The 7th Annual Department of Medicine Research Day

Special Grand Round Event
Department of Medicine Research Symposium for Fellows

Divisions of Cardiology, Endocrinology, Gastroenterology, Hepatology, Hematology/Oncology, ID&HIV Medicine, Nephrology, Pulmonary & Critical Care, Rheumatology, Sleep Medicine, Women’s Health and Internal Medicine Residents

WEDNESDAY, MAY 27th, 2015
GEARY AUDITORIUM “B” • 1ST FLOOR, New College Building

7:30 AM to 8:30 AM Poster Presentations in lobby of New College Building
8:30 AM to 9:30 AM Oral Presentations in Geary B auditorium

Dr. Nicholas Hinds
"Outcomes of Nighttime Refusal of Admission to the Medical Intensive Care Unit: The Role of the Intensivist in Triage"
mentor: EJ Yoo (Pulmonology)

Dr. Amir Kalani
"Recognizing the “Crisis Year” in adolescent Irritable Bowel Syndrome (IBS): Its Implications to Future Healthcare Utilization and an Effective Multidisciplinary Intervention to Reduce IBS Burden"
mentor: M. Lawson, Kaiser Sacramento (Internal Medicine and GI)

Dr. Eduard Koman
"Subcutaneous Implantable Cardioverter-Defibrillator: A New Era of Implantable Cardioverter-Defibrillators"
mentors: Kutalek, Fontaine, Saltzman, and Kusmirek (Cardiology)

Dr. Natasha Mehta
"Ultrasound-Induced Changes in Depolarization of Neonatal Ventricular Cardiomyocytes"
mentors: Drs. Kresh, Kutalek, Lewin and Kohut (Cardiology)

The Department of Medicine’s 7th Annual Research Day provides an opportunity for the Department of Medicine Fellows and Internal Medicine (IM) Residents to present their basic or clinical research projects either in an oral or poster presentation format to colleagues within the Drexel Community, thus celebrating research accomplishments and fostering new collaborations. IM resident abstracts will be reviewed by a panel of Dept. of Medicine faculty and the top 5 abstracts will be selected for oral presentations. All other IM resident submissions and all fellows will be assigned to poster presentations. IM resident talks and IM resident/fellow posters will be judged by DUCOM faculty and cash prizes will be awarded to the top presentations.

Sponsored by The Department of Medicine and the Internal Medicine Residency Program
### Abstracts page 3-8

<table>
<thead>
<tr>
<th>Abstract page #</th>
<th>Last Name</th>
<th>First Name</th>
<th>Co-authors</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Hinds</td>
<td>Nicholas</td>
<td>Nicholas Hinds, Borah, A., Yoo, E.J.</td>
<td>Outcomes of Nighttime Refusal of Admission to the Medical Intensive Care Unit: The Role of the Intensivist in Triage</td>
</tr>
<tr>
<td>6</td>
<td>Kalani</td>
<td>Amir</td>
<td>Amir Kalani, MD PhD1, Jessica Del Pozo PhD2, Tashia Orr BSc2, Michael Lawson MD PhD2 1Department of Medicine, Division of Internal Medicine, Drexel University School of Medicine 2Department of Gastroenterology, Kaiser Permanente Sacramento, CA</td>
<td>Recognizing the “Crisis Year” in adolescent Irritable Bowel Syndrome (IBS); Its Implications to Future Healthcare Utilization and an Effective Multidisciplinary Intervention to Reduce IBS Burden</td>
</tr>
<tr>
<td>7</td>
<td>Koman</td>
<td>Eduard</td>
<td>Eduard Koman MD, Ashwani Gupta MD, Faiz Subzposh MD, Ankur Tiwari MD, John M Fontaine MD, MBA, FHRS, S Luke Kusmirek MD, FHRS, Heath Saltzman MD, FHRS, Steven P Kutalek MD, FHRS</td>
<td>Subcutaneous Implantable Cardioverter-Defibrillator: A New Era of Implantable Cardioverter-Defibrillators</td>
</tr>
<tr>
<td>8</td>
<td>Mehta</td>
<td>Natasha</td>
<td>Natasha Mehta*, Randall A. Lee*, Youhan Sunny†, Chris Bawiec †, Steven P. Kutalek*, Peter A. Lewin†, and Andrew R. Kohut*</td>
<td>Ultrasound-Induced Changes in Depolarization of Neonatal Ventricular Cardiomyocytes</td>
</tr>
</tbody>
</table>
Outcomes of Nighttime Refusal of Admission to the Medical Intensive Care Unit: The Role of the Intensivist in Triage

Nicholas Hinds, Borah, A., Yoo, E.J.

Introduction: There is a growing body of literature evaluating the benefits of care provided by intensivists, or critical-care trained physicians. The benefit of increased exposure to intensivists at night remains controversial, particularly when trainees are available in-house for patient care. Critical care triage, although varying in practice, is one such patient care responsibility that is often tasked to the intensivist. At our institution, medical intensive care unit (MICU) triage is performed by a pulmonary and critical care medicine (PCCM) fellow, who is overseen by an intensivist. Nighttime triage requests differ because patients are not evaluated until the following day by the intensivist, whereas daytime requests are evaluated contemporaneously. Therefore, we compared outcomes of patients who are refused MICU admission overnight to those refused during the day. We hypothesized that patients deemed unsuitable for overnight MICU admission without immediate intensivist concurrence are more likely to require subsequent admission to an intensive care unit (ICU) during their hospitalization.

Methods: We performed a prospective observational study with retrospective follow-up of patients who were triaged and subsequently denied admission to the MICU from April 1, 2014 to May 31, 2015 at an urban university hospital. We compared the characteristics of patients who were refused admission during the day to those refused at night using chi-square, Fisher Exact, and t-test, as appropriate. We used the patient factors in the Mortality Probability Model (MPM0-III) to adjust for severity-of-illness. The primary outcome of interest was subsequent ICU admission. Secondary endpoints included disposition at discharge and in-hospital mortality.

Results: Of the 166 eligible patients, 105 (63.3%) were refused MICU admission overnight compared to 61 (36.7%) who were refused during the day. There was no difference in predicted MPM0-III mortality between the two groups (p = 0.40). Patients evaluated overnight were more likely to have a subsequent ICU admission during their hospital stay (OR = 0.24, p = 0.02). There were no observed deaths among patients who were denied MICU admission during the day. There was no significant difference in discharge disposition between patients triaged during the day vs. at night (p =0.24). For patients who were not staffed by attendings, there was no difference in subsequent ICU admissions (p=0.99).

Conclusion: Based on our analysis, patients evaluated overnight by a PCCM fellow alone at night are more likely to be re-admitted into an ICU than patients who are simultaneously evaluated during the day with an intensivist. However, whether or not the attending staffed the evaluation the same day or the next day had no influence on subsequent ICU admissions. Further studies need to be performed to assess the need for 24 hour in-house intensivists.
Table 1. Patient Demographics and Admission Characteristics*

<table>
<thead>
<tr>
<th></th>
<th>Daytime triage</th>
<th>Evening triage</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of patients</td>
<td>61 (36.7)</td>
<td>105 (63.3)</td>
<td>NA</td>
</tr>
<tr>
<td>Male sex</td>
<td>34 (55.7)</td>
<td>46 (43.8)</td>
<td>0.14</td>
</tr>
<tr>
<td>Age, y</td>
<td>59.3 ± 19.0</td>
<td>58.1 ± 17.8</td>
<td>0.68</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td>0.34</td>
</tr>
<tr>
<td>White</td>
<td>24 (39.3)</td>
<td>32 (30.5)</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>31 (50.8)</td>
<td>58 (55.2)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4 (6.6)</td>
<td>5 (4.8)</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>2 (3.3)</td>
<td>10 (9.5)</td>
<td></td>
</tr>
<tr>
<td>Triage location</td>
<td></td>
<td></td>
<td>0.68</td>
</tr>
<tr>
<td>Emergency department</td>
<td>40 (65.6)</td>
<td>70 (66.7)</td>
<td></td>
</tr>
<tr>
<td>Floor</td>
<td>17 (27.9)</td>
<td>28 (26.7)</td>
<td></td>
</tr>
<tr>
<td>PCU</td>
<td>3 (4.9)</td>
<td>7 (6.7)</td>
<td></td>
</tr>
<tr>
<td>Other ICU</td>
<td>1 (1.6)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Chronic diagnoses</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CKD</td>
<td>10 (16.4)</td>
<td>14 (13.3)</td>
<td>0.59</td>
</tr>
<tr>
<td>Cirrhosis</td>
<td>6 (9.8)</td>
<td>3 (2.9)</td>
<td>0.08</td>
</tr>
<tr>
<td>Metastatic neoplasm</td>
<td>2 (3.3)</td>
<td>14 (13.3)</td>
<td>0.05</td>
</tr>
<tr>
<td>Previous ICU admission during same hospitalization</td>
<td>6 (9.8)</td>
<td>6 (5.7)</td>
<td>0.32</td>
</tr>
<tr>
<td>Full code status</td>
<td>52 (85.2)</td>
<td>98 (93.3)</td>
<td>0.09</td>
</tr>
<tr>
<td>Pre-triage hospital LOS, d</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MPMⅢ, %</td>
<td>11.4 ± 11.6</td>
<td>10.9 ± 10.8</td>
<td>0.40</td>
</tr>
</tbody>
</table>

*Values given as mean ± S.D. or No. (%).

aProgressive care unit.
bIntensive care unit.

*Values given as mean ± S.D. or No. (%).
References


Recognizing the “Crisis Year” in adolescent Irritable Bowel Syndrome (IBS); Its Implications to Future Healthcare Utilization and an Effective Multidisciplinary Intervention to Reduce IBS Burden

Amir Kalani, MD PhD1, Jessica Del Pozo PhD2, Tashia Orr BSc2, Michael Lawson MD PhD2
1Department of Medicine, Division of Internal Medicine, Drexel University School of Medicine  
2Department of Gastroenterology, Kaiser Permanente Sacramento, CA

Background & Aims

Abdominal Pain is a frequent complaint in school-aged children. Irritable Bowel Syndrome (IBS) is suggested in 6% of middle school and 14% of high school students, causes significant morbidity, and is associated with various co-morbidities and significant healthcare utilization. A single pharmaceutical treatment has not been proven effective in its management, however, behavioral therapies have shown promise. Our primary aim was to design a comprehensive, cost-efficient behavioral program to reduce morbidity and healthcare utilization associated with IBS in adolescents.

Methods

The study group comprised of 105 predominantly adolescent patients ages 7-17 who were referred to and completed the program. Our control group was 101 children referred, but who did not attend. The groups were well matched for demographics and baseline healthcare utilization. The program comprised of a team of multi-disciplinary professionals who used techniques such as stress management, dietary modification, exercise, guided imagery, and patient and parental education to alleviate the morbidity of IBS. Medical records were reviewed for healthcare utilization four years before and after diagnosis.

Results

Compared to the control group, participants had significantly fewer GI-related visits (1.42 ±1.94 vs. 2.76 ±3.17 P< 0.001), mental health visits (6.07±8.21 vs 7.65±8.61, P< 0.01), GI-related imaging (0.54±1.11 vs. 1.26±2.26, P< 0.01), and total imaging (2.53±2.56 vs 4.21±4.96, P< 0.01). Overall visits were not significantly reduced (15.05±9.91 vs. 17.89±15.97, P= 0.81). The number of musculoskeletal, neurological, and atopic visits were unaffected. Yearly analysis of office visits demonstrated a pattern of increased healthcare utilization directly in the year following the diagnosis of IBS.

Conclusion

The year following the diagnosis of IBS, adolescents visit doctors frequently and utilize significant healthcare resources. This costly year is a "crisis" year. Adolescents with IBS that have higher mental health visits during the crisis year are more likely to continue to have GI-related visits 4 years after their initial diagnosis. A simple multimodal behavioral program offered shortly after diagnosis of IBS significantly reduces the healthcare utilization and imaging studies in the crisis year and continues to be effective four years after the intervention.

Please Note:

This is an ongoing research project that was started in 2006 at Kaiser Sacramento, which is affiliated with Drexel. As a Drexel resident over the last two years I have traveled to Sacramento on multiple occasions to gather and analyze data.

This research is IRB approved by Kaiser Permanente.
Subcutaneous Implantable Cardioverter-Defibrillator: A New Era of Implantable Cardioverter-Defibrillators


Background: Subcutaneous implantable cardioverter defibrillator (S-ICD) is the latest advancement in defibrillation therapy. It is approved for all patients with indications for ICD implantation, without any pacing indications. Despite initial studies showing good safety and efficacy, there are limited real world data available. We report our single, high-volume center experience with S-ICD implantation.

Methods: We retrospectively analyzed data regarding demographics, safety, efficacy and long-term follow-up of patients implanted with S-ICD at a major university center between October 2012 and October 2014.

Results: S-ICD was implanted in 74 patients, with a mean age of 54 ± 15 years (range 18-86). There were 58% males, 59% African-American and 38% Caucasian. 54% were implanted for primary prevention, 41% had ischemic cardiomyopathy, 41% non-ischemic cardiomyopathy, 23% were on dialysis and 20% had prior transvenous device extraction. Mean procedure time was 64 ± 14 minutes. Defibrillation threshold testing was performed in 89% of patients. It was initially unsuccessful in 3 patients; repeat testing was successful in two with reversed polarity and one required repositioning of the can. Median follow-up was 49 days (range 1-689). Three patients had peri-procedural complications - bradycardia requiring temporary pacing, hypercapnic respiratory failure and prolonged hypotension requiring inotropic support. There was no procedural mortality. Two patients died prior to discharge- one from intractable ventricular tachycardia due to non-revascularizable triple vessel coronary artery disease and one from mesenteric ischemia. Three patients died during follow-up (cause unknown). 4 patients had pocket infection with three requiring system removal. 13 patients (18%) received shocks- 6 had an appropriate successful shock and 7 had inappropriate shocks (3 from supraventricular tachycardia, 2 from noise sensing due to air in the pocket and 2 from T wave oversensing).

Conclusion: Our data confirms the safety and efficacy of the S-ICD in a real world setting. Careful patient selection is critical to improve short as well as long-term success. Continued evaluation of outcomes should reduce overall morbidity.
Ultrasound-Induced Inhibition and Modulation of Neonatal Ventricular Cardiomyocyte Depolarization

Natasha Mehta*, J. Yasha Kresh†, Steven P. Kutalek*, Peter A. Lewin† and Andrew R. Kohut*
*Department of Medicine, School of Medicine and †School of Biomedical Engineering, Science & Health System, Drexel University, Philadelphia, PA

Background: Ultrasound can interact with tissue through either thermal or non-thermal physical mechanisms. Radiation force has been shown to stimulate cardiac and neural tissue in vivo. Ultrasound might hold clinical potential as a noninvasive therapeutic tool via specific bioeffects on cardiomyocytes. This study aims to assess the effect of ultrasound on cardiomyocyte depolarization in a tissue culture model.

Methods: Cardiomyocytes were isolated from neonatal rat ventricular tissue and plated directly on microelectrode arrays to record depolarization patterns. A custom 2.5 MHz unfocused ultrasound transducer was directed at the cardiomyocytes in a tissue culture model. A function generator, with an amplified signal +50 dB, delivered acoustic energy at variable settings of 0.1, 0.3, 0.5 and 1.0 Vpp, pulse durations of 2, 5 and 10 ms, and burst periods of 100, 250 and 300 ms. Five trials were conducted at each setting (36 total trials) with 30s of continuous ultrasound exposure followed by an off interval of 1 minute.

Results: The R-R interval durations (ID) were measured throughout the recording period. Prior to ultrasound delivery, the IDs were highly irregular, ID range = 0.3 -2.7 s. As ultrasound was delivered in an asynchronous manner, using 0.1 and 0.3 Vpp and PD = 2 and 5 ms, there was suppression/inhibition of cellular depolarization for the first 5-10 s. Then 10-15 s after the start of ultrasound delivery, the depolarization rate increased and demonstrated less R-R interval variability (ID=0.88-1.03 s, P value<0.05), even after the ultrasound exposure.

