Results: In 6 months, 238 patients received SDM with shouldiscreen vs. option grids. They did not statistically differ in demographics. The patients' knowledge retention was not statistically different($p=0.64$), even with education stratification($p=0.83$). There was a positive correlation between education and knowledge retention for patients using the option grid, but not for patients using shouldiscreen. The patients' CollaboRATE scores were not statistically different($p=0.13$).

Discussion: In our study, shouldiscreen and option grids were equivalent in terms of the information imparted and satisfaction with the SDM process. While shouldiscreen is accessible online and requires minimal engagement of the provider, option grids promote a discussion between the patient and provider. Further study into the resources needed to implement these SDM aids is needed.

Active Bleeding Detected during CT Angiography is an Independent Predictor of Mortality

Shafqet MA, Tonhat A; Toro B, Esparragoza P, Ehrlich AC, Friedenberg FK

Background: Patients presenting to the ER with severe GI bleeding require emergent resuscitation and prompt diagnostic testing. Endoscopy is the diagnostic modality of choice for bleeding sites in the proximal GI tract while CT angiography (CTA) is often the initial test for sites in the distal GI tract. CTA determines if bleeding is active and can precisely localize the source. We hypothesized that patients with active bleeding identified by CTA would more likely be clinically unstable and consequently experience increased mortality.

Methods: Using our hospital's inpatient EMR, we identified all patients admitted with acute GI bleeding between 1/2014 and 9/2016 who underwent a CTA. To identify cases, we cross-referenced ICD-9/ICD-10 codes for acute GI bleeding with the CPT/ICD-10 code for CTA. We eliminated cases in which there was ambiguity as to whether the CTA was performed for GI bleeding. For patients undergoing multiple CTAs (recurrent bleeding), we only included their first study.

Results: 262 patients met inclusion criteria with a mean age of 65.9 (±14.6) years, male:female = 131:131. There were 61 (23.3%) positive CTA exams. There were no differences in age, gender, time lapse to presentation, Charlson Comorbidity Score, initial blood pressure, pulse, hemoglobin, creatinine, or platelet count between those with a positive and negative CTA. Those with a positive CTA required far more PRBC units (8.2 vs.3.8; p= 0.001) during hospitalization. On univariate analysis, a positive CTA predicted higher mortality (14.8% vs.4.5%; OR = 3.7, 95% CI: 1.4-9.8) and this remained significant after adjusting for the aforementioned parameters (adjusted OR = 4.1, 95% CI: 1.3-12.5).

Conclusions: Mortality occurs in approximately 1/7 patients presenting with acute GI bleeding and a positive CTA. This occurs independent of age, gender, initial vitals, hemoglobin, and co-morbidities. These patients need to be closely watched in an ICU setting with prompt consultation to interventional radiology and surgery.

Abstract #36

Improving Osteoporosis Screening Using a Specialized Order Set in the Electronic Health System

Chen X, Skora J, Schmitz K, Yackoski J, Barkan P, Dengler S

Background: Osteoporosis screening with dual-energy x-ray absorptiometry (DEXA) scan is recommended by United States Preventive Services Task Force (USPSTF) guidelines to begin at age 65 for all women, and younger if there are additional risk factors. The North Philadelphia population, with its high incidence of comorbid medical conditions, alcohol and tobacco use, and lower dietary calcium and vitamin D intake is at risk for osteoporosis. However, bone health remains under-recognized in this community. Using the electronic health record (EPIC) data in our clinic, we found that out of 294 female patients at or over 65 years of age with DEXA scans ordered for osteoporosis screening, only 128 of them completed the test.

Intervention: We created an order set for screening DEXA scans in EPIC that includes instructions added onto the patients' After Visit Summaries (which are given to all patients at the completion of a visit). These instructions are written in simple, concise language aimed to educate our patients on the necessity of osteoporosis screening, as well as provide directions specific to Temple University Hospital on scheduling and location.

Results: Prior to implementing a specialized order set using EPIC, only 43.5% of ordered DEXA scans were completed over one year (2015-2016). We will be collecting data over the next year (2017-2018) to assess whether our intervention is able to improve rates of completed osteoporosis screening.

Seasonal and Regional Effects on COPD Exacerbation in Patients without Significant Cardiovascular Risk

So JY, Zhao H, Voelker H, Reed RM, Sin D, Marchetti N, Criner GJ for the COPD CRN investigators

Introduction: COPD is one of the world's leading causes of morbidity and mortality, and has been associated with cardiovascular disease. Studies have shown that cardiovascular disease leads to hospitalization of COPD patients, both independently and in association with respiratory symptoms. The effect of seasonality in patients with severe COPD but without significant cardiovascular disease has not been well studied. This study aims to determine seasonal and regional variability in COPD morbidity and mortality in those with severe COPD without significant cardiovascular risk factors.

Methods: Data on subjects from the Simvastatin in the Prevention of COPD Exacerbations (STATCOPE) study and placebo arm from the Azithromycin for the Prevention of Exacerbations of COPD (MACRO) study without significant cardiovascular risk factors was used for analysis. Presence of cardiovascular risks was assessed using Adult Treatment Panel III (ATPIII), as done in the STATCOPE trial. Forty five study sites were divided into climate regions in Canada and the United States. The primary outcome of the study was rates of exacerbation in each season. Secondary outcome included time to first hospitalization in different seasons and regions and overall mortality rate.

Results: A total of 1166 subjects were included in the analysis. Subjects had an average age of 63.3 +8.6, FEV1 41.6 +17.1% predicted and 53.6 + 29.4 pack year smoking history. Fifty percent of subjects were on supplemental oxygen at enrollment. Rates of COPD exacerbation was the lowest in summer when all regions were combined ($p<0.001$). Northeast, Southeast and Upper Midwest had statistically significant decline in rates of exacerbation in summer months ($p= <0.01$, 0.0071, and 0.015). Even though the overall rates of exacerbation were less in the summer, there is significantly more moderate to very severe exacerbations in the summer compared to other seasons ($p=0.001$), especially in Northeast, Southeast, West and Great Lakes regions. Mortality was also higher in the spring and winter (34 and 30% respectively) compared to the summer and fall (21 and 15% respectively). There was regional variability in time to first exacerbation ($p=0.0001$). Southeast and West climate regions had significantly longer median time to first exacerbation, 349 and 346 days respectively, compared to other climate regions (188 days).

Conclusion: There exists significant seasonal and regional variability in rates of COPD exacerbation, severity of exacerbations and overall mortality in patients with severe COPD without cardiovascular risks. Significant regional, but not seasonal, variability is present for time to first exacerbation.

Abstract #38

Seasonal and Regional Effects on Systemic Inflammation in Patients with COPD

So JY, Cornwell WD, Rogers TJ, Zhao H, Voelker H, Reed RM, Sin D, and Criner GJ for the COPD CRN investigators

Rationale: Patients with COPD are in an increased inflammatory state; prior studies show elevations in inflammatory markers, such as CRP and IL-6, during acute exacerbations. Elevations in inflammatory markers are associated with more frequent exacerbations and worse disease morbidity. In addition, seasonal changes in weather, temperature and respiratory pathogens influence respiratory symptoms. This study aims to assess seasonal and regional effects on systemic inflammation in COPD patients and disease morbidity.

Methods: Subjects from Simvastatin in the Prevention of COPD Exacerbations (STATCOPE) study and placebo arm of Azithromycin for the Prevention of Exacerbations of COPD study with serum measurements of inflammatory markers were used for analysis. Forty five study sites were divided into climate regions in Canada and the United States defined by Meteorological Services of Canada and National Oceanic and Atmospheric Administration of the United States. Serum inflammatory markers were measured at months 0, 3 or 6, and 12, and were grouped into spring, summer, fall, and winter. Mean levels of CRP, IL-6, IL-8, TNF-alpha, and MMP-1 were assessed in each climate region per season and per year.