Conclusion: Ultrasound can inhibit and modify the frequency of spontaneous electrical depolarizations of neonatal ventricular cardiomyocytes in a tissue culture model. Our observations could be due to conditioning via stretch and compression-mediated mechanosensitive pathways, by modifying intracellular calcium handling or altering cell signaling.
<table>
<thead>
<tr>
<th>Poster ID</th>
<th>Abstract Page #</th>
<th>Last name</th>
<th>First Name</th>
<th>Co-authors</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11</td>
<td>Kalani</td>
<td>Amir</td>
<td>Amir Kalani(^1), Ashley Curatola(^2) and Michelle Kutzler(^2)</td>
<td>Increased Transepithelial Electrical Resistance (TEER) of Caco-2 Cells in Presence of Vitamin D: Role of Intestinal Permeability in Clostridium Difficile Infection</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
<td>Kalani</td>
<td>Amir</td>
<td>Amir Kalani(^1), Tobias Zuchelli(^2), Nadia Nashed(^3), Eva Alsheik(^2)</td>
<td>Gastric Metastasis of a Rare Variant of Melanoma: An Uncommon Endoscopic Discovery</td>
</tr>
<tr>
<td>3</td>
<td>13</td>
<td>Kalani</td>
<td>Amir</td>
<td>Amir Kalani(^1) and Sonaly Patel(^2)</td>
<td>Fever and Transaminitis: Sole Manifestations of Enteric Fever in a Returning Traveler.</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
<td>Kohan</td>
<td>Pedram</td>
<td>Primary Author: Pedram Kohan M.D. PGY-1 Secondary Author: Christopher Haas M.D./PHD MS-3 Primary Mentor: Dr. Sandeep Aggarwal M.D.</td>
<td>Essential Cryoglobulinemic Crescentic Glomerulonephritis: A Case Report</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
<td>Grapp</td>
<td>Oleg</td>
<td>Oleg Grapp M.D., Christina Trotta M.D., Aswin Mathew M.D., Sahil Banka M.D., Scott Richards M.D.</td>
<td>Endometrial Ischemia Secondary to Untreated Fibroids as a Cause of Lactic Acidosis and Complete Heart Block Leading to Refractory Shock</td>
</tr>
<tr>
<td>6</td>
<td>16</td>
<td>Karajgikar</td>
<td>Neha</td>
<td>Neha Karajgikar1, MD, Alan Chang MD2, Barbara Simon2 MD, FACE</td>
<td>ANTIBODY NEGATIVE POST ABLATIVE GRAVES’ DISEASE FROM A MULTINODULAR GOITER</td>
</tr>
<tr>
<td>7</td>
<td>17</td>
<td>Weintraub</td>
<td>Zachary</td>
<td>Zachary Weintraub and Michael Stephen</td>
<td>EVALUATION OF ADHERENCE WITH INHALED ANTIBIOTIC REGIMENS AND OUTCOMES IN ADULTS WITH CYSTIC FIBROSIS</td>
</tr>
<tr>
<td>Poster ID</td>
<td>Abstract Page #</td>
<td>Last name</td>
<td>First Name</td>
<td>Co-authors</td>
<td>Title</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------</td>
<td>-----------</td>
<td>------------</td>
<td>------------</td>
<td>-------</td>
</tr>
<tr>
<td>8</td>
<td>18</td>
<td>Patel</td>
<td>Shivam</td>
<td>Shivam Patel, MD and Renee Amori, MD</td>
<td>Hypothyroid Myopathy Presenting as Rhabdomyolysis</td>
</tr>
<tr>
<td>10</td>
<td>20</td>
<td>Kaur</td>
<td>Sukhdeep</td>
<td>Sukhdeep Kaur MD¹, Courtney Ackerman MD, Hareesha Chakunta MD, Michael Styler MD¹</td>
<td>Myeloproliferative Neoplasms: Treatment Approach and Outcomes; The Drexel University Experience</td>
</tr>
<tr>
<td>12</td>
<td>23</td>
<td>Setyono</td>
<td>Devy</td>
<td>Jamael Hoosain, MD; Rosy Thachill, MD</td>
<td>Dysphagia as Manifestation of Left Ventricular Assist Device Pump Thrombosis Associated with Hemolysis</td>
</tr>
<tr>
<td>13</td>
<td>24</td>
<td>Setyono</td>
<td>Devy</td>
<td>James McCaffrey, Jamael Hoosain, Randall Lee, Perry Fisher, Farhan Hasni and Andrew Kohut</td>
<td>Revisiting Reynold's Pentad as clinical indicator of Acute cholangitis</td>
</tr>
<tr>
<td>14</td>
<td>25</td>
<td>Fisher</td>
<td>Perry</td>
<td>James McCaffrey, Jamael Hoosain, Randall Lee, Perry Fisher, Farhan Hasni and Andrew Kohut</td>
<td>The Use of Contrast Echocardiography to Identify Infiltrating Lymphoma in the Myocardium</td>
</tr>
</tbody>
</table>
Increased Transepithelial Electrical Resistance (TEER) of Caco-2 Cells in Presence of Vitamin D: Role of Intestinal Permeability in Clostridium Difficile Infection

Amir Kalani¹, Ashley Curatola² and Michele A. Kutzler²

¹Department of Medicine, Division of internal Medicine, Drexel University College of Medicine

²Department of Medicine, Division of Infectious Disease & HIV Medicine, Drexel University College of Medicine.

Introduction:

Clostridium difficile (C. difficile) is an anaerobic, Gram-positive, spore-forming rod associated with severe colitis leading to significant morbidity and mortality. Recent studies suggest a possible association between Vitamin D deficiency and C. difficile infection. The underlying mechanism in which vitamin D levels directly affect C. difficile infection has never been explored. Our primary aim was to explore a possible role of vitamin D on the intestinal permeability, which may explain its protective effect in C. difficile infection.

Methods

For our experiments, we used Caco-2 cells which morphologically and functionally resemble human enterocytes. Cells were grown until they reached confluence and then were incubated with media alone or with media containing 1nm or 10nm 1α, 25-dihydroxyvitamin D3. To explore barrier function, permeability of these cells was measured using Transepithelial Electrical Resistance (TEER). Cells were then incubated with C. difficle toxin and once a gain TEER was measured. In addition Lucifer yellow assay was used to further quantify cell permeability. Cell lysates and supernatants were also collected for cytokine analysis. Lastly, tight junctions of Caco-2 cells in absence or presence of various concentrations of vitamin D and C. diff toxino were visualized via microscopy using specific monoclonal antibodies against tight junction proteins such as ZO-1 and Actin.

Results

Our results indicated decreased membrane permeability as seen by increased TEER indicating improved barrier function. However, dose-response relationship was not seen. Incubation of the caco-2 cells with C. difficile toxin A in presence and absence of vitamin D revealed inconclusive results. Addition of vitamin D resulted in a morphologically different caco-2 cells with numerous epithelial projections.

Conclusion

Our initial experiments indicates that addition of vitamin D to caco-2 cells leads to improved barrier function. The underlying mechanism for increased TEER maybe due to cellular structural changes seen under microscopy in caco-2 cells in presence of vitamin D. Although at this point we are uncertain about the role of this transformation, we believe this transformation perhaps represents a more mature enterocytes which may also explain the protective effect of vitamin D in Inflammatory Bowel Disease (IBD).
Gastric Metastasis of a Rare Variant of Melanoma: An Uncommon Endoscopic Discovery

Amir Kalani¹, Tobias Zuchelli², Nadia Nashed³, Eva Alsheik²

¹Department of Medicine, Division of Internal Medicine, Drexel University College of Medicine
²Department of Medicine, Division of Gastroenterology, Drexel University College of Medicine,
³Department of Pathology Drexel University College of Medicine.

Malignant melanoma is one of the most aggressive human malignancies capable of metastasizing to various organs including the Gastrointestinal (GI) tract.¹ However, metastasis to the stomach is exceedingly rare as only 7% of all melanoma cases that metastasize to the GI tract are found in the stomach. Animal-type melanoma is a rare variant of malignant melanoma, with unique histopathological features commonly seen in melanocytic tumors found in grey horses.² Unlike conventional melanoma, animal-type melanoma has a more indolent course and distant metastasis with this variant is rarely reported in humans.

Here we report a case of a 68-year-old Hispanic male that presented to the outpatient office with one year history of progressively worsening abdominal pain. Six months prior to presentation the patient was diagnosed with malignant melanoma of right thigh (animal-type) and underwent wide local excision. Sentinel lymph node biopsy was positive, but right inguinal lymph node dissection was negative for melanoma in 11 out of 11 nodes. Endoscopic examination showed non-erosive gastritis and two 1mm black pigmented spots in the body of the stomach. Biopsies of these lesions were positive for animal-type melanoma. To our knowledge this is the first reported case of gastric metastasis of animal-type melanoma.
Fever and Transaminitis: Sole Manifestations of Enteric Fever in a Returning Traveler.

Amir Kalani¹ and Sonaly Patel²

¹Department of Medicine, Division of Internal Medicine, Drexel University College of Medicine
²Department of Medicine, Division of Gastroenterology, Drexel University College of Medicine

Approximately 400 cases of typhoid fever are diagnosed in the US each year. In most cases patients complain of fever, headache, malaise, anorexia, abdominal pain, diarrhea or constipation. Classic exam findings include a coated tongue (typhoid tongue), rose spots, fever, relative bradycardia, hepatosplenomegaly and altered mental status. Common laboratory abnormalities of infected patients include anemia, and leukopenia or leukocytosis. Typical time of exposure to presentation is usually 5 to 21 days.

Here we report a case of a 65 years old Bangladeshi male with no significant past medical history who presented with 5 days of fever and rigors. He traveled to the US from Bangladesh 28 days prior to onset of fever. He denied any history of headache, lethargy, abdominal pain, diarrhea, constipation, or change in stool color. The patient denied taking any medication for the past three months including over-the-counter medications. He also denied any alcohol use. Vital signs were only significant for fever of 102.1°F while physical exam only showed dry oral mucous membranes. Positive lab findings were elevated liver enzymes with AST 97 and ALT 100. All other laboratory values were within normal range including CBC and hepatitis serology. Due to elevated transaminitis a right upper quadrant ultrasound was performed which did not show any abnormalities. Due to ongoing fevers on broad spectrum antibiotics a CT scan of the abdomen was done to rule out abscess which showed multiple enlarged mesenteric lymph nodes but no other abnormalities. Blood cultures resulted positive for Salmonella Paratyphi A on day 2 of hospital stay. He was started on ciprofloxacin and subsequently his liver enzymes normalized and fever subsidized and he was discharged.

As noted above, the majority of typhoid fever cases present with GI symptoms, however this case presents rare findings of isolated fever and rigors and a history notable for an abnormally long period between exposure and onset of symptoms.
Crescentic glomerulonephritis is a rare pathological phenomenon characterized by damage to the glomerular basement membrane and progressive scarring of the functional kidney unit, the nephron. At a structural level, this phenomenon involves a sustained inflammatory reaction resulting in epithelial cell proliferation, leukocyte and fibroblast invasion, and deposition of fibrin and collagen, leading to hematuria, proteinuria, and gradual loss of kidney function. Though the pathophysiological mechanisms leading to the progressive decline of kidney function in crescentic glomerulonephritis are diverse, immune complex-mediated disease is a relatively common etiology occurring in 15-45% of cases and is characterized by granular deposits of immunoglobulins and complement on the glomerular tuft. Within the spectrum of immune complex-mediated crescentic glomerulonephritis, cryoglobulinemia is an exceedingly rare etiology, manifesting in middle-aged females in the 4th-5th decade of life. In these select cases a triad of purpura, arthralgia, and weakness generally precedes renal involvement. In this study, we report an atypical case of cryoglobulinemic crescentic glomerulonephritis in an 18-year-old African American Male who presented with recurrent microscopic hematuria and proteinuria and on kidney biopsy was found to have significant crescentic glomerulonephritis involving over 50% of glomeruli and immunohistological studies consistent with granular deposits within Bowman’s capsule. Consistent with current standard of care, treatment with high dose IV methylprednisolone was initiated with subsequent reduction in markers of kidney injury.
Endometrial Ischemia Secondary to Untreated Fibroids as a Cause of Lactic Acidosis and Complete Heart Block Leading to Refractory Shock

Oleg Grapp M.D., Christina Trotta M.D., Aswin Mathew M.D., Sahil Banka M.D., Scott Richards M.D.

We present a case of a 44 year old Hispanic female with a history of hypothyroidism, pulmonary embolism, h. pylori, bipolar disorder who presented with complete heart block due to severe lactic acidosis ultimately caused by untreated fibroids. The patient was found to be in complete heart block with a junctional rhythm which quickly deteriorated requiring trans-venous pacing. The patient’s condition continued to worsen requiring the use of vasopressors, intubation, empiric antibiotics and the initiation of continuous veno-venous hemofiltration for both acute kidney injury and severe lactic acidosis. Potential causes of lactic acidosis and potential sepsis were investigated including a negative trans-esophageal echocardiogram, an unremarkable exploratory laparotomy that was performed due to concern for ischemic bowel, negative blood cultures, a negative urinalysis, a negative chest x-ray, as well as a negative toxicology workup. After obtaining further history from the patient’s husband, who we were unable to reach earlier in the case presentation, it was elucidated that the patient had a complicated history of “uterine masses”, with a scheduled date for a hysterectomy at an outside hospital. A pelvic ultrasound showed the presence of fluid within the uterus as well as a thickened endometrium. Gynecology-oncology was consulted, and after discussion with the patient’s husband, a plan was made for urgent total abdominal hysterectomy with bilateral salpingo-oophorectomy. The operation was successful, and the patient was able to make a full recovery. Review of the pathology of the excised uterus showed uterine fibroids with evidence of early endometrial ischemia with dilated and congested vessels. Extensive review of the literature showed that this is the only reported case of uterine fibroids leading to endometrial ischemia as a cause of severe lactic acidosis leading to complete heart block.
ANTIBODY NEGATIVE POST ABLATIVE GRAVES’ DISEASE FROM A MULTINODULAR GOITER

Neha Karajgikar¹, MD, Alan Chang MD², Barbara Simon² MD, FACE

¹Department of Internal Medicine, ²Division of Endocrinology, Drexel University, Philadelphia, PA, United States

Background: Graves’ Disease and autonomous toxic nodules are separate entities of the thyroid gland that lead to hyperthyroidism. Radioactive iodine ablation therapy is a widely used treatment for both conditions. There have been a small number of cases of patients with toxic multinodular goiter (MNG) that transition to Graves’ weeks to months after ablation as a side effect of ¹³¹I treatment (1).

Case: A 68 year old female presented for a symptomatic multinodular goiter. Thyroid ultrasound showed a 1.4x1x0.8cm mixed echogenic nodule in the right midlobe and a right posterior subcentimeter hypoechoic nodule. The left lobe demonstrated a posterior 1.3x0.7x0.7cm mixed echogenic nodule. Thyroid function studies showed a suppressed TSH of 0.01 uIU/ml, free T4 of 1.6 ng/dl, and total T3 of 131ng/dl. Thyroid peroxidase antibody (TPO) and thyroid stimulating immunoglobulin (TSI) antibodies were negative. Thyroid uptake/sca showed a focal hyperfunctioning nodule in the right midlobe with the rest of the gland suppressed. She was started on methimazole and underwent a ¹³¹I ablation with a dose of 18.25mCi. Three months later, she had an elevated TSH of 32.69 uIU/ml and a free T4 of 0.5ng/dl. Levothyroxine therapy was started. A year post ablation, the patient had hyperthyroid symptoms and her TSH was suppressed at 0.01 uIU/ml with free T4 of 3.5ng/dl. Her Levothyroxine was eventually stopped. A second thyroid uptake/scan demonstrated even distribution of increased activity in both lobes with 72% uptake at 24 hours. She was restarted on methimazole and underwent another ablation with 13.69mCi ¹³¹I. She is currently on Levothyroxine and doing well.

Conclusion: The risk of developing Graves’ was found to be 1.3% in patients with a MNG post ablation and it increased almost 10 fold in patients who had elevated levels of anti-TPO prior to ablation (3). It has been suggested elevated anti-TPO is a marker for increased risk of developing Graves’ after radioiodine treatment (1,2).

References:

EVALUATION OF ADHERENCE WITH INHALED ANTIBIOTIC REGIMENS AND OUTCOMES IN ADULTS WITH CYSTIC FIBROSIS

Zachary Weintraub, Michael Stephen. Medicine, Drexel University School of Medicine, Philadelphia, PA, United States.

Introduction: CF is a disease with many complex treatment regimens with varying levels of patient adherence and satisfaction to therapy. Inhaled antibiotics came on the market in 1997 with TOBI (inhaled Tobramycin) followed by a number of other inhaled formulations such as Aztreonam, Amikacin and Colistin. These new inhaled antibiotics target therapy directly at the lung while minimizing systemic adverse reactions and side effects. Although inhaled antibiotics have revolutionized CF treatment, helping many patients to live beyond age 50, adherence is still reported to as low as 30% in prior studies. Studies which help clinicians to understand and address barriers to adherence are lacking. We aim to study patient satisfaction and adherence with inhaled antibiotic regimens and predict that low patient satisfaction and adherence will lead to frequent pulmonary exacerbations and greater declines in FEV1 levels. Methods: We administered the Treatment Satisfaction Questionnaire with Medicine (TSQM) survey to patients who use inhaled antibiotics at the Drexel University College of Medicine adult CF clinic. The TSQM is a well validated tool to measure patient satisfaction with medications. We then looked at Port CF and collected data regarding the frequency of pulmonary exacerbations as well as declines in FEV1 for these patients. Data Analysis: A correlation coefficient was calculated using TSQM score and number of pulmonary exacerbations during the defined study period. Results: Preliminary data on seven patients have so far been collected and analyzed. An R value of -0.45 was calculated from the data and although only a weak association it hints that CF patients who are not satisfied with their inhaled antibiotic therapy have greater rates of pulmonary exacerbations. Ongoing patient enrollment and data analysis will help define if a true relationship exists between patient reported inhaled antibiotic adherence and rate of exacerbations and FEV1 decline.
Hypothyroid Myopathy Presenting as Rhabdomyolysis

Shivam Patel, MD and Renee Amori, MD

Introduction:

Hypothyroidism as a cause of rhabdomyolysis is a relatively rare occurrence. Diagnosis of hypothyroid myopathies, and hypothyroid rhabdomyolysis in particular, is based on a constellation of signs and symptoms in conjunction with laboratory values. Recovery is not expected until adequate thyroid hormone replacement is initiated.