Results: A total of 344 patients with at least one serum inflammatory marker measurement were included in the analysis. Subjects had a mean age of 63 $\pm$ 9 yrs., smoking history 53 $\pm$ 30 pk-yrs., FEV_1 predicted 42 $\pm$ 17 %, and BMI 27 $\pm$ 7 kg/m^2. Mean levels of CRP, IL-6, IL-8, TNF-alpha, and MMP-1 had significant regional variability. There was seasonal variability in MMP-1 and participatns in the Upper Midwest geographic zone, where CRP was significantly higher in the spring and fall seasons (p=0.009) and in the Southwest where TNF-alpha was significantly higher in the fall (p=0.049). (This held true when corrected for age, gender, race, smoking status, pack years, oxygen use, BMI and FEV1.

There was no significant seasonal variability in inflammatory markers except for participants within the Upper Midwest geographic zone, where CRP was significantly higher in the spring and fall seasons (p=0.009), and in the Southwest where TNF-alpha was significantly higher in the fall (p=0.049). There was no other seasonal variability observed in inflammatory marker levels.

Conclusion: Despite the increased rates of COPD exacerbations in colder seasons previously reported in other studies, seasonal variability in inflammatory markers in COPD patients exists in only few regions. However, there is significant regional variation in the level of inflammatory markers, potentially shedding light onto regional factors that influence systemic inflammation in COPD patients.

Funding: Supported in part by Cora and Emile Criner Lung Research Fund

Venous Thromboembolism Remains a Significant Complication for Hospitalized Patients with Inflammatory Bowel Disease

Sterling J, Friedenberg FK, Rothstein RD, Malik Z, Ehrlich AC

Introduction: Patients with inflammatory bowel disease (IBD) are more prone to thromboembolic events compared to the non-IBD population. The occurrence of venous thromboembolism (VTE) in hospitalized IBD patients has been previously described and is associated with a greater risk of in-hospital mortality. We aim to provide an update on population-based trends in rates of VTE among hospitalized IBD patients and the impact on mortality.

Methods: We utilized the Nationwide Inpatient Sample, a database that collects discharge data from more than 7 million annual admissions from participating community hospitals. We identified patients hospitalized for the period 2007-2011. We restricted our analysis to patients aged 18 to 80 with a diagnosis of Crohn's disease (CD) or ulcerative colitis (UC), as indicated by ICD-9 coding. Patients who also had a diagnosis of venous thromboembolism (VTE) were identified using ICD-9 codes. Data was weighted and analyzed using the Complex Samples Module of SPSS 23.0.

Results: After weighting, 1,154,683 hospitalizations for IBD were identified. Of these, 846,785 had the diagnosis of CD (73.3%) and 307,898 had UC (26.7%). The prevalence of VTE in CD and UC was 4.8 and 6.8 per 1,000 hospitalizations, respectively. Patients with VTE had significantly increased length of stay compared to those without VTE (CD: 11.6 vs 5.4; UC: 12.1 vs 5.9; each $p<0.001$). In multivariate logistic regression, when adjusting for age, gender, race, and type of insurance, the prevalence of VTE was greater in UC compared to CD (OR=1.4, 95%CI=1.2-1.6) and in African Americans compared to Caucasians (OR=1.3, 95%CI=1.1-1.6). Patients aged 30-59 had a higher risk of VTE than patients less than 30 years old (OR 1.23, 95%CI=1.016-1.494) but there was no significant risk difference at 60 years or older (p=0.5). Hospitalizations involving VTE had an increased rate of mortality (OR=3.3, 95%CI=2.4-4.6) compared to patients without VTE when controlling for other risk factors. Additionally, in patients with VTE, mortality was highest in the oldest age group (age>60, OR=4.7, 95%CI=1.3-17.5) and in UC compared to CD (OR=2.0, 95%CI=1.0-3.8).

Conclusion: In this large, nationwide sample of patients hospitalized with IBD, the presence of VTE results in increased length of stay and increased rates of in-hospital mortality. Fortunately, when compared to the nationwide sample of hospitalized IBD patients from 1998-2004, the overall prevalence of VTE has drastically decreased (21.0 to 6.8 per 1,000 hospitalizations for UC; 13.8 to 4.8 per 1,000 hospitalizations for CD). This update may reflect both an increased focus on recognizing VTE in the outpatient population as well as improved medical treatment of IBD with biologic therapies.