Case:

A 79 year old Caucasian male was admitted to our hospital after suffering a fall at his assisted living facility. He reported severe fatigue, diplopia, slowing of speech and movements, constipation, and muscle aches for several months prior to presentation. He had known hypothyroidism, but was not taking his levothyroxine 188mcg for several months. On physical exam, he had a temperature of 36.7 C, heart rate of 66 bpm, blood pressure of 149/51 mm Hg. He had reduced hearing, dysarthria, and delayed relaxation phase of deep tendon reflexes. There was 4/5 motor strength throughout all limbs with mild tenderness of the muscles of his bilateral lower extremities. Bloodwork revealed an initial creatine kinase (CK) of 1891 IU/L, creatinine 1.59 mg/dL, TSH of 147.2 uIU/mL, and an undetectable free T4. Initial EKG showed a marked PR prolongation of 400 msec. He was initially admitted with rhabdomyolysis and aggressively hydrated. His creatinine improved, but the CK rose to a peak value of 4536 IU/L on hospital day #3, after which levothyroxine 25mcg therapy was started. Frequent bradycardia was seen on telemetry monitoring. Levothyroxine was increased during the admission, initially to 50 mcg on hospital day #6 and to 75 mcg on hospital day #11 with a planned slow titration as an outpatient due to known cardiac disease. On discharge, his speech returned to baseline, and he was ambulating. The creatinine was 1.08 mg/dL and creatine kinase was 465 IU/L. He presented again two months later. The TSH improved to 45.42 uIU/mL and the CK was 129 IU/L.

Discussion:

The exact pathophysiology of hypothyroid myopathies is unknown. The severity of the myopathy is typically proportional to the degree and duration of the underlying hypothyroidism. Since our patient did not experience an improvement in his symptoms or CK levels until the initiation of levothyroxine, it is likely that his rhabdomyolysis was precipitated by his profound hypothyroidism. Although rhabdomyolysis is uncommonly caused by hypothyroidism, it should be considered in the differential diagnosis, especially for refractory cases or cases with other findings of hypothyroidism.
Levamisole-Adulterated Cocaine Causing Leukocytic Vasculitis: A Case Report

Mitchell Kang D.O., Bahar Sadjadi M.D., Rahul Mehta M.D.
Department of Internal Medicine, Drexel University College of Medicine
216 N. Broad Street, Philadelphia, PA 19102

Abstract

A rare case of a patient with a bilateral leg skin rash is presented in this case report. A 49 year old Caucasian male presented to the emergency room after using levamisole-adulterated cocaine, and developed a bilateral leg rash which was band-like in its distribution, forming rings around the circumference of his legs and tender. The diagnosis was made clinically based on initial presentation of the erythematous skin findings combined with the urine drug screen which was positive for multiple substances, including cocaine. A punch biopsy of the lesion was then obtained for confirmation, revealing leukocytic vasculitis. Treatment with systemic steroids and cessation of drug use led to the complete recovery of the rash. With the widespread prevalence of cocaine in the urban city setting, it is important for physicians to be aware of the adverse effects caused by this substance and its adulterants. Increased awareness of Levamisole and its popularity as a cutting agent in the illegal drug industry should help clinicians make quicker diagnoses with such dermatologic conditions, and lead to more rapid treatment for their patients.
Myeloproliferative Neoplasms: Treatment Approach and Outcomes, The Drexel University Experience

Sukhdeep Kaur MD1, Courtney Ackerman MD, Hareesha Chakunta MD, Michael Styler MD1, Division of Hematology and Oncology, Department of Medicine, Hahnemann University Hospital, Drexel University College of Medicine, Philadelphia, PA

Abstract

BACKGROUND

Myeloproliferative neoplasms are a group of clonal disorders that arise from a transformation in a hematopoietic stem cell. These disorders consist of chronic myeloid leukemia (CML), essential thrombocytosis (ET), primary myelofibrosis (PMF) and polycythemia vera (PCV). Several therapeutic agents have been used in the past to treat these disorders. Treatment strategies for these patients must consider the possibility of long-term survival, morbidity from thrombotic complications, transformation into myelofibrosis with myeloid metaplasia or acute myeloid leukemia, and the effect of specific therapies on the incidence of leukemic transformation and on pregnancy. At Drexel University, a significant number of patients were treated with busulfan and were thought to have a more favorable clinical course and increased survival in comparison to other agents. Due to the perceived side effects associated with busulfan, today the current preferred cytoreductive agent is hydroxyurea. In our study we analyzed the outcomes of patients treated in the practice of I. Brodsky Associates diagnosed with ET, PCV and PMF, who received a variety of treatment modalities, and compared their clinical courses to determine if there is a superior treatment.

METHODS

This study is a retrospective cohort study in which we examined the medical records of patients treated for the diagnoses of ET, PCV and PMF at Hahnemann Hospital-Drexel University College Medicine in the practice of I. Brodsky Associates from January 1960 to December 2013. The data was collected in a retrospective manner and the following variables were measured and compared: age of the patient; sex of the patient; demographics; cytogenetics; family history; baseline hemoglobin level, hematocrit level, platelet count and WBC count; JAK 2 V617F mutation status; initial erythropoietin level, red cell mass, oxygen saturation, presence of splenomegaly and B12 level; Bone marrow biopsy results; thrombohemorrhagic complications; transformation to acute leukemia, progression to myelofibrosis and development of secondary malignancies; and treatment with busulfan, aspirin with or without clopidogrel, anegralide, hydroxyurea, and phlebotomy. Data was collected from both paper and electronic charts to a Case report Form which was then categorized based on treatment. The treatment categories analyzed were: Busulfan Only, Hydroxyurea Only, Aspirin with or without Plavix only, Both Busulfan and Hydroxyurea, and Phlebotomy Alone. The forms were then analyzed using computer software and the number of observations, percentages, means, standard deviation, and minimum and maximum values were obtained for all measurements.

RESULTS

One hundred nineteen patients charts were reviewed and categorized based on treatment. Twenty-four patients were given aspirin alone, eleven received aspirin and phlebotomy, and one patient received interferon with aspirin. One progressed to myelofibrosis (4%), seven patients were noted to have recurrent thrombotic episodes in the form of TIA, CVA, DVT/PE, and MI (29%). Thirty four patients were given Busulfan with an average dose of 321mg during the course of the disease. One patient received chlorambucil with busulfan, and fifteen patients received Busulfan with phlebotomy. Four patients progressed to myelofibrosis with MM (11%) and one patient progressed to CML (3%). Six patients were noted to have thrombotic events in the form of CVA, MI, subclavian vein thrombosis and
carotid artery stenosis (17%). Twenty six patients were given hydroxyurea, with two patients receiving hydroxyurea with anegralide and five receiving hydroxyurea and phlebotomy. One patient's course was complicated by Hodgkin's lymphoma (4%), four patients progressed to acute leukemic blast crises (15%), and three patients progressed to myelofibrosis (11%). Eight patients were noted to have multiple thrombotic events in the form of CVA, DVT, TIA, splenic vein thrombosis, and renal artery stenosis (31%). Twenty four patients were given Busulfan and Hydroxyurea together during their course of treatment, with one patient receiving interferon with Busulfan and Hydroxyurea. The longest follow up was noted in this group with median follow up of 10 years. One patient had a complication of pulmonary HTN (4%), and two patients developed interstitial fibrosis (8%). Fourteen patients were noted to have multiple thrombotic events in the form of PVT, SMV thrombosis, PE, TIA, Budd Chiari syndrome and LE arterial thrombosis (58%). Two patients progressed to CML blast crises (8%) and three patients developed myelofibrosis with MM (12%). Eleven patients were treated with only phlebotomy. Five patients progressed to myelofibrosis with MM (45%). Two patients were noted to have thrombotic events that included MI or TIA (18%).

CONCLUSIONS

Myeloproliferative neoplasms have been treated in much the same way for many years although few physicians use busulfan as routinely as I. Brodsky Associates. Our study set out to discover if this unique treatment correlated with improved survival and less treatment toxicity. Busulfan and hydroxyurea given together proved to have the lowest rate of progression to leukemia and myelofibrosis when compared to other standard therapies. The median survival of patients treated with both busulfan and hydroxyurea was 17 years. Patients treated with hydroxyurea and intermittent busulfan, were shown to have the best long-term outcomes. This suggests that physicians should include the use of busulfan in treating myeloproliferative neoplasms.
Health Literacy and Gastroenterology: A Quantitative Readability Analysis of Patient Education Materials on the Internet


PURPOSE: As the American public is becoming more reliant on the Internet as a source of medical knowledge, ensuring that this information is comprehensible is of the utmost importance. The American Medical Association (AMA) and the National Institutes of Health (NIH) recommend that patient education materials be written between a 3rd and 7th grade level, given an 8th grade average reading level of the lay public. We aim to determine whether the gastroenterology information for patients available online meets the AMA and NIH readability guidelines.

METHODS: We evaluated 214 individual patient education articles available on the websites for the American College of Gastroenterology (ACG), the American Gastroenterological Association (AGA), the American Society of Gastrointestinal Endoscopy (ASGE), the British Society of Gastroenterology (BSG), and the NIH’s National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) with 10 well-established readability scales. One-way ANOVA and Tukey’s HSD post hoc analysis were conducted to determine any differences in the level of readability between websites.

RESULTS: The 214 articles were found to be written at an 11.8 ± 2.1 grade level with a range of 8.0 to 16.0 grade level. A one-way ANOVA and Tukey’s HSD post hoc analysis determined the ACG materials were written at a significantly (p<0.05) more difficult level when compared to the AGA, the BSG, and NIDDK websites. No differences were noted when comparing to the ASGE website.

CONCLUSIONS: None of the patient education materials evaluated were written at a level that met the AMA and NIH guidelines. This suggests that a redrafting of this information will likely lead to a more effective understanding of the material by the average American reader and ultimately may have an impact on healthcare delivery and outcomes.
Dysphagia as Manifestation of Left Ventricular Assist Device Pump Thrombosis Associated with Hemolysis

Devy A Setyono, MD, Jamael Hoosain, MD; Rosy Thachill, MD - Drexel University College of Medicine IM Residency

Left Ventricular Assist Device (LVAD) is a mechanical circulatory support that can be used to salvage the cardiogenic shock patient and as a bridge to transplant therapy or for destination therapy in advanced heart failure patients. Main complications specific to LVADs placement are driveline infection, postoperative bleeding, and thromboembolism. This case represents LVADs complication with evidence of ongoing intravascular hemolysis presenting as acute dysphagia and hematuria as non-cardiac manifestations. A 52 year-old male with nonischemic cardiomyopathy with ejection fraction of 5-10% treated with continuous-flow LVADs, presented for evaluation of acute dysphagia and dark urine. He reported abrupt onset of dysphagia with liquid and solid food 3 days prior to admission, followed with abdominal fullness and bloating, mild bilateral ankle swelling. Patient reported tea-colored-urine. He denied alarm dysfunction of his LVAD. Physical examination revealed a non-focal exam other than continuous hum of LVADs. Laboratories revealed elevated lactate dehydrogenase of 3,204 mg/dL, serum creatinine of 4.8 mg/dl (baseline from 1.50 to 1.70 mg/dl) and international normalized ratio of 2.3. A transthoracic echocardiography revealed no changes compared with one taken the previous year. Esophagogastroduodenoscopy showed moderate duodenitis with no evidence of bleeding, no esophageal strictures or rings. Due to high clinical suspicion of LVADs-hemolysis, unfractionated heparin drip was started. Over the course of heparin treatment, dysphagia completely resolved in 2 days, serum LDH and creatinine returned to normal and baseline levels in 5 days. His urine color gradually returned to normal color. Patient was discharged 3 weeks later without further complications. Dysphagia accompanied with a sharp rise of LDH level in the settings of LVADs pump may be indicate the presence of pump thrombosis related to intravascular hemolysis (IH). Heat generation and subsequent deposition of fibrin around the bearing narrows the inflow pathway, increasing shear stress on red cells. The complications of this hemolytic process cause worsening renal failure as seen in our patient from pigment nephropathy. IH has been linked to smooth muscle dystonia resulting in dysphagia and abdominal pain as is described in paroxysmal nocturnal hemoglobinuria. This case represents an example of a non-cardiac complication of LVADs with interesting pathophysiological consequences.
Revisiting Reynold’s Pentad as clinical indicator of acute cholangitis

Devy A Setyono, MD

Clinical manifestations are an important factor in making the diagnosis of acute cholangitis. In 1877, Charcot was the first to describe the clinical triad of fever, jaundice and abdominal pain as a clinical manifestation of acute cholangitis, and in 1959, Reynolds and Dragan were the first to describe a severe form of cholangitis that included Charcot’s triad plus septic shock and mental status change (Reynold’s Pentad). Reynolds’ pentad is extremely rare, reported in only 3.5%–7.7% of the patients. This case represents acute cholangitis manifested four out of five findings of Reynold’s Pentad. A 73 year old female with multiple comorbidities presented with fever highest at 104 degree with abdominal pain localized to right upper quadrant for 3 days. She denies nausea, vomiting and chills. Physical examination revealed blood pressure to be trending down from 128/78 on initial admission to 97/58 in the span of 3 hours. Eyes examination revealed mild icteric sclera bilaterally and under the tongue. Abdominal examination was positive for Murphy’s sign. She was mildly in distress but alert and oriented to person, time and place. Further laboratory workup revealed transaminitis with cholestatic pattern. Complete blood cell count did not reveal leukocytosis. Bedside abdominal ultrasound showed biliary sludge without evidence of stones, however common bile duct was noted to be dilated at 9 mm. Patient then underwent HIDA scan which revealed no uptakes of radiotracer dyes hence no visualization of biliary tracts. Patient was started on broad spectrum antibiotics that covers gram negative rods and anaerobic.
A 68-year-old African American man with past medical history of angioimmunoblastic T-cell lymphoma presented with weakness and fatigue for 2 weeks. Physical exam revealed tachycardia, muffled heart sounds and jugular venous distension. Transthoracic echocardiogram (TTE) without contrast was performed that showed a large pericardial effusion without evidence of tamponade physiology as well as the possibility of a left ventricular pseudoaneurysm. Repeat TTE was performed using IV contrast to evaluate the questionable pseudoaneurysm and further assess left ventricular wall motion. The study revealed the presence of multiple non-communicating hypodensities within the myocardium that were not appreciated on the previous TTE done 2 days prior. Pericardiocentesis showed bloody fluid whose cytology was inflammatory but negative for malignant cells or infection. He developed multifocal pneumonia and became septic. Unfortunately the lesions were not biopsied, as the patient’s level of care was changed to comfort measures only and family refused autopsy.