Abstract #40

Common Antibiotics Leading to an Uncommon Drug Reaction: A Case Report

Suri J, Levine E, Valdes-Rodriguez R, Aphale A, Taqui B

Objective: Recognize and manage acute generalized exanthematous pustulosis (AGEP) amongst the spectrum of potentially serious drug reactions.

Case: 69 year-old female with a history of documented allergies to clindamycin, penicillin, and azithromycin who presented for foul-smelling drainage from her decubitus ulcer at the right ischial tuberosity. Initially afebrile, she had leukocytosis and a CT scan concerning for osteomyelitis with an adjacent abscess. Twenty-four hours after empiric initiation of ciprofloxacin, metronidazole, and vancomycin, the patient developed an erythematous, macular, non-blanching rash. The following day this rash formed overlying micro-pustules at which point dermatology was consulted.

Discussion: Acute generalized exanthematous pustulosis is a severe cutaneous reaction on the spectrum including Steven Johnson syndrome (SJS) and drug reaction with eosinophilia and systemic symptoms (DRESS). AGEP occurs in 1-5 cases per million individuals per year. It is most commonly precipitated by drugs including aminopenicillins, quinolones, sulfonamides, diltiazem, and fluconazole. Studies have suggested that AGEP is a T cell mediated disease resulting in hundreds of small, sterile, non-follicular pustules on an erythematous base favoring intertriginous areas. Skin biopsy can help to confirm the diagnosis. The patient described here had a prior serious drug reaction requiring admission to a local burn unit. This case highlights the need for heightened suspicion of serious drug induced dermatologic reactions and illustrates the important steps needed for timely assessment and intervention. Careful interviewing and accurate medical history taking may also be of paramount importance considering some studies have shown that several patients experience a recurrence of this reaction.

Elevated Methane Levels in Small Intestinal Bacterial Overgrowth Suggests Delayed Small Bowel and Colonic Transit

Suri J, Kataria R, Malik Z, Parkman H, Schey R

Introduction: Small intestinal bacterial overgrowth (SIBO) causes flatulence and bloating. While jejunal aspirate cultures are the gold standard for diagnosis, lactulose breath testing (LBT) is an accepted alternative. Limited research exists regarding the relationship between SIBO, small bowel transit (SBT) and colonic transit (CT). Research is also limited between the subtypes of SIBO: hydrogen producing (H-SIBO) and methane producing (M-SIBO). We aimed to compare the SBT and CT in patients with a positive LBT to normal subjects, and between patients with H-SIBO and M-SIBO.

Methods: A retrospective review was performed for 53 patients who underwent a LBT and whole gut scintigraphy (WGS) between 2014 and 2016. WGS evaluated gastric emptying, small bowel transit (normal ≥ 40% radiotracer bolus accumulated at the ileocecal valve at 6 hours), and colonic transit (normal geometric center of colonic activity=1.6-7.0 at 24 hours, 4.0-7.0 at 48 hours, 6.2-7.0 at 72 hours; elevated geometric center indicates increased transit).

Results: 53 patients (47 female) were evaluated. Those with M-SIBO have a significantly slower SBT compared to H-SIBO (43% vs 77%; $p < 0.01$). For CT, M-SIBO had a significantly lower geometric center compared to the H-SIBO group at 24 hours (3.23 vs 4.70, $p < 0.01$), 48 hours (4.11 vs 5.54, $p = 0.01$), and at 72 hours (4.74 vs 5.94, $p = 0.03$).

Conclusions: Among subtypes of SIBO, M-SIBO has significantly more delayed SBT and CT when compared to H-SIBO. These results suggest the presence of delayed motility in patients with high methane levels on LBT.

Avoiding Food Allergens Associated with Type 4 Hypersensitivity Reactions Improves Symptoms of Irritable Bowel Syndrome: Long Term Follow-Up

Stierstorfer M, Toro B, Ehrlich A, Smith M

Background: Two recent proof-of-concept clinical studies provide evidence that skin patch testing may identify type 4 food allergies that contribute to symptoms of Irritable Bowel Syndrome (IBS). Patch test-directed food avoidance for up to one month improved IBS symptoms in a significant number of study participants.

Aims: We sought to determine whether IBS symptom improvement reported in a recent proof-of-concept study after one month of patch-test guided food avoidance was sustainable over a longer time frame with prolonged avoidance of the culprit foods identified by the patch testing, thereby decreasing the likelihood that placebo effect was the reason for improvement.

Methods: Individuals in a recent clinical study who reported improvement in their IBS symptoms following a patch test-guided food avoidance diet for one month completed a long term follow-up questionnaire measuring pain/discomfort and overall IBS symptom improvement three or more months after starting the avoidance diet.

Results: Mean abdominal pain/discomfort and overall IBS symptom improvement scores were maintained after an average follow-up of 7.6 +/-3.9 months.

Conclusions: Patch test-guided food avoidance may provide sustainable relief of IBS symptoms for three or more months, perhaps indefinitely, in individuals who have benefited after one month from the same measures. These findings support a role for delayed-type food hypersensitivities in the pathogenesis of IBS symptoms.

Immunosuppressive Therapy in Treatment of Refractory Hypoglycemia in Type B Insulin Resistance - Case Report with a Diagnostic Dilemma

Viswanathan L and Sirisena I

Introduction: Type B insulin resistance is a rare syndrome caused by autoantibodies to insulin receptor. It causes a spectrum of symptoms from severe hyperglycemia with insulin resistance to intractable hypoglycemia. Here we present a patient with Type B insulin resistance demonstrating the diagnostic dilemma in this condition.

Case report: A 60 y/o African American female with past history of SLE and Hashimoto's hypothyroidism presented with weight loss, nausea, vomiting and frequent episodes of hypoglycemia.

She had been similarly hospitalized one year prior. Labs were - Insulin 661 uIU/ml (2-19) Proinsulin 58.4 pmol/L(< 18.8) C-Peptide 9.1 ng/ml(0.8-3) HbA1C 7.3% with glucose 49 mg/dl. She responded to IVIg therapy (3 cycles) with prednisone 60 mg daily. She was discharged on insulin with new diagnosis of DM.

This admission she had hyperinsulinemia with hypoglycemia again. IVIg, Azathioprine and prednisone was given with cure. Insulin receptor antibody levels were positive during euglycemia.

Discussion: Insulin receptor autoantibodies produce biphasic response of hypo and hyperglycemia in the same patient. Antibody testing is preferable in the hyperglycemic phase. Despite lower antibody levels her clinical presentation, treatment response and the absence of these antibodies in the general population, are consistent with Type B insulin resistance. On literature review, there are rare case reports with spontaneous hypoglycemia and elevated antibody levels with no clear identifiable pathogenesis.Treatment is with large insulin doses or high dose steroids, immunosuppressants and plasmapheresis.

A high index of suspicion and low threshold for empiric treatment are required. Future research is needed to improve diagnosis and treatment of this disease.

Ceftaroline versus Vancomycin+/- Daptomycin for the Treatment of MRSA Endocarditis

Weber D, Fallis R, Azelrod P, Gallagher J

Background: Ceftaroline fosamil (TeflaroTM) is a broad-spectrum cephalosporin that has activity against methicillin resistant staphylococcus aureus (MRSA). Vancomycin and daptomycin are the currently approved first line agents for MRSA endocarditis, but emerging resistance and dose-dependent toxicity limit their use.

Study purpose: To compare the effectiveness and side effects of ceftaroline with those of vancomycin +/- daptomycin in the treatment of MRSA endocarditis.

Methods: We conducted a retrospective, matched cohort study of adult patients from Temple University Hospital. Patients were included if they were > 18 years of age with MRSA bloodstream infections meeting the DUKE criteria for definite endocarditis and received at least 24 hours of appropriate antibiotics. Patients were matched by age, sex, race, comorbidities, and affected heart valve.

Results: 18 patients were treated with ceftaroline and these were matched to 18 control patients. There was no significant difference between the ceftaroline and vancomycin +/- daptomycin groups in 30 day mortality (5.6% versus 11.1%), clinical cure (83.3% versus 77.8%), microbiologic cure (88.9% versus 100%), need for cardiac surgery (22.2% versus 11.1%), acute renal failure (22.2% versus 16.7%), adverse drug reactions (16.7% versus16.7%), or readmission at 30 days (27.8% versus 16.7%). 17/18 ceftaroline patients were initially given vancomycin (16) or daptomycin (1), but 8/18 controls were switched from vancomycin to daptomycin (p=.001).