Echocardiographic contrast agents are indicated for delineation of the LV endocardium however its role in assessment of myocardial disease has not been defined. Contrast echocardiography has demonstrated an ability to better differentiate myocardial tissue with respect to myocardial blood flow. Intravenous contrast agents have been demonstrated to be useful in differentiating thrombi from benign and malignant neoplasms that are confined to the endocardium. We present a clinical example where non-contrast and contrast enhanced echocardiograms demonstrated remarkably different myocardial compositions. In our patient, contrast enhanced echocardiography identified infiltrating lymphoma in the myocardium that was not seen with standard 2D imaging. The use of contrast agents should be considered when evaluating patients with non-cardiac diseases that have the potential for infiltrating the myocardium.
<table>
<thead>
<tr>
<th>Poster ID</th>
<th>Abstract page #</th>
<th>Last Name</th>
<th>First Name</th>
<th>Co-authors</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>31</td>
<td>Tyris</td>
<td>Nickolas</td>
<td>Nickolas Tyris MD¹, Umair Ashraf MD¹, J. Steve Hou MD², Soumya Chakravarty MD¹, Humaira Hussain MD¹</td>
<td>Pseudoseptic arthritis: A case of acute monoarticular joint pain presenting a diagnostic dilemma</td>
</tr>
<tr>
<td>16</td>
<td>32</td>
<td>Arif</td>
<td>Nada</td>
<td>Drexel University College of Medicine: ¹Department of Medicine, Division of Rheumatology; ²Department of Pathology</td>
<td>An Interesting Case of Cavitary Lung Lesion</td>
</tr>
<tr>
<td>17</td>
<td>33</td>
<td>Chaudhari</td>
<td>Shilpa</td>
<td>Shilpa Chaudhari MD, Christopher Vinnard MD, MPH, MSCE</td>
<td>Racial Disparities Among Tuberculosis Deaths in United States, 2003-2013</td>
</tr>
<tr>
<td>18</td>
<td>34</td>
<td>Law</td>
<td>Nancy</td>
<td>Law N¹, Doyle AM², Sharma A², Malat G³, Bias T¹, Ranganna K², Lee DH¹</td>
<td>Characteristics of HIV Infected Patients Waitlisted for Kidney Transplantation</td>
</tr>
<tr>
<td>19</td>
<td>35</td>
<td>Law</td>
<td>Nancy</td>
<td>Lee DH¹, Malat G³, Law N¹, Sharma A², Bias T¹, Ranganna K², Doyle AM²</td>
<td>Role of Universal Decolonization after Renal Transplant: A pilot study.</td>
</tr>
<tr>
<td>20</td>
<td>36-40</td>
<td>Law</td>
<td>Nancy</td>
<td>Nancy Law D.O., M.P.H., Maureen Cassin, M.D.</td>
<td>A Rare Case of Osteomyelitis of the Hand Caused by Actinomycies</td>
</tr>
<tr>
<td>21</td>
<td>41</td>
<td>Chaudhari</td>
<td>Shilpa</td>
<td>Shilpa Chaudhari¹, Alden Doyle², Dong Heun Lee¹</td>
<td>A donor-derived Enterococcal Pyelonephritis in an HIV + Kidney Transplant Recipient</td>
</tr>
<tr>
<td>22</td>
<td>42</td>
<td>Jaspal</td>
<td>Sunjit</td>
<td>Sunjit Jaspal¹, Nancy Law¹, Shilpa Chaudari¹, Zsofia Szep¹</td>
<td>An Unusual Case of Cryptococcal Meningitis</td>
</tr>
<tr>
<td>24</td>
<td>44</td>
<td>Parikh</td>
<td>Ankit</td>
<td>Ankit Parikh, MD; Dong Heun Lee, MD; Matthew Antonello; Amy Althoff, MD; Sara Allen, CRNP,</td>
<td>Can We Re-engage Lost to Care HIV Infected Patients? Pilot Study from Urban Setting HIV Clinic</td>
</tr>
<tr>
<td>25</td>
<td>45</td>
<td>Cho</td>
<td>David</td>
<td>Cho, David MD; Kim, Marc MD; Ward, Kristine MD; Jain, Maneesh MD; Styler, Michael MD</td>
<td>Comparison of two conditioning regimens for hematopoietic stem cell transplant in patients with multiple myeloma.</td>
</tr>
<tr>
<td>Poster ID</td>
<td>Abstract page #</td>
<td>Last Name</td>
<td>First Name</td>
<td>Co-authors</td>
<td>Title</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------</td>
<td>-----------</td>
<td>------------</td>
<td>------------</td>
<td>-------</td>
</tr>
<tr>
<td>26</td>
<td>46-47</td>
<td>Tarigopula</td>
<td>Ravali</td>
<td>Tarigopula, Ravali; Getsy, Joanne; Kalfus, Robert; Ko, Anita; Wang, Julie.</td>
<td>PAP Compliance in Verbally vs. Visually Discussing PSG Findings in OSA</td>
</tr>
<tr>
<td>27</td>
<td>48</td>
<td>Sudhakar</td>
<td>Selvin</td>
<td>Selvin Sudhakar MD, Joanne Ilustre DO, Ruchi Patel MD, Gary S. Ledley MD</td>
<td>Wireless Implantable Hemodynamic Monitoring(CARDIOMEMS™) - A Technological Breakthrough in Heart Failure Management</td>
</tr>
<tr>
<td>28</td>
<td>49</td>
<td>Sudhakar</td>
<td>Selvin</td>
<td>Ruchi Patel MD, Joanne Ilustre DO, Selvin Sudhakar MD, Gary Ledley MD</td>
<td>Drug-coated balloon: The latest tool in the armamentarium of peripheral vascular interventions</td>
</tr>
<tr>
<td>29</td>
<td>50</td>
<td>Modi</td>
<td>Ronak</td>
<td>Modi, Ronak; Patel, Sahil R.; Arena, Rosemarie; Aradillas, Enrique; Ahmad, Asyia S.; Myers, Scott E.</td>
<td>CRPS and Gastrointestinal Dysmotility: A Prospective Study</td>
</tr>
<tr>
<td>30</td>
<td>51</td>
<td>Bole</td>
<td>David</td>
<td>David Bole-1, Barbara Simon-1, Renee Amor-1, Wilbur Bowne-2</td>
<td>Pheochromocytoma induced Hyperglycemia leading to misdiagnosis of Type 1 Diabetes Mellitus</td>
</tr>
<tr>
<td>31</td>
<td>52</td>
<td>Kheti</td>
<td>Yatin</td>
<td>Laura Panarey, Karthik Ranganna, Greg Malat, Suganthi Soundararajan, Alden Doyle,</td>
<td>Retrievable IVC Filter Selection and Success Rate at a Large Urban Tertiary Care Center</td>
</tr>
<tr>
<td>32</td>
<td>53</td>
<td>Panarey</td>
<td>Laura</td>
<td>Laura Panarey1, Gregory Malat2,3, Akshay Sharma1, Karthik Ranganna1, Dong Lee1, Stephen Guy3, David Reich3, Gary Xiao3 and Alden Doyle1</td>
<td>DE NOVO LUPUS NEPHRITIS IN A STABLE KIDNEY TRANSPLANT RECIPIENT:</td>
</tr>
<tr>
<td>33</td>
<td>54-55</td>
<td>Panarey</td>
<td>Laura</td>
<td>Laura Panarey1, Gregory Malat1,2, Laura Panarey3, Akshay Sharma3, Karthik Ranganna3, Dong Lee 3, Stephen Guy1, David Reich1, Gary Xiao1 and Alden Doyle3</td>
<td>Comparable Outcomes Found in HIV (+) and HIV (-) Kidney Transplant Recipients Who Received Similar Immunosuppression Protocols</td>
</tr>
<tr>
<td>34</td>
<td>56</td>
<td>Panarey</td>
<td>Laura</td>
<td>Gregory Malat1,2, Laura Panarey3, Akshay Sharma3, Karthik Ranganna3, Dong Lee 3, Stephen Guy1, David Reich1, Gary Xiao1 and Alden Doyle3</td>
<td>Donor Selection and Prophylactic IVIg for Induction Immunosuppression Improves Outcomes for HIV (+) Kidney Transplant Recipients</td>
</tr>
<tr>
<td>Poster ID</td>
<td>Abstract page #</td>
<td>Last Name</td>
<td>First Name</td>
<td>Co-authors</td>
<td>Title</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------</td>
<td>-----------</td>
<td>------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>35</td>
<td>57</td>
<td>Carpenter</td>
<td>Sweta</td>
<td>Sweta Carpenter, Rozina Ali, Akshatha Rao, Hasan Arif, Ziauddin Ahmed, Sandeep Aggarwal,</td>
<td>ULTRAPURE DIALYSATE ASSOCIATED WITH HIGHER SERUM ALBUMIN LEVELS IN DIALYSIS PATIENTS</td>
</tr>
<tr>
<td>36</td>
<td>58</td>
<td>Carpenter</td>
<td>Sweta</td>
<td>Sweta Carpenter, Rozina Ali, Sandeep Aggarwal</td>
<td>DOUBLE TROUBLE: A RARE CASE OF XANTHOGANULOMATOUS WITH SUPERIMPOSED EMPHYSEMATOUS PYELONEPHRITIS</td>
</tr>
<tr>
<td>37</td>
<td>59</td>
<td>Yballe</td>
<td>Maria</td>
<td>Maria B. Yballe, Purna B. Nandigam, Sandeep Aggarwal</td>
<td>NON-MECHANICAL NEW-ONSET PAINLESS HEMATURIA IN AN ELDERLY: ALTERNATIVE DIAGNOSIS</td>
</tr>
<tr>
<td>38</td>
<td>60</td>
<td>Yballe</td>
<td>Maria</td>
<td>Maria B. Yballe, Laura Panarey, Sandeep Aggarwal</td>
<td>SILVER NITRATE CAUTERY IN RECURRENT PERITONEAL DIALYSIS CATHETER EXIT-SITE INFECTION: A CASE REPORT</td>
</tr>
<tr>
<td>39</td>
<td>61</td>
<td>Doshi</td>
<td>Neil</td>
<td>Neil Doshi, MD1, Ritwick Agrawal, MD, FCCP2, Ishan Lalani, MBBS3, Julie A. Wang, MD1, Anita Ko, MD1, Joanne E. Getsy, MD, FAASM1</td>
<td>NIGHT TO NIGHT VARIABILITY OF APNEA-HYPOPNEA INDEX IN PATIENTS TREATED WITH POSITIVE AIRWAY PRESSURE THERAPY</td>
</tr>
<tr>
<td>40</td>
<td>62-63</td>
<td>Dago-oc</td>
<td>Joseph Rey</td>
<td>Joseph Rey C. Dago-oc, MD, Michael J. Stephen, MD, Aditya Kasarabada, MD</td>
<td>Diagnosing Tuberculosis At Hahnemann University Hospital: A Quality Improvement Project</td>
</tr>
<tr>
<td>41</td>
<td>64</td>
<td>Deshpande</td>
<td>Amit</td>
<td>Amit A. Deshpande, Disha Narula, Alden Michael Doyle, Gregory Malat.</td>
<td>THE CORRELATION BETWEEN eGFR with DEGREE OF ALLOGRAFT HISTOLOGICAL CHANGES IN HIV + KIDNEY TRANSPLANT RECIPIENTS.</td>
</tr>
<tr>
<td>42</td>
<td>65</td>
<td>Narula</td>
<td>Disha</td>
<td>Disha Narula, Amit Deshpande. Shabnum Haleem Hasan Arif</td>
<td>Role of RRT in Fiorcet overdose</td>
</tr>
<tr>
<td>43</td>
<td>66</td>
<td>Nandigam</td>
<td>Purna</td>
<td>Purna Bindu Nandigam1*, Talal A. Khan1, Ankit Parikh2, Amit A. Deshpande1, Gregory Malat1, Akshay Sharma1, Karthik M. Ranganna1, Dong heun Lee2 and Alden Michael Doyle1.</td>
<td>Immunization Status of HIV positive Patients on Kidney Transplant List: A Single Center Experience</td>
</tr>
<tr>
<td>Poster ID</td>
<td>Abstract page #</td>
<td>Last Name</td>
<td>First Name</td>
<td>Co-authors</td>
<td>Title</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------</td>
<td>-----------</td>
<td>------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>44</td>
<td>67</td>
<td>Sureja</td>
<td>Dhaval</td>
<td>Dhaval Sureja, Kenneth Lau, Gregory Malat, Stephen Guy, Karthik Ranganna, Alden Doyle,</td>
<td>Routine Employment of Intraoperative Continuous Renal Replacement Therapy for Liver Transplantation was Safe and Effective</td>
</tr>
<tr>
<td>45</td>
<td>68</td>
<td>Shabnum</td>
<td>Haleem</td>
<td>Shabnum Haleem, Talal A. Khan, Gregory Malat, Karthik M. Ranganna, and Alden Michael Doyle.</td>
<td>LOW RATE OF BK VIREMIA AND NEPHROPATHY IN LARGE SINGLE CENTER SERIES OF HIV+ KIDNEY TRANSPLANT RECIPIENTS</td>
</tr>
<tr>
<td>46</td>
<td>69</td>
<td>Ali</td>
<td>Rozina</td>
<td>Rozina Ali, Sweta Carpenter, Maria Yballe, Hasan Arif, Sandeep Aggarwal,</td>
<td>NEPHROLOGY AS A CAREER CHOICE – TRENDS FROM URBAN TEACHING HOSPITALS:</td>
</tr>
<tr>
<td>47</td>
<td>70</td>
<td>Ali</td>
<td>Rozina</td>
<td>Rozina Ali, Akshatha Rao, Karthik Ranganna, Greg Malat, Alden Doyle</td>
<td>FIRST REPORT OF HUMAN INTESTINAL SPIROCHETOSIS IN KIDNEY TRANSPLANT RECIPIENT</td>
</tr>
</tbody>
</table>
Pseudoseptic arthritis: A case of acute monoarticular joint pain presenting a diagnostic dilemma

Nickolas Tyris, Rheumatology Fellow, Drexel University College of Medicine; Umair Javed Ashraf, Resident Physician, Drexel University College of Medicine; Humaira Hussain, Attending Physician, Department of Rheumatology, Drexel University College of Medicine

A 41 year old African American female presents to the ER with 2 weeks of left knee pain and swelling, progressively worsening until she could no longer bear weight. The joint was aspirated and sent for gram stain, culture, cell count and crystals, which revealed a WBC count of 101,000 and a negative gram stain and culture. Other important labs from the ER included a white blood cell count of 13.3, a CRP of 27.3, and an ESR of 52. Septic arthritis was suspected, and the patient was started on vancomycin and ceftriaxone, admitted to orthopedics, and taken to the operating room for irrigation and debridement of her left knee with synovectomy. Suspicion for an alternate diagnosis grew as the patient remained afebrile throughout her stay, all cultures remained negative, and the arthritis not only did not improve while on antibiotics, but actually worsened and expanded into a symmetric polyarthritis involving the wrists, ankles, shoulders, and knees. Rheumatology was consulted, and serologies showed a strongly positive RF and CCP (325 and >250 respectively). After a multi-team discussion, it was decided to discontinue the antibiotics and to start prednisone 20mg daily until her outpatient followup with rheumatology. It was discovered that the patient had a similar presentation of her knee approximately 7 months ago at an outside hospital. Medical records obtained from the hospital reported that she had an arthroscopic I&D of her left knee and once again, the cultures were negative from that time with the biopsy showing synovial hyperplasia. The patient improved dramatically with prednisone. At her first outpatient appointment, she was started on MTX with the hope of tapering her off steroids completely.

Conclusion: Pseudoseptic arthritis is an inflammatory arthritis that mimics sepsis in terms of history, clinical presentation, and labs. Rheumatoid arthritis as part of the pseudoseptic arthritis spectrum should be included in the differential diagnosis of patients presenting with an acute monoarthritis with no known bacterial source.
An Interesting Case of Cavitary Lung Lesion

Nida Arif MD, Shilpa chaudhari MD, Amy Baranoski MD

Brief history:

A 62 y/o female with PMH of DM, pancreatic cancer treated with chemotherapy and Whipple’s 3 months ago presented with complaint of headache and productive cough for a week. She reported subjective fevers and chills for past few days. On presentation she had a temperature of 100.8 and WBC 18000 cells/mm2 with left-shift. Initial Chest Xray showed large mass-like consolidation in the right upper lobe. Vancomycin, Cefepime and levaquin were administered for HCAP. Patient developed chest pain with shortness of breath prompting chest CT. This CT showed right sided cavitary lesion. Lung biopsy showed acute inflammation but no malignancy. Cultures from the biopsy had no growth but had GNR on gram staining. Several sputum and Bronchoalveolar Lavage cultures had similar findings. Her urine legionella antigen was negative. Empiric antibiotic therapy was deescalated to Cefepime. Patient was discharged on Cefepime for four weeks to treat necrotizing pneumonia. She got re-admitted for hemoptysis after 4 weeks of discharge.

Final Diagnosis:

Several weeks later we received result of 16S Ribosomal study which showed presence of Legionella Dumoffii. On re-admission she was put on Levaquin. Her hemoptysis improved quickly. Repeat CT chest showed improvement in the cavitary lesion with thinning of the walls.

Discussion:

Although 90% of Legionella infections in humans are caused by Legionella Pneumophilia, there are 45 named species of Legionella. Legionella Dumoffii AKA Fluoribacter dumoffii, is a GNR, from genus legionella. First described as a pathogen to cause pneumonia, by Brenner et al in 1980. Only one other case of cavitary lung lesion is reported in the literature by Zasshi et al who described 2 cases of fulminant pneumonia, one of these cases it caused necrotizing cavity formation.

As we know that Legionellae are fastidious GNR, does not grow on standard media. In our patient as well the organism failed to grow on standard media. The commercially available Legionella urinary antigen cannot be used as a reliable method to diagnose Non-Pneumophilia subtypes of Legionella. Analysis of 16S RNA analysis is a reliable methods of speciation.

The cavities often enlarge with progressive thinning of the walls, may occur during therapy with clinical improvement. Cavitation of infiltrates appears to be related to the patients' underlying immune status. Two groups found to be at higher risk are solid organ transplant recipient on steroids.

Conclusion:

We are describing a case of L. Dumoffii cavitary pneumonia which has been described only once before in literature. Legionella species other than pneumophilia are less common but are known to cause nodular and cavitary lung disease in immunocompromised patients. Making a diagnosis is challenging but should be considered in immunocompromised patient with cavitary lung lesion.
Racial Disparities Among Tuberculosis Deaths in United States, 2003-2013

Shilpa Chaudhari MD, Christopher Vinnard MD, MPH, MSCE

Background: Racial disparities exist in rates of tuberculosis (TB) incidence and mortality in the U.S.. Recent work has shown that both host and pathogen genetics contribute to the development of TB of the central nervous system (CNS), the most devastating clinical manifestation of TB. Our objective was to determine whether race and ethnicity are associated with the development of CNS disease among patients dying of TB in the U.S..

Methods: We obtained mortality data from the National Center for Health Statistics (NCHS), which receives information from death certificates from all 50 states, including demographic information and cause of death. The U.S. Multiple Cause of Death Files were searched from 2003 through 2013 for a listing of TB as the primary cause of death (ICD10 codes A16-A19). We first examined the overall distribution of race and ethnicity among patients dying of TB in the U.S.. In order to test the hypothesis that race/ethnicity would be associated with CNS disease, we compared the demographic characteristics of patients having pulmonary TB as the primary cause of death with patients having CNS TB as the primary cause of death.

Results: Over a 10-year period (2003-2013), TB was the primary cause of death among 6,573 individuals in the U.S.: 4,959 (75%) with pulmonary TB, 910 (14%) with extra-pulmonary (non-CNS) TB, 160 (2%) with CNS TB, and 544 (8%) with miliary TB. Compared with pulmonary TB deaths, deaths due to CNS TB were more likely to occur in younger age groups (p<0.001) and among non-White race/ethnicity groups (23% vs. 43%, p<0.001). In multivariate logistic regression, after adjusting for age and sex, race/ethnicity remained significantly associated with CNS disease among all TB deaths.

Conclusion: We observed racial disparities in the clinical manifestation among patients dying of TB in the U.S. over a 10-year period. The contribution of co-morbid conditions (including HIV and diabetes mellitus) will be examined in future analyses.
Characteristics of HIV Infected Patients Waitlisted for Kidney Transplantation

Law N 1, Doyle AM 2, Sharma A 2, Malat G 3, Bias T 1, Ranganna K 2, Lee DH 1
(1) Division of Infectious Diseases and HIV Medicine, (2) Division of Nephrology, (3) Department of Surgery, Drexel University, College of Medicine, Philadelphia, PA.

Introduction:
Kidney transplantation in HIV+ individuals has been associated with patient and graft survival rates that are comparable to those reported for HIV- populations. Despite this success, there are a number of well-reported complexities that must be managed in order to achieve this success. Less is known, however about how the transplant evaluation and listing process may differ for HIV+ patients.

Methods
We performed a single center chart review of consecutive patients who were listed from January 1, 2010 to April 30, 2014 in order to better understand the process and timing of kidney transplant evaluation. We focused on features related to the HIV therapy including cART (combination antiretroviral therapy), co-morbidities, and timing of listing and activation.

Results
Forty-four patients were evaluated. The median age of the cohort was 53 years old and 86% were African-American. At the time of evaluation, 91% were already receiving dialysis at a median of close to two years (624 days, IQR 115, 1435). Among the patients listed (status 7), three quarters completed the work up and were activated. The median time to be on active on the transplant list from the point of evaluation was 235 days (IQR 91, 578). One patient in five had viral hepatitis and only two (5%) had a history of opportunistic infection. HIV infections were relatively well controlled with median CD4 count of 561 cells/mm 3 and 88% had controlled viremia (Viral load < 200 copies). A resistance profile was available for only a small group (5%). Close to half of the patients (46%) were taking a protease-based cART.

Discussion
In our cohort HIV+ patient who were evaluated and listed for kidney transplantation the majority were on dialysis at the time of initial presentation and appeared to require a prolonged time to complete the evaluation. We found that the majority of patients were treated with cART that had interactions with immunosuppressive drugs. Successful evaluation and transplantation of HIV+ patients requires a coordinated multidisciplinary effort. To improve this process we suggest (1) early referral of HIV infected patients to centers performing HIV transplantation, (2) establish a support system to accelerate the evaluation process, and (3) work closely with HIV health-providers to adjust cART and obtain accurate information that might be critical for future transplantation.
Role of Universal Decolonization after Renal Transplant: A pilot study.

Lee DH¹, Malat G³, Law N¹, Sharma A², Bias T¹, Ranganna K², Doyle AM²
(1) Division of Infectious Diseases and HIV Medicine, (2) Division of Nephrology, (3) Department of Surgery, Drexel University, College of Medicine, Philadelphia, PA.

Introduction
Infection is a common cause of morbidity and mortality after kidney transplantation. Despite careful pre-transplantation screening of donors and recipients, vaccination, prophylaxis, and antimicrobial use, controlling infection at the early transplant period remains challenging. We sought to extend the well-documented successes of ICU use decolonization by specifically evaluating the safety and efficacy of universal application with chlorhexidine and mupirocin to incident kidney transplant patients.

Methods
We compared a single center consecutive cohort of kidney transplant recipients who underwent universal decolonization from March 1, 2014 to October 31, 2014 with a cohort of transplanted patient from an era immediately prior to the institution of the decolonization protocol. Universal decolonization was performed using nasal mupirocin oint and daily chlorohexidine body wash (intervention group). The following clinical outcomes were assessed: Microbiologically proven clinical infection rate in 30 days, *Staphylococcus aureus* infection rate, readmission rate in 30 days and adverse outcomes.

Results
Twenty-six patients who underwent universal decolonization were compared to 44 patients in control group. Median age was 52 year old (IQR 40, 61) and 50 (71.4%) received deceased donor renal transplantation. Twelve (17.1%) had history of infection or colonization with multidrug resistant organism. Three (4.3%) microbiologically proven infections occurred; each of these in the control group (2 urinary tract infection and 1 wound infection) compared to none in intervention group. None had *Staphylococcus aureus* infection. Twenty (29%) were readmitted in 30 days after discharge, 6 (23%) in intervention group and 14 (32%) in control group. None in intervention group had adverse effect from mupirocin and chlorohexidine use.

Conclusion
In our cohort of kidney transplant recipients, a significant number of patients had history of infection or colonization with multidrug resistant organisms. The use of a universal decolonization protocol was well-tolerated and appeared to be associated with a reduced incidence of nosocomial infections. Universal decolonization should be considered as an easy and safe component of an infection control regimen for kidney transplant recipients.
A Rare Case of Osteomyelitis of the Hand Caused by Actinomyces

Nancy Law D.O., M.P.H., Maureen Cassin, M.D.

Actinomyces has been called the “most misdiagnosed disease” due to many physicians missing the acute or early phase of the disease. The organism is known for its slow, contiguous growth that ignores tissue planes and forms a sinus tract that can spontaneously heal and recur. This characteristic allows the organism to evade even the most knowledgeable clinician.

Cutaneous actinomycotic infections are extremely rare and are usually a result from wounds contaminated with saliva or dental material. Examples include human bites and fist fights, and as a result it earns its name “Punch actinomycoses”. Osseous involvement, which is also very uncommon, usually results from direct extension of the adjacent soft tissue focus. This leads to periostitis and eventually to localized areas of bone destruction which are surrounded by areas of increased bone density. There have only been 12 cases of reported primary actinomycosis of the hand in medical literature as recently as 1998. We would like to report on the 13th case which is a rare example of hand osteomyelitis secondary to actinomyces.

A 35-year-old African-American male with no past medical history presented right hand pain, swelling and a nodular lesion. The patient had a history of trauma to the right hand 4 months prior as a result of punching someone in the mouth. This resulted in an open wound to the dorsum of the right hand over the 4th metacarpal. The patient was initially prescribed antibiotics at an outside-hospital emergency department, but the patient never filled his prescription. The wound healed and the patient returned to his work as a chef. Three months prior to admission, the wound opened again after he was once again involved in an altercation. The wound healed again without medical intervention. Three weeks prior to admission, the patient noted “discomfort” of the right hand. He stated it was, at first, a “bump” which he described as a “pimple” over the dorm of the right hand. The pain became progressively worse and it began to radiate up the patient’s right arm. He denied any erythema or drainage. The patient had also been involved in helping his grandmother with renovations around her house at this time, but he denied any further hand trauma. The patient also complained of some sweats and chills. The physical exam was only positive for the right hand swelling with stitches, a round nodule located on the palm, and the patient's strength of grip was noted to be slightly decreased. (See Figure 1, 2 and 3). An X-Ray of the right had showed an old right 5th metacarpal factor deformity. An MRI scan reported osteomyelitis of the right 4th metacarpal, along with associated moderate surrounding soft tissue swelling and cellulitis. Edema and an enhancing phlegmon extending into the palmer surface were also seen. The patient was then taken to the operating room for debridement. The patient was initially prescribed intravenous Vancomycin and Unasyn. Unasyn was changed to Meropenem due to the frequency that Unasyn was used. However, 3 days after cultures were taken, it was reported that the tissue/biopsy of the right tissue flexor sheath was going actinomyces. Due to this new revelation, we discontinued Vancomycin and Meropenem and started Pencillin. The regimen required 3 million units every 4 hours with plans to treat with the IV form for 4 months, then prescribe oral penicillin for the following 6 to 12 months.

Our case emphasizes the characteristic slow and contiguous growth of actinomyces. Our case also reports the 13th known case of actinomyces osteomyelitis in the medical literature. It is critical that when clinicians approach patients suffering from trauma resulting from contact with oral cavities, they should consider these organisms in the treatment. Due to the rarity of cutaneous or osteomyelitis originating from this organism, along with the prolonged therapy required, further research is needed.
Figure 1: Palmer surface of right hand status post incision and drainage
Figure 2 and 3: Dorsal aspect of right hand

Figure 4 and 5: Gram Stain of Tissue/Biopsy of Right Flexor Sheath showing Actinomyces.
References:


A donor-derived Enterococcal Pyelonephritis in an HIV + Kidney Transplant Recipient

Shilpa Chaudhari¹, Alden Doyle², Dong Heun Lee¹
¹Division of Infectious Diseases and HIV Medicine, ²Division of Nephrology, Drexel University College of Medicine, Philadelphia, PA

Introduction:
Donor-derived infections are an unusual but recognized complication of solid organ transplantation. Herein, we describe a case of donor-derived enterococcal pyelonephritis in a kidney transplant recipient with HIV infection.

Case:
A 44-year-old male with HIV infection with CD4 counts of 534 (41%) cells/mm³ and undetectable viral load, end stage renal diseases, and hypertension underwent successful deceased donor kidney transplantation. Cefazolin was given for surgical prophylaxis. Induction therapy consisted of basiliximab/intravenous immunoglobulin followed by maintenance therapy with tacrolimus, mycophenolate mofetil (MMF) and prednisone. On post-transplant day 3, the organ procurement organization (OPO) notified donor urine culture with Enterococcus faecalis. He was empirically treated with intravenous ampicillin based on susceptibility of donor organism. He later developed clostridium difficile associated diarrhea. Ampicillin was stopped after 6 days of treatment course. On post-transplant day 17, he presented with urinary retention and elevated creatinine. He denied urgency, dysuria, frequency, nausea or vomiting. His urine and blood culture grew Enterococcus faecalis that had same susceptibility pattern of that from donor kidney. Patient was re-treated with intravenous ampicillin for donor-derived enterococcal infection.

Discussion:
This case demonstrates probable transmission of donor-derived enterococcal infection despite timely initiation of appropriate antimicrobial therapy. Despite awareness of the risk within the transplant community, there is no clear consensus on treatment regimens for donor-derived infections, so treatment decisions are made on a case by case basis. The decision to extend duration of antimicrobial therapy is balanced by risk of infection and potential adverse effects of antimicrobial use. Because of the large amount of morbidity and mortality associated with these post-transplant infections, we suggest that further research on prevention and treatment of donor derived infections is warranted.
An Unusual Case of Cryptococcal Meningitis

Sunjit Jaspal¹, Nancy Law¹, Shilpa Chaudari¹, Zsofia Szep¹

¹Drexel University College of Medicine, Department of Medicine, Division of Infectious Diseases and HIV Medicine

Introduction:

Cryptococcal meningitis is an opportunistic infection that occurs mainly in HIV-infected patients with advanced immunosuppression due to untreated AIDS. Management includes combination antifungal and antiretroviral therapy. Cryptococcal meningitis can pose a diagnostic challenge since cryptococcal cultures have a low sensitivity. Cryptococcal antigen testing by latex agglutination, a rapid test has become the standard tool to assist in diagnosis. We present a case of cryptococcal meningitis in a nonimmunosuppressed patient with HIV infection with a CD4 count of 443 cell/UL and undetectable HIV viral load with negative cerebral spinal fluid (CSF) cryptococcal antigen and fungal cultures.

Case Description:
32 year old man with hx with HIV CD4 count of 443 cell/UL and undetectable viral load on atripla who was admitted to Hahnemann University Hospital with worsening headaches and blurry vision of several months duration. He was diagnosed with HIV four years earlier when he was hospitalized with cryptococcal meningitis with a CD4 cell count of 10 cells/UL. He was most recently hospitalized at an outside hospital 1 month earlier with similar symptoms and was discharged on prednisone. His symptoms initially improved but have been worsening over the past few weeks. MRI of the brain showed patchy meningeal thickening and enhancement similar to that seen 1 month earlier. CSF analysis showed 1 RBC, 20 WBCs (95% lymphocytes), protein 73 mg/dL and glucose 55 mg/dL. The CSF cryptococcal antigen was negative. CSF routine and fungal cultures remained negative. Serum cryptococcal antigen was 1:32. On CT of the chest patient was noted to have nonspecific subcarinal and right hilar lymphadenopathy. He underwent endobronchial ultrasound guided final needle aspiration which showed marked inflammation and fungal organisms consistent with Cryptococcus. Patient was started on antifungal therapy and his symptoms of headache and blurry vision improved on treatment.

Discussion:
Cryptococcal meningitis maybe underdiagnosed in non immunosuppressed patients since there seems to be a higher rate of false-negative antigens and false-negative fungal cultures in this population. Treatment of this disease includes antifungal medications which have high toxicity as well as antiretroviral medications. Treatment also often includes prophylaxis with antifungal medications until what current guidelines recommend, which is how this patient was treated from the initial episode of cryptococcal meningitis. Unfortunately in this patient this was not successful and currently there is no clear guidelines on prophylaxis for the patient described in this case who has a CD4 count of >100 and undetectable viral load for >3 months.
Low Rates of Vaccination in Listed Kidney Transplant Candidates

Ankit R. Parikh MD, Alden Doyle MD, Karthik Ranganna, Gregory Malat, Stephen Guy, Dong H. Lee MD

Background: Vaccine preventable infection is associated with high morbidity and mortality in solid organ transplant (SOT) recipients. Vaccination is most effective if it is given pre-transplant, prior to the initiation of chronic immunosuppression. Despite strong recommendations, there is limited data about pre-transplant vaccination status among listed transplant candidates. We examined vaccination status of patients in our renal transplant program to identify the gaps and to use this information for future protocol to improve the vaccination rates.

Methods: We performed chart review of consecutive patients who were listed as a potential kidney transplant candidate (status 7 or inactive) at Hahnemann University Hospital to evaluate whether or not they had received appropriate vaccinations for pneumococcus, influenza, and tetanus. Hepatitis B was evaluated by the presence or absence of suitable titers of antibodies against hepatitis B virus.

Results: One-hundred two patients were evaluated. Median age of cohort was 52 year-old, 66.7% were receiving dialysis at the time of evaluation. Immunization rates were low with 30.4% having received pneumococcal vaccine, 43% received influenza vaccine, and 9.8% received tetanus vaccine. Patients who received other vaccines i.e. influenza (63.6% vs. 5.2%, p<0.01) and tetanus (25.8% vs. 2.8%, p < 0.01) were more likely to receive pneumococcal vaccine. Immunity against hepatitis B virus was found in 41.6% of listed patients and was more likely if the patients were receiving dialysis (70% vs. 32.3%, p<0.01).

Conclusions: In a sequential cohort of patients listed for kidney transplantation, we found that the overall immunization rate of commonly vaccine preventable infection was low. This suggests that, there remains a significant gap between recommendations and actual vaccination rates for this high-risk population. To overcome these challenges, we suggest; (1) augmenting current education for both transplant professionals and listed patients, (2) develop quality matrix for appropriate vaccination, (3) simplify vaccination delivery (4) work on resolving financial barriers and (5) to consider infectious disease consultation in early pre-transplant evaluation process.
Can We Re-engage Lost to Care HIV Infected Patients? Pilot Study from Urban Setting HIV Clinic

Ankit Parikh, MD; Dong Heun Lee, MD; Matthew Antonello; Amy Althoff, MD; Sara Allen, CRNP, Division of Infectious Diseases and HIV Medicine, Drexel University College of Medicine, Philadelphia, PA.

Introduction:

With broad screening of HIV infection and expanded treatment criteria of initiating antiretroviral therapy, number of patients requiring regular HIV care is increasing. After establishment of HIV care, one-third of patients are lost to care (not seen more than 12 months period). We hypothesize that lost to care patients could be re-engaged into care with a brief, focused, patient oriented bundle intervention in two dedicated office visit.

Methods:

We identified individuals who were not seen more than 12 months from August 2012 to January 2014 in a large urban setting HIV clinic in Philadelphia, PA. Two separate dedicated office visit were scheduled in one month. We addressed reasons for lost to care, evaluated insurance status, arranged case management, and psychiatric services. Patients’ demographics and clinical information were reviewed.

Results:

Fifty-nine consecutive patients were outreached and evaluated. Median age was 44 year-old and median times from last visit were 32 months. More than half (55.9%) completed two visits and 37 (62.7%) re-engaged to care (seen within 6 months period after two visits). Most common reasons for lost to care were recent incarceration (42.4%) followed by substance abuse (22%). At the time of initial evaluation, 27 (47.5%) patients were not taking antiretroviral therapy. Eight (13.8%) of them had CD4 count lower than 200 cell/mm³ and 24 (43.6%) patients had viral load >200 copies. One quarter had no insurance coverage at the time of evaluation. Patients who were abusing substances were less likely to re-engage into care compare to other group (30.8% vs. 71.7%, P= 0.01). Patients, who completed 2 visits in one months period, were more likely to be re-engaged than groups who did not (84.8% vs. 34.6%, P <0.001) and have viral load <200 copies (86.4% vs. 42.9%, P=0.038) within 6 months follow up period.

Discussion:

Our experience suggests that actively identifying and implanting two dedicate sessions targeting lost to care patients improved re-engagement of HIV care. This simple and low effort intervention may be implanted to improve re-engagement of HIV infected patients. Addressing issues of transition from recent incarceration and substance abuse may be a high yield in retaining high-risk population in HIV care.
Comparison of two conditioning regimens for hematopoietic stem cell transplant in patients with multiple myeloma.

Cho, David MD; Kim, Marc MD; Ward, Kristine MD; Jain, Maneesh MD; Styler, Michael MD

Introduction: Autologous stem cell transplantation after high dose chemotherapy has been shown to increase survival in patients with multiple myeloma. Studies have shown prolongation of median overall survival by 12 months. The standard conditioning regimen is Melphalan at a dose of 200 mg/m2. Melphalan was shown to be superior to Thiotepa when given with total body irradiation. Other regimens include high dose Carboplatin with Etoposide and Cyclophosphamide or Cyclophosphamide, Carmustine and Etoposide. No regimen has shown marked superiority over others. Patients of the Brodsky Associates at Hahnemann University Hospital were treated with autologous transplant with either Melphalan or Busulfan and Cyclophosphamide (BuCy) as the conditioning regimens. To date, no studies comparing these two preparative regimens have been published. Thus the purpose of our chart review was to compare survival and progression free survival of the two regimens. Hypothesis: The objective of the study is to determine if there is a difference in progression free survival and side effects in autologous stem cell transplant patients receiving either Melphalan or Busulfan and Cyclophosphamide as conditioning regimens. Methods: This study is a retrospective chart review of 78 patients, who underwent HSCT for multiple myeloma at Hahnemann University Hospital between December, 1989 and March, 2012. 39 patients received BuCy (Busulfan 16mg/kg and Cyclophosphamide 120mg/kg) and 39 patients received Melphalan 200 mg/m2. The primary end point of progression free survival was analyzed using the Kaplan Meier method with the WINKS SDA6 statistical software. Survival curves were compared using the Mantel-Haenszel comparison. Secondary study endpoints included overall survival and safety profile. Results: Median age was 56 and 52 for the BuCy and Melphalan groups, respectively. The BuCy group had 61% males and 39% females, while the Melphalan group had 49% males and 51% females. Patients in both groups received peripheral stem cell transplants with the exception of 4 in the BuCy group who had bone marrow transplants. Median progression free survivals were 26.6 months (95% CI, 6.2 to 32.2) and 45 months (95% CI, 26 to 62.3) for the BuCy group and Melphalan groups, respectively. P-value was 0.053. At this time overall survival has not been evaluated. The safety profile was as follows comparing BuCy and Melphalan, respectively: Moderate/severe mucositis (41% vs 28%), VOD (1 of 39 vs 0 of 39), hemorrhagic cystitis (2 of 39 vs 1 of 39), infection within 100 days of transplant (28% vs 18%), mean peak T. Bilirubin (0.6 vs 0.9), mean peak Alkaline phosphatase (127 vs 101), mean peak AST (37.5 vs 35), mean peak Cr (1.0 vs 1.2), mean days to ANC of 1000 (11.9 vs 12.5), mean days to platelets > 20K (11.3 vs 9.9), mean days to platelets > 50K (13.5 vs 12.9). Conclusion: This was a retrospective chart review, comparing two conditioning regimens for high dose chemotherapy and autologous hematopoietic stem cell transplant in patients with multiple myeloma. Our study showed that median progression free survival was longer with the Melphalan group, at 45 months compared to 26.6 months for the BuCy group (p=0.053). This data supports the use of Melphalan as the standard regimen for high dose chemotherapy and autologous stem cell transplant for multiple myeloma patients. There was one patient in the BuCy group who relapsed at 236 months. Such prolonged disease free survival was not apparent in the Melphalan group but the median time to follow up for BuCy is longer by up to 13 years. BuCy was associated with more infections and mucositis while metabolic and hematologic toxicities were similar in both groups.

References:
PAP Compliance in Verbally vs. Visually Discussing PSG Findings in OSA

Tarigopula, Ravali; Getsy, Joanne; Kalfus, Robert; Ko, Anita; Wang, Julie. Department of Medicine, College of Medicine, Drexel University, Hahnemann University Hospital, Philadelphia, PA-19102

Introduction: Obstructive Sleep Apnea (OSA) is a serious health problem with increased mortality (1), high blood pressure (2), congestive heart failure (3) and stroke (4). Treatment of OSA with positive airway pressure (PAP) has been shown to improve these health problems (5). Previous studies have shown that newly diagnosed patients with OSA use continuous positive airway pressure (CPAP) anywhere from 2.8 hours to 6 hours per night(6). In addition to poor health outcomes due to poor compliance, insurance carriers will not pay for a PAP device if a patient does not demonstrate optimal compliance as per their guidelines. Therefore, PAP compliance is a very important issue in the treatment of OSA. Our study seeks to test one method of improving this compliance.

Hypothesis: Will the use of both visual and verbal explanations of sleep study results lead to improved compliance with PAP therapy when compared to verbal explanations alone?

Methods: It is a single center, randomized patient study which was conducted in the Drexel Sleep Center, Philadelphia, PA. The study groups included patients whose sleep studies showed a diagnosis of obstructive sleep apnea (OSA). The patients were enrolled into the study when they return to our office to review the sleep study results. The control group includes the patients who receive the sleep study results verbally which is the standard of care, and the test group includes the patients who receive the sleep study results both verbally and visually, by means of a graphical representation of their sleep study results. The patients in both groups were treated with Positive Airway Pressure (PAP) and are advised to follow up in 4-12 weeks with the “smart card” (memory chip) from their PAP machine to check for compliance. The primary endpoint in the study was to compare the average number of hours per night that the PAP was used in each group during the first follow up visit, as measured by the smartcard from the PAP machine.

Results: The total number of adult subjects enrolled in the study between 10/2013 and 3/2015 was 45. Of them there were 20 male subjects and 25 female subjects. There were 23 patients in the control group and 22 patients in the test/study group. There were no significant gender and age differences between the two groups. The average hours of PAP usage in control group was 3.347 hours and in test group was 4.00 hours. We also performed Unpaired t-test (see table 1)

<table>
<thead>
<tr>
<th>Study groups</th>
<th>Mean hours of PAP usage</th>
<th>Median hours of PAP usage</th>
<th>Number of patients</th>
<th>Std. Deviation</th>
<th>Minimum PAP usage hours</th>
<th>Maximum PAP usage hours</th>
<th>Skewness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal(control)</td>
<td>3.13</td>
<td>4.00</td>
<td>23</td>
<td>2.564</td>
<td>0</td>
<td>7</td>
<td>-0.105</td>
</tr>
<tr>
<td>Visual(Test)</td>
<td>4.00</td>
<td>4.50</td>
<td>22</td>
<td>2.655</td>
<td>0</td>
<td>8</td>
<td>-0.370</td>
</tr>
<tr>
<td>Total</td>
<td>3.56</td>
<td>4.00</td>
<td>45</td>
<td>2.616</td>
<td>0</td>
<td>8</td>
<td>-0.205</td>
</tr>
</tbody>
</table>

We noted that the p value was 0.27, with no significant statistical difference between the two groups. The 95th percentile confidence interval for the mean difference between control and test group was between -2.438 to 0.699. This favors the test group with a likelihood of higher usage time compared to the control group.
Conclusion: Although we did not notice significant statistical difference between the two study groups, there was slightly increased usage hours in the test group in which patients were given the sleep study results visually and verbally, compared to our control group, in which the sleep study results were discussed only verbally. We believe that seeing the results visually has a greater impact in understanding the disease and hence improved PAP compliance and usage. A larger study is needed to further analyze these outcomes.

References:

Wireless Implantable Hemodynamic Monitoring (CARDIOMEMSTM) - A Technological Breakthrough in Heart Failure Management

Selvin Sudhakar MD, Joanne Ilustre DO, Ruchi Patel MD, Gary S. Ledley MD
Drexel University College of Medicine: Department of Medicine, Division of Cardiology, Section of Interventional Cardiology

Background: The wireless implantable haemodynamic monitoring (CardioMEMS) HF System (WIHM) provides pulmonary artery (PA) hemodynamic data used for the monitoring and management of heart failure (HF) patients. The system measures changes in PA pressure which physicians use to initiate or modify HF treatment. These data can be used for early intervention to reduce hospital readmissions. We report two such cases of CMD implantation which are first such implantations done at our institution.

Two patients with New York heart association (NYHA) stage III HF, reduced ejection fraction, and previous recurrent hospitalization for decompensated heart failure were selected for the implantation of WIHM. In both the patients their PA was accessed percutaneous through femoral vein. The wireless sensor of the device was implanted into the distal PA to be seated there permanently. (Figure).

The patients received education regarding in-home measurement and transmission of the PA pressures and were discharged. Our HF management team continue to monitor the data successfully to titrate the therapy of HF.

Discussion: WIHM is a promising tool in the management of heart failure patients. The sensor in WIHM is a resonant circuit consisting of a capacitor and an inductor. The sensor can be electromagnetically coupled and the resonant frequency of the circuit can be measured remotely. This allows for wireless communication with the sensor and eliminates the need for a battery. Patients with NYHA III HF on optimal medical therapy for minimum 3 months, and previous hospitalization in the past year are eligible for implantation. It has been shown that WIHM not only reduces hospital readmission but also reduces mortality in patients with HF1,2. Such a technological breakthrough has the potential to become a part of main stay therapy for HF and reduce cost of management.
Drug-coated balloon: The latest tool in the armamentarium of peripheral vascular interventions

Ruchi Patel MD, Joanne Ilustre DO, Selvin Sudhakar MD, Gary Ledley MD
Drexel University College of Medicine: Department of Medicine, Division of Cardiology, Section of Interventional Cardiology

Patency following lower extremity peripheral interventions remains a challenge. Patency rates following plain old balloon angioplasty (POBA), bare metal (BMS) and drug eluting stents (DES) are reported in the range are 40%, 65% and 75% respectively. (1-3)

Restenosis in DES is caused by inflammation of the vessel wall secondary to material left behind. The drug-coated balloons (DCB) are new FDA approved technology that avoid inflammation by leaving no hardware behind at the lesion site.

A 63 year old woman with coronary artery disease and peripheral arterial disease presented with worsening claudication. Three years earlier she received overlapping BMS (6.0mmx100mm and 6.0mmx150mm) in her left superficial femoral artery (SFA). Angiography this time revealed diffuse severe in-stent restenosis (ISR). The lesion was treated with DCB angioplasty with an excellent result.

DCB offers homogeneous drug delivery into the endothelium and avoids inflammation to the vessel. The balloon is coated with the drug paclitaxel, which inhibits cell division, cell growth, and intimal hyperplasia. The Lutonix drug-coated balloon is the first such FDA approved device. Anatomically difficult lesions can be treated without the fear of jailing the branch vessel or causing stent fracture.

Studies have shown the superiority of DCB over POBA in treating lesions as well as ISR in femoral artery. In such studies the 1 year patency rates are comparable to patency rates of DES. (4) Comparison of DES and DCB are still lacking. Nonetheless, with comparable patency rates to DES, DCB offer a very valuable tool in challenging lesions such as in the case mentioned above.

references
Complex Regional Pain Syndrome (CRPS), formerly known as Reflex Sympathetic Dystrophy (RSD), is a neuropathic disorder affecting up to 5% of all minor trauma that is characterized by chronic pain, skin changes, neuromuscular dysfunction, and swelling. Literature supports that CRPS is a multi-organ disease with autonomic dysfunction. Based on our pilot retrospective study, there was a high prevalence of gastrointestinal symptoms present in up to 58% of CRPS patients.

This is a single center, prospective study of CRPS patients seen at the Drexel University College of Medicine CRPS clinic. All patients with a diagnosis of CRPS was made by a neurologist with expertise in CRPS. Patients with diagnosis completed a detailed validated questionnaire (Rome III). Patient also self-reported their demographics, the duration of CRPS, active medications, and information regarding the management of CRPS. Questionnaires were analyzed to make an appropriate Rome III diagnosis for functional gastrointestinal disorders. Goal was also to determine if other factors such as age, gender or duration of disease influence the type of functional disorder. Analysis was performed using Fisher’s exact test and t-test.

Of the 57 (96.5%) CRPS patients that filled out a questionnaire, 2 (3.5%) were excluded due to an incomplete survey. Forty-seven (85.4%) were female with a mean age of 46.8. Fifty (90.9%) were Caucasian, and five (9.0%) were African American. Forty-eight (87.3%) of the patients with CRPS had at least one functional gastrointestinal disorders (FGID). In our CRPS cohort 40% met the criteria for functional dyspepsia, 31% for IBS, 29% for globus sensation, 27% for functional constipation, 25% for excessive belching, 22% for idiopathic nausea, 12% for proctalgia fugax, 9% for fecal incontinence, and 7% for chronic proctalgia. The prevalence of all other functional disorders was observed to be < 5%. There was no correlation between age, duration of CRPS, and location of injury with number or type of FGID, p= NS.

There is a wide range and prevalence of functional gastrointestinal disorders in CRPS patients. Functional dyspepsia, globus sensation, IBS, and functional constipation were the highest in CRPS cohorts and were higher compared to prevalence in general large cohort studies. The extent of FGID in CRPS patients is largely under-recognized. The relationship between the autonomic dysfunction seen in CRPS patients and gastrointestinal symptoms is an area that needs further exploration given the results in this study. This is the first prospective study to evaluate GI symptoms exclusively in CRPS patients.
Pheochromocytoma induced Hyperglycemia leading to misdiagnosis of Type 1 Diabetes Mellitus

David Bole¹, Barbara Simon¹, Renee Amori¹, Wilbur Bowne²

Introduction

Excess catecholamine release from a pheochromocytoma can lead to hyperglycemia by suppression of insulin release and increased glycogenolysis. There are few documented cases describing the effects of metyrosine treatment and surgical adrenalectomy on glucose levels with patients requiring insulin therapy preoperatively.

Abstract

A 31 y/o male with past medical history of Type 1 Diabetes Mellitus presented with symptoms of episodic headache, blurry vision, palpitations, diaphoresis, tremors, and chest pain over a period of 3 weeks. His admitting blood pressure was 220/120 mmHg. A 24 hour urine collection showed Epinephrine of 1754 mcg/24hr (2 -24mcg/24hr), Norepinephrine: 1743 mcg/24hr (15 -100mcg/24hr), Dopamine: 642 mcg/24hr (52-480mcg/24hr), Metanephrines: 51460 mcg/24hr (45-290mcg/24hr), and Normetanephrines: 17666 mcg/24hr (82-500mcg/24hr). MRI of abdomen/pelvis revealed bilateral adrenal masses (left side 6.5x6.0x5.7cm, right side 8.3x8.4x7.9cm) with characteristics consistent with pheochromocytoma. Other significant findings included hypercalcemia, elevated intact PTH and a nodular thyroid. Fine needle aspiration showed medullary thyroid cancer, and positive RET proto-oncogene confirming diagnoses of MEN 2A syndrome. The patient gave a history of Type 1 Diabetes Mellitus diagnosed 3 years prior to admission. He was taking Novolin (70/30) 45 units with breakfast and dinner. During his hospital course the insulin regimen was changed to Lantus 45 units and Aspart 15 units with meals. GAD-65 autoantibody was negative. In preparation for bilateral adrenalectomy, the patient was started on alpha blockade with phenyoxybenzamine and metyrosine 250mg QID which was uptitrated to 750mg QID over a period of 2 weeks. His glucose levels began trending downward requiring significant dose reductions in his insulin after medication initiation. In the pre-operative period, his insulin requirements decreased by 50%. After bilateral adrenalectomy, glucose levels were observed hourly with the lowest reading of 58mg/dL, occurring 3 hours postoperatively. There were no further episodes of hypoglycemia. Despite being maintained on steroid replacement therapy postoperatively, the patient remained euglycemic and did not require any insulin treatment.

Conclusion

This case shows the effect of medical and then surgical treatment of pheochromocytoma on glucose levels and insulin therapy. As metyrosine was uptitrated, the inhibition of catecholamine synthesis led to a reduced insulin requirement. After bilateral adrenalectomy, the patient's diabetes completely regressed. The critical features of this case are to recognize the misdiagnoses of Type 1 Diabetes as hyperglycemia was the result of excess catecholamine production, and to monitor patients closely during both pre-operative preparation and post pheochromocytoma resection for hypoglycemia.

¹Drexel University College of Medicine Division of Endocrinology
²Drexel University College of Medicine, Department of Surgery
Retrievable IVC Filter Selection and Success Rate at a Large Urban Tertiary Care Center

Dan Hynes and Yatin Kheti

Purpose: To determine the rate of permanent versus retrievable IVC filters placed, and filter retrieval success rate between 2013 and 2014 at Hahnemann University Hospital. We also examined whether filters were appropriately chosen as a treatment for VTE, and whether the correct filter was selected based on 2012 ACCP guidelines. Our plan is to determine whether providing written patient education at the time of filter placement improves retrieval success rate.

Methods: A list of all IVC filters successfully placed by the Interventional Radiology department between 2013 and 2014 was compiled using PACS system. A chart review of available electronic health records was performed to collect data on gender, age, co-morbid conditions, year and month device was inserted, device brand, primary service the patient was admitted to, contraindications to anticoagulation, follow-up and discharge planning, and attempted filter retrieval. Each case was reviewed by a resident and pulmonary fellow using ACCP guidelines for treatment of VTE to determine if the placement of a filter had been appropriate, and subsequently that the correct filter had been chosen.

Results: From 2013 to 2014, a total of 161 IVC filters were placed. 92 of the filters were permanent (57%), and 69 were retrievable (43%). The most common indications for filter placement were active bleeding (54%), DVT prophylaxis (10%), recent or planned surgery (8%), history or risk of bleeding (8%), fall risk (8%), and others (20%). Of the 161 total filters placed, we found that 11 (15%) cases did not require filter placement. Of the remaining 150 cases, the appropriate filter was placed in 74 (49%) cases, an inappropriate filter was placed in 76 (51%) cases. Of the 69 retrievable filters placed, 9 patients died before discharge. Retrieval was attempted in 10 of the remaining 60 cases, of which 9 (15%) were successful.

Conclusions: Our rate of retrievable IVC filter placements, and their retrieval, is consistent with reported national averages.

Implications: Some institutions have improved their filter retrieval rate through established IR clinics, or have instituted NP or PA-driven protocols that follow patients prospectively to take out filters when no they are no longer necessary. Many institutions such as ours do not have the means to establish such programs. Our intervention aims to determine if filter retrieval rates can be improved through patient education alone, by means of providing a standard education sheet that emphasizes follow up with primary care providers.
De Novo Lupus Nephritis (LN) is an exceedingly rare complication in kidney transplant recipients, previously reported only twice, neither recipient noted to have clinical manifestations of SLE. The scarcity of autoimmune disease in this population is not fully understood, but has been attributed to the maintenance immunosuppression used to prevent allore cognition and rejection.

Herein, we present de novo LN in a 55-year-old woman with post streptococcus glomerulonephritis and HTN; 28 years status-post living-related kidney transplant. The patient had no personal or family history of autoimmune disease at time of transplant. Three years ago, she began complaining of episodic carpo-pedal spasm and scleritis; laboratory abnormalities included mildly low albumin and stable 1g proteinuria. Medications were stable and no potentially provocative antigens, vaccines or transfusions, were given during this period. Immunosuppression included cyclosporine and low dose prednisone.

Two months ago, the patient developed malar rash and hemo-proteinuria prompting immunological studies and kidney allograft biopsy. Anti-nuclear, dsDNA, smith and histone antibodies were all strongly positive with low serum complement levels. Serum creatinine increased by 0.5 mg/dL from baseline; urine protein to creatinine ratio revealed nephrotic range proteinuria peaking at 9.6g. Immunofluorescence revealed granular “full house” pattern, C4d negative; Electron microscopy revealed intramembranous deposits. The patient was treated with high dose prednisone, continued cyclosporine and addition of mycophenolate mofetil. Conclusion: although rare, de novo auto-immune disease should be considered for transplant patients despite maintenance immunosuppression.
Comparable Outcomes Can Be Expected Among HIV (+) Kidney Transplant Recipients (HIV+ Tx) Vs. HIV (-) Kidney Transplant Recipients (HIV- Tx) Receiving Similar Immunosuppression Protocols

Laura Panarey1, Gregory Malat2,3, Akshay Sharma1, Karthik Ranganna1, David Reich2, Gary Xiao2 and Alden Doyle1. 1Dept of Medicine, Drexel University College of Medicine, Philadelphia, United States; 2Dept of Surgery, Drexel University College of Medicine, Philadelphia, United States and 3Dept of Pharmacy, Hahnemann University Hospital, Philadelphia, PA, United States.

Outcomes among HIV (+) kidney transplant recipients continue to improve despite the established risk of ACR, AMR, and calcineurin-nephrotoxicity with concomitant ART.

Methods: Retrospective analysis of all kidney transplants performed at our center since 2011; receiving identical calcineurin inhibitor based immunosuppression + basiliximab induction for a total of 39 patients. HIV(+) patients received IV immunoglobulin as additional induction agent. Clinical outcomes were assessed between the HIV (+) and HIV (-) groups at 1, 6 and 12 months status post-implantation. Statistical Analysis included Fisher exact test and Mann-Whitney U tests.

Results: Table 1 illustrates comparable recipient and donor characteristics. Donor age was younger among the HIV (+) group (p = 0.004), but KDRI was similar (p = 0.71). Despite the potential for drug interactions among HIV(+) recipients, tacrolimus troughs levels were statistically comparable among the recipients within both groups receiving tacrolimus at all time points (Figure 1). Clinical post-transplant outcomes between the groups were statistically similar at all time points (Table 2). On follow-up biopsies, the incidence of mild fibrosis was more common among HIV (+) kidney transplants (36% vs. 62%).

Conclusion: Immunosuppression protocols utilized in HIV (-) recipients can attain similar quantifiable outcomes in HIV (+) kidney transplant recipients. However, clinically, non-invasive markers of allograft function (ie eGFR) may not adequately reflect allograft stability in the HIV (+) population; as seen by the degree of interstitial fibrosis on post-implantation biopsies.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>HIV (-)</th>
<th>HIV (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recipient Age</td>
<td>57 + 14</td>
<td>51 + 8</td>
</tr>
<tr>
<td>African American</td>
<td>32%</td>
<td>54%</td>
</tr>
<tr>
<td>Male</td>
<td>76%</td>
<td>92%</td>
</tr>
<tr>
<td>HCV (+)</td>
<td>16%</td>
<td>8%</td>
</tr>
<tr>
<td>HD vintage (months)</td>
<td>41 + 40</td>
<td>81 + 38</td>
</tr>
<tr>
<td>Incidence of Delayed Graft Function</td>
<td>28%</td>
<td>46%</td>
</tr>
<tr>
<td>Deceased Donor</td>
<td>80%</td>
<td>92%</td>
</tr>
<tr>
<td>Donor age</td>
<td>42 + 13</td>
<td>30 + 11</td>
</tr>
<tr>
<td>KDRI score</td>
<td>0.99 ± 0.26</td>
<td>0.94 ± 0.16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2</th>
<th>HIV (-)</th>
<th>HIV (+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proteinuria @ 1 year</td>
<td>0.18 + 0.10</td>
<td>0.26 + 0.23</td>
</tr>
<tr>
<td>eGFR @ 1 year</td>
<td>57 + 18 mL/min</td>
<td>58 + 20 mL/min</td>
</tr>
<tr>
<td>Incidence of BK viremia @ 1 year</td>
<td>24%</td>
<td>8%</td>
</tr>
<tr>
<td>ACR</td>
<td>24%</td>
<td>38%</td>
</tr>
</tbody>
</table>
Donor Selection and Prophylactic IVIg for Induction Immunosuppression Improves Outcomes for HIV+ Kidney Transplant Recipients (HIV+ Tx)

Gregory Malat¹,², Laura Panarey³, Akshay Sharma³, Karthik Ranganna³, David Reich², Gary Xiao² and Alden Doyle³. ¹Dept of Pharmacy, Hahnemann University Hospital, Philadelphia, United States; ²Dept of Surgery, Drexel University College of Medicine, Philadelphia, United States and ³Dept of Medicine, Drexel University College of Medicine, Philadelphia, PA, United States.

Body: HIV+ Tx recipients are noted to have higher rates of allorecognition through cellular and humoral mediated pathways. Since 2010, our program instituted IVIg use as part of the induction therapy in HIV+ Tx to minimize humoral allorecognition.

Methods: Since protocol initiation, all HIV+ Tx have received IVIg as part of the induction immunosuppression. The IVIg (+) era was compared to the previous IVIg (-) era. The incidence of de novo allo-Ab and AbMR was compared between the two groups.

Results: 105 HIV+ Tx, 93 IVIg (-) vs. 12 IVIg (+) recipients, received basiliximab + calcineurin-inhibitor based immunosuppression. The second era received 0.3 – 0.5 g/kg IVIg at the time of Tx. Demographics were similar between both eras (Table 1), with the exception of certain donor parameters, including lower donor terminal serum creatinine and less CVA among donors in IVIg (+) HIV+ Tx. De novo antibody production was decreased among the IVIg (+) group (de novo non-specific antibodies post-transplant 17% vs. 39%, p = 0.02). However this did not translate to a decrease in de novo DSA production (16% in both groups, p = 0.37). The rates of antibody mediated rejection (AbMR) was similar between the 2 groups (17% vs. 14%, p = 0.80); albeit the time to the development of AbMR was increased (median time to AbMR 430 days vs. 48 days). Additionally, the second era had improved renal function at 1 year (eGFR 54 ± 16 mL/min vs. 36 ± 29 mL/min, p = 0.07) and less cumulative ACR (42% vs. 71%, p = 0.04).

Conclusions: We postulate that strategic donor selection and IVIg as part of induction may lead to improved kidney allograft function and lower de novo Ab production.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>IVIg (-)</th>
<th>IVIg (+)</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recipient Age</td>
<td>48 ± 8</td>
<td>50 ± 8</td>
<td>0.4</td>
</tr>
<tr>
<td>African American</td>
<td>88%</td>
<td>50%</td>
<td>0.01</td>
</tr>
<tr>
<td>Male</td>
<td>87%</td>
<td>92%</td>
<td>0.65</td>
</tr>
<tr>
<td>Incidence of Delayed Graft Function</td>
<td>60%</td>
<td>50%</td>
<td>0.50</td>
</tr>
<tr>
<td>Donor Age</td>
<td>39 ± 15</td>
<td>37 ± 11</td>
<td>0.04</td>
</tr>
<tr>
<td>Donor Terminal Creatinine</td>
<td>1.5 ± 1.2</td>
<td>0.9 ± 0.3</td>
<td>0.06</td>
</tr>
</tbody>
</table>
Systemic inflammation and protein-energy malnutrition are conditions which have been associated with higher mortality in hemodialysis (HD) patients. Inflammation can lead to low albumin levels but a direct correlation has not been established yet. HD patients are continuously exposed to pyrogenic substances even below the accepted threshold level in treated water, which may provoke an inflammatory response. Our aim was to determine if complete pyrogen free treated water would decrease the inflammatory response in dialysis patients.

141 patients who had been on maintenance HD were switched to the Dialog Evolution HD system which has an added built in feature of an extra water filter called the UltraPureFluid System (UPS). We retrospectively collected patients’ albumin levels, hemoglobin, iron saturation, and ferritin levels, which were utilized as surrogate markers of inflammation, for 3 months. Analyses were performed using the matched pair t-test.

After introduction of this dialysis machine and the UPS, a statistically significant increase in albumin levels from 3.84 ± 0.4 to 4.08 ± 0.4 (p=0.0002) was observed. The bacterial colony forming unit (CFU) in the final dialysate went from 53±77 to 0 (p=0.005). Ferritin levels declined from 1383 ± 510 to 1322 ± 454 (p=0.07). There was no statistically significant change in hemoglobin or iron saturation levels.

Our preliminary findings suggest that the addition of an extra water purification filter may result in an ultrapure dialysate with complete elimination of bacterial CFU that can lead to improvements in serum albumin levels. The change in serum albumin may possibly be due to reduced inflammation. Our findings warrant further research into this matter and should be followed with larger prospective studies.
DOUBLE TROUBLE: A RARE CASE OF XANTHOGRANULOMATOUS WITH SUPERIMPOSED EMPHYSEMATOUS PYELONEPHRITIS

Sweta Carpenter, Rozina Ali, Sandeep Aggarwal
Division of Nephrology and Hypertension, Drexel University College of Medicine, Philadelphia, PA, USA

Xanthogranulomatous pyelonephritis (XGP) and emphysematous pyelonephritis (EPN) are respectively extremely rare variants of pyelonephritis. Recent case reports demonstrate that EPN may be managed medically while XGP usually requires nephrectomy. As such, the rarity in which these entities are seen together in one kidney makes the management of XGP with superimposed EPN challenging. We present a case of a 58 year-old male with diabetes and a chronic indwelling catheter due to neurogenic bladder who was managed medically for both XGP and EPN for four months before nephrectomy.

Several months prior to our evaluation, this patient was being treated for a urinary tract infection. For persistent left flank pain, he underwent an outpatient CT abdomen with contrast. Imaging confirmed bilateral staghorn calculi, as well as left-sided XGP with superimposed EPN. After prompt hospitalization, his urine cultures were positive for both MRSA and VRE, thought to be due to his chronic foley as they are not usually associated with XGP or EPN. He was treated with broad-spectrum antibiotics and discharged on linezolid with plans for elective left nephrectomy. Unfortunately, the patient was lost to follow up. We were asked to see the patient when he returned to the ER four months later with abdominal pain, fever, and leukocytosis. Repeat imaging revealed persistent bilateral staghorn calculi with EPN and worsening XGP in the left kidney. He was treated with IV antibiotics and underwent a right percutaneous nephrolithotomy with right ureteral stent and left total nephrectomy.

Our case of an ipsilateral kidney affected by XGP and EPN in the setting of bilateral staghorn calculi illustrates the surgical management of superimposed XGP and EPN after medical optimization.
NON-MECHANICAL NEW-ONSET PAINLESS HEMATURIA IN AN ELDERLY: ALTERNATIVE DIAGNOSIS

Maria B. Yballe, Purna B. Nandigam, Sandeep Aggarwal,

Drexel University, Philadelphia, Pennsylvania, USA

Rapidly Progressive Glomerulonephritis (RPGN) in elderly patients can manifest in a variable pattern of injury. We present a case of a 50-year-old African American male with a history of HIV, type 2 diabetes mellitus, and CKD stage IIIb with a baseline serum creatinine of 1.6 mg/dL who was admitted for new-onset frank hematuria. He was recently started on oral antibiotics for an infected back wound five days prior to admission. Investigation for a urinary cause of obstruction did not reveal stones, mechanical obstruction, or urogenital malignancy with a normal PSA. He was found to have a serum creatinine of 3.46 mg/dL with urine microscopy revealing many isomorphic RBCs but without any pyuria. Further serology revealed a positive ANA titer (1:160) but negative anti-GBM Ab, c-ANCA, p-ANCA, ASO Ab, serum cryoglobulins, and HCV PCR. Serum complements were within normal limits. Spot protein to creatinine ratio was found to be 8.4 g/day. There was no evidence of schistocytes on peripheral blood smear. Light microscopy on kidney biopsy demonstrated crescents in 8/23 glomeruli with 70-80% podocyte effacement and scattered subendothelial, sub-epithelial, and intramembranous fine granular electron dense deposits on electron microscopy. Immunofluorescence was positive for granular staining in the mesangium with C3 and IgM. Furthermore, tubulo-interstitial inflammatory infiltrates were observed consistent with acute interstitial nephritis (AIN). These findings were suggestive of crescentic glomerulonephritis (GN) secondary to immune-complex GN coupled with AIN. Subsequently, the patient was treated with high-dose pulse steroids followed by a short, rapid taper with complete and dramatic resolution of his acute kidney injury. Frank painless hematuria in an elderly male with a negative malignancy work-up should prompt further investigation for alternate diagnoses.
Peritoneal dialysis catheter exit-site infections can be a burdensome problem in patients on peritoneal dialysis (PD). Inadequate treatment can lead to significant morbidity with prolonged treatment course and recurrent peritonitis with subsequent catheter failure. We present a case of a 41 year-old African American male with end-stage renal disease secondary to hypertension who presented with recurrent PD catheter exit-site infection. He has been on PD since June 2012 with history of Pseudomonas catheter exit-site infection. He has had multiple recurrent episodes of exit site infections treated with both topical and oral antibiotics without peritonitis. Patient also reports repeatedly tying the catheter to one side of the abdomen. On careful examination of the site and manipulation of the tunnel revealed granulomatous tissue with mild purulent drainage. We performed a 75%-silver nitrate cautery of the granulomatous tissue with continued topical gentamicin as outpatient with complete resolution of the infection on subsequent follow-up.

Our case demonstrates the role of chemical cauterization with topical silver nitrate solution as an effective adjunctive treatment of a PD catheter site infection resistant to oral and topical antibiotic.
NIGHT TO NIGHT VARIABILITY OF APNEA-HYPOPNEA INDEX IN PATIENTS TREATED WITH POSITIVE AIRWAY PRESSURE THERAPY

Neil Doshi, MD¹, Ritwick Agrawal, MD, FCCP², Ishan Lalani, MBBS³, Julie A. Wang, MD¹, Anita Ko, MD¹, Joanne E. Getsy, MD, FAASM¹

1. Division of Pulmonary, Critical Care and Sleep Medicine, College of Medicine, Drexel University, Philadelphia, PA
2. Section of Pulmonary, Critical Care and Sleep Medicine, Baylor College of Medicine, Houston, TX
3. School of Public Health, Drexel University, Philadelphia PA

Background: Obstructive Sleep Apnea is a chronic disorder that affects 20-30% of the male adult population and 10-15% of the female population in the United States. Diagnosing sleep apnea is based on calculating the apnea-hypopnea index (AHI). Studies have shown that day to day variability of blood pressure control in patients have been independently correlated with increased risk of stroke. This study aimed to look at the short term night-to-night variability (NNV) in residual apnea hypopnea index (rAHI) after the initiation of positive airway pressure (PAP) therapy during the first 90 days of treatment.

Methods: Retrospective study performed at a university-affiliated sleep center between August 2013 and March 2014. Statistical analysis included baseline descriptive characteristics, Spearman’s correlation and logistic regression.

Results: Of 201 patients, 88 patients (BMI 37.7 ± 8.7, Age 53.4 ± 13.2, baseline polysomnography [bPSG] AHI 37.3 ± 29.3, lowest desaturation, bPSG 79.7 ± 12, male 45.4%). were included. The mean number of days used was 60.6 ± 20.5 (minimum 20) days. Coefficient of variation (CV) was calculated to identify the variability in the rAHI which had a range from 31.9 to 462.8 and the mean ± SD was 85.3 ± 55.6. The Spearman correlation of CV with minutes of usage (rho = 0.14, p =0.2), number of days of usage (rho = -0.09, p =0.4) average nightly leak (rho = -0.07, p =0.5), age (rho = -0.12, p =0.2), BMI (rho = -0.04, p =0.6) and bPSG AHI (rho = 0.03, p =0.8) was not statistically significant. The probability of high CV decreases with age (beta= -0.0620 p= 0.015) and increases in African American race vs Caucasian (our reference class) (beta= 1.79, p= 0.016) as well as those with COPD or asthma (beta= 2.18, p= 0.005).

Conclusions: These data demonstrate that among OSA patients treated with PAP therapy, a wide range of individual NNV in rAHI is present. In African Americans, there was more NNV as compared to Caucasians. Additionally, in patients with COPD or asthma, there was also increased NNV as compared to the normal population. The high NNV cannot be correlated to daily patient usage factors or baseline demographics and is likely an independent factor. Further studies are needed to understand the prognostic significance of NNV of rAHI.
Tuberculosis remains a significant health burden worldwide. In spite of the shift in care from hospital-based to outpatient-based setting, a large number of people with TB are still hospitalized each year; the total cost of hospitalization for TB in the US reached $752 million in 2006. This study aimed to examine the process of diagnosing tuberculosis at Hahnemann University Hospital, and to identify quality-improvement measures that could lead to more efficient care and potential healthcare cost savings.

We conducted a retrospective review of 130 records, belonging to 122 patients who had at least one sputum or broncho-alveolar lavage (BAL) acid-fast bacilli (AFB) smear, who were admitted between January 2012 and June 2013. Their baseline characteristics; culture results; length of hospital stay (LOS); and times to physician order-entry placement, specimen submission, and release of result were obtained.

The mean age was 53 years. Seventy-two patients (59%) were male. Forty-one (34%) had HIV. AFB smear was positive in only 4 patients (3%), while culture was positive in 31 (25%). Two smear-positives were culture-negative, while 29 of the 31 culture-positives (94%) were smear-negative. The two specimens that were both smear and culture-positive grew M. tuberculosis and M. chelonae. The 29 smear-negative, culture-positive specimens grew MAI (22), other non-TB mycobacteria (6), and Streptomyces (1). The average LOS was 19.2 days. However, for 23 patients who were admitted solely to rule out TB and who were immediately discharged after testing negative, the LOS was only 8.04 days.

With serial sputum smears (n=44), the average time from order-entry of the first sputum specimen to that of the third specimen was 1.86 days; 50% of physicians took at least 3 days to place all 3 order-entries. The average time from order-entry to specimen submission was 1.14 days. The average time from specimen submission to release of result was 2.26 days for sputum, and 2.32 days for BAL. The average total time from the first order-entry to the release of the third sputum result was 5.86 days.
Our study showed that at least half of physicians were unaware that, per CDC recommendations, a sputum specimen could be collected every 8 hours. The longest delay was with laboratory processing, which was performed at an external facility. Increasing physician awareness, and having the necessary laboratory equipment in-house, could significantly cut down the LOS, leading to more efficient care and lower healthcare costs.

Table 1. Average Processing Times

Our study showed that at least half of physicians were unaware that, per CDC recommendations, a sputum specimen could be collected every 8 hours. The longest delay was with laboratory processing, which was performed at an external facility. Increasing physician awareness, and having the necessary laboratory equipment in-house, could significantly cut down the LOS, leading to more efficient care and lower healthcare costs.
THE CORRELATION BETWEEN eGFR with DEGREE OF ALLOGRAFT HISTOLOGICAL CHANGES IN HIV + KIDNEY TRANSPLANT RECIPIENTS.

Amit A. Deshpande, Disha Narula, Alden Michael Doyle, Gregory Malat. Drexel Univ.

Background: Hahnemann University Hospital Kidney Transplant program has performed over 100 HIV (+) kidney transplants. Allograft biopsies were performed as needed and per protocol. These biopsies were analyzed as a tool for establishing an association between eGFR and degree of interstitial fibrosis and tubular atrophy (IFTA).

Methods: A retrospective study including 60 HIV + kidney transplant recipients who had surveillance biopsies approximately 1 year post-transplant. Patient eGFR at 1 year was plotted against the summation of interstitial fibrosis scores (ci) + tubular atrophy % (ct) as determined by Banff scoring.

Results: When eGFR is plotted against summation of IFTA scores, a negative correlation is found (-0.399). The p-value for the correlation coefficient was significant (0.0016)

![Scatter Plot](image)

Discussion: The negative correlation we observed between eGFR and IFTA scores highlights the complex nature of managing post-transplant HIV(+) recipients and suggests routine surveillance biopsies within 1 year post transplant may have a role in management. More formalized studies focused on surveillance biopsies will need to be conducted to assess whether such a procedure actually plays a role in influencing long term patient and allograft survival.
Role of RRT in Fiorcet overdose

Disha Narula  Amit Deshpande. Shabnum Haleem Hasan Arif

Drexel University College of Medicine, Philadelphia, PA

58 year old female with history of Depression, RSD, hypothyroidism, psychogenic polydipsia presented with Fioricet overdose. Patient took 150 pills of Fioricet as a suicide attempt and was found to be lethargic by her husband. The exact time of pill consumption was unclear.

In the emergency department, patient was found to be lethargic and hypotensive with a Blood Pressure of 75/49, pulse of 69 RR of 8, and O2 sat of 99% on room air. The patient was given 3 Liters of normal saline, but she remained hypotensive and thus was started on a norepinephrine drip. Patient was also intubated for airway protection as she became more lethargic. Her Cr 0.28, Bicarbonate 18 , Tylenol level was 57. Her ALT 19 AST 14 Alkaline Phosphate 36 on admission. Salicylate level was negative. Ethanol level <5.0.

Arterial Blood gas was pH of 7.45, PCO2 33, PO2 135 HCO3 22, and O2 sat 98. Patient was started on NAC for her elevated Tylenol levels.

We were consulted for the role of dialysis in Fioricet overdose for the caffeine and barbiturate component. We reviewed literature to find the role of dialysis in Fioricet overdose. Fioricet is composed of acetaminophen, butalbital, and caffeine. Fioricet overdose can lead to renal tubular necrosis. Butalbital is primarily eliminated via the kidneys. Dialysis has been recommended in cases of severe toxicity. Caffeine has a low volume of distribution and is responsive to extracorporeal methods of elimination. Charcoal hemoperfusion has been the conventional method of choice for enhanced elimination of methylxanthines, particularly theophylline. The endogenous rate of theophylline clearance has been shown to be a 50 mL/min, while hemoperfusion rates have been reported up to four to six times higher. Hemodialysis has substantially lower clearance rates (around 100 mL/min) compared with hemoperfusion. The patient was initiated on hemodialysis and was dialyzed for six hours with a high flux dialyzer. The challenge in these cases is to monitor the need for continued dialysis without butalbital or caffeine levels to monitor. We used her hypotension and pressor requirements as well as theophylline level as a surrogate for a caffeine level.
Immunization Status of HIV positive Patients on Kidney Transplant List: A Single Center Experience

Purna Bindu Nandigam1*, Talal A. Khan1, Ankit Parikh2, Amit A. Deshpande1, Gregory Malat1, Akshay Sharma1, Karthik M. Ranganna1, Dong heun Lee2 and Alden Michael Doyle1. 1Division of Nephrology, Drexel University, Philadelphia, PA, United States and 2Division of Infectious Disease, Drexel University, Philadelphia, PA, United States.

Background: Immunizations are a key component of transplant care, as patients who are immunosuppressed are at heightened risk for infectious diseases. The best time to vaccinate is prior to transplantation as the response rates are higher before the immunosuppressive medications have been added. Although the recommendations are clear, rates of immunization for transplant recipients have remained stubbornly below target. We sought to examine the rates of vaccination of an especially at-risk population, HIV+ patients who have been waitlisted for kidney transplantation in order to begin to develop a plan to boost pre-transplant immunity rates.

Methods: We retrospectively reviewed charts of 52 HIV+ ESKD patients who were waitlisted for kidney transplant. We recorded their immunization status including flu, pneumonia, Tdap and hepatitis B vaccination.

Results: The mean age of our cohort was 49 years old with 39/52 males, 40/52 Black, 8/52 White, 4/52 Hispanic. Patients had serologic evidence of exposure to EBV (41/52) and CMV (42/52). HIV was generally well-controlled, with 50/52 patients with CD4 counts over 200, 47/52 had undetectable viral loads. HCV co-infection was present in 4/52 patients. The vaccination rates of our patients are shown below:

<table>
<thead>
<tr>
<th>Number of Patients</th>
<th>52</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flu vaccine</td>
<td>23/52(44.2%)</td>
</tr>
<tr>
<td>administered</td>
<td></td>
</tr>
<tr>
<td>Pneumonia vaccine</td>
<td>26/52(50%)</td>
</tr>
<tr>
<td>Administered</td>
<td></td>
</tr>
<tr>
<td>Tdap vaccine</td>
<td>15/52(28.8%)</td>
</tr>
<tr>
<td>administered</td>
<td></td>
</tr>
<tr>
<td>Hepatitis Bs Ab</td>
<td>37/52(71.15%)</td>
</tr>
<tr>
<td>+</td>
<td></td>
</tr>
</tbody>
</table>

Conclusions: We found a relatively low rate of vaccination in HIV+ patients wait listed for kidney transplant. We surmise that we would find as low or lower rates of vaccination for HIV- populations who did not have an infectious disease provider. At our center we are developing educational and outreach programs to target wait listed patients so that patients that are called for organ offers have been immunized as completely as possible and have been educated about the central role that vaccines play in transplant care.
Routine Employment of Intraoperative Continuous Renal Replacement Therapy for Liver Transplantation was Safe and Effective

Dhaval Sureja, Kenneth Lau, Gregory Malat, Stephen Guy, Karthik Ranganna, Alden Doyle, Division of Nephrology, Drexel University College of Medicine, Philadelphia, PA

Introduction: Liver transplantation is a lengthy and complex procedure during which there are often large shifts in volume, disturbance in sodium-potassium homeostasis, and acid/base physiology that can be difficult to manage. Intraoperative management is more challenging when the patient has severely compromised kidney function. In order to better manage these physiologic variables in the operating room, we instituted a standard policy whereby all patients on dialysis awaiting liver transplant are placed on continuous renal replacement therapy (CRRT) throughout the liver transplant procedure and for at least 24 hours post-operatively. Here in we report our experience with this transplant dialysis protocol.

Method: We retrospectively examined 8 liver or a combined liver and kidney transplant patients from 2010 - 2014, who also received dialysis support in the week prior to receiving their transplant organ(s). Data included electrolytes, volume status, daily input/output, day of extubation, total blood products received, and blood pressure, from 2 days pre-op to 3 days post-op period.

Results: None of the patients developed hyperkalemia or acidosis. Hyponatremia resolved post operatively which is a common challenge in end stage liver disease patients. Blood pressure was well controlled perioperatively. Patients' volume status better controlled despite receiving on average 40-100 blood products intra-operatively. Four patients were extubated on post op day 1 and two patients on post op day 2. No anticoagulation was required during CRRT to maintain filter and circuit patency.

Discussion/Conclusion: We found that a protocol that utilized intraoperative CRRT during the liver transplant surgery was safe and effective at maintaining a tight sodium, potassium, fluid and acid/base balance despite large peri and intra-operative transfusion and crystalloid fluid requirements. Although we are not able to comment on long term outcomes and its impact on ICU stay or hospitalization length, we submit that this type of CRRT protocol could be utilized by other transplant centers and is worthy of larger, prospective studies.
LOW RATE OF BK VIREMIA AND NEPHROPATHY IN LARGE SINGLE CENTER SERIES OF HIV+ KIDNEY TRANSPLANT RECIPIENTS

Shabnum Haleem, Talal A. Khan, Gregory Malat, Karthik M. Ranganna, and Alden Michael Doyle. Drexel University College of Medicine, Philadelphia.

Purpose:
The reported estimated prevalence of BK viruria is 30-40 percent, viremia is 10-20 percent and nephropathy ranges from 1 to 10 percent, in non HIV kidney transplant recipients. Although the risk of BK infection has not been well characterized in HIV positive kidney transplant recipients, it stands to reason that it might be greater than seen in HIV negative transplant recipients, because of the immune dysregulation imposed by the HIV virus on the host's immune system.

Methods:
To examine the incidence of BK viremia and nephropathy in HIV renal transplant recipients, we retrospectively examined 86 HIV positive patients who received kidney transplant at our center between 2001-2013. The data was obtained by reviewing paper charts before 2008 and outpatient electronic medical records after that. The following risk factors were examined for incidence of BK viremia: age, gender, race, CD4 count around the time of transplant, type of induction and maintenance immunosuppressive therapy, and episodes of rejection. We examined the records for allograft biopsies for the incidence of BK virus nephropathy, simian virus 40 (SV40) staining was performed on renal biopsies when there were signs of BK nephropathy. Before 2009, urine and plasma BK virus PCR were checked when there was a clinical suspicion of BK nephropathy. After 2009, BK virus PCR was check as a protocol.

Results:
Out of 86 cases of HIV positive kidney transplant recipients 5 had BK viruria (6%), 3 had BK viremia (3%), and none of the patients had BK nephropahty. All patients had induction with Interleukin-2 receptor antagonist-basiliximab, and they were on standard triple maintenance immunosuppression with calcineurin inhibitors (cyclosporine or tacrolimus), mammalian target of rapamycin (mTOR) inhibitors (sirolimus) or anti-proliferative agent (mycophenolic mofetil), and low dose prednisone. All patients were maintained on stable ART therapy for HIV control. About 71 percent of patients had one or more episodes of rejection.

Conclusions:
Our results suggest that despite the compound immunosuppression imposed by the combination of HIV serostatus and maintenance immunosuppression, HIV positive kidney transplant recipients were found to have a low rate for BK viremia and nephropathy. Why there is a lower risk for BKV is not clear but deserves further inquiry.
NEPHROLOGY AS A CAREER CHOICE – TRENDS FROM URBAN TEACHING HOSPITALS:

Rozina Ali, Sweta Carpenter, Maria Yballe, Hasan Arif, Sandeep Aggarwal,

Drexel University College of Medicine, Philadelphia, PA, USA

The impact of residency training on a physician’s decision to pursue nephrology as a career is not well studied. We surveyed 75 residents across 3 urban teaching hospitals to analyze trends of career choices among internal medicine (IM) residents. The survey questions included training year, gender, career path (IM versus subspecialty), potential factors affecting interest in nephrology, and exposure to renal patients in outpatient/inpatient setting. Results were obtained via web and paper-based surveys distributed during requisite