Conclusion: Ceftaroline appears to be as effective and safe as vancomycin+/-daptomycin for the treatment of MRSA endocarditis. Switching antibiotics after initial vancomycin treatment occurred commonly in both groups, and more often than switching from ceftaroline therapy.

Abstract #45

Concordance of the Microscopic Analysis of Joint Aspirate for the Diagnosis of Gout

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Background: The gold standard test for the diagnosis of gout is polarized microscopic fluid analysis of joint aspirate. Joint aspiration is typically performed by either the Rheumatology, Orthopedic, or Podiatric Surgery services with definitive microscopic fluid analysis performed by Pathologists. However, it is common in clinical practice for the Rheumatology service to perform their own analysis. The objective of this study was to identify the concordance of the microscopic analysis of joint aspirate for the diagnosis of gout between the Pathology and Rheumatology services within a single health care center.

Methods: Following IRB approval, a retrospective analysis was performed utilizing a CPT code search to identify consecutive patients seen by Rheumatology for suspected lower extremity gout for which a diagnostic joint aspiration was performed. We searched for patients with a diagnosis of gout and synovial fluid on file. Patients were included if the synovial fluid specimen was obtained in the respective time frame and evaluated by both rheumatology and pathology. Multiple specimens from the same patient were included. A three-year data collection period (1/2013-12/2015) was utilized.

Our primary outcome compared concordance of microscopic analysis results between rheumatology and pathology. Joint aspirates were categorized into four groups: “no crystals”, “urate crystals”, “calcium pyrophosphate dihydrate crystals (CPPD)”, or “both crystals”. We defined “any disagreement” as findings between the two services not in the same category, and we defined “clinically significant disagreement” when one service observed any type of crystals while the other service observed no crystals.

Results: We identified 54 specimens from 42 patients who met study inclusion criteria. 26 (62%) of these patients were male. There was absolute agreement in findings between the two services in 35 (64.81%) cases, any disagreement in 19 (35.19%) cases, and clinically significant disagreement in 11 (20.37%) cases. The Rheumatology service was more likely to observe the presence of crystals in a sample when compared to the Pathology service (83.33% vs. 62.96%; $p = 0.029$).

Discussion: We observed a higher than hypothesized rate of disagreement between the Rheumatology and Pathology services when analyzing joint fluid for the presence of gout with a 20% clinically significant discordance rate.

Assessing and Improving Immunization Status in Patients with Rheumatoid Arthritis

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Objectives: Patients with Rheumatoid Arthritis (RA) are often treated with immunosuppressive therapy. The appropriate immunization of these patients is critical to prevent infection in the setting of immunosuppression. Several studies have shown that vaccination rates among RA patients is low, due in part to apprehension among primary care doctors as to the safety of the vaccines in the setting of immunosuppression.

Study Design: We performed a retrospective chart review to assess whether providers in the rheumatology practice addressed immunizations within their office notes in the one year prior to our intervention and compared rates to the five month period post-intervention. Our intervention included the creation and sharing of an EPIC smart phrase that included current guidelines for the administration of influenza, pneumonia, and shingles vaccines.

Methods: Patients 60 years and older with a diagnosis of RA were included. A total of 120 encounters were assessed in the pre-intervention phase, and 103 total encounters were included in the post-intervention phase. Provider encounters were assessed for documentation at any time within the study periods of a discussion regarding vaccinations, including influenza, pneumovax, and zoster vaccine.

Results: Influenza, pneumonia, and shingles vaccinations were addressed in 22%, 18%, and 9% of encounters prior to intervention and addressed in 32%, 32%, and 25% of encounters post-intervention, respectively. The largest improvement was seen in fellow encounters at 43%, 30%, and 10% pre-intervention and 77%, 73%, and 60% post-intervention.

Conclusions: Some improvement was seen after intervention, particular in fellow encounters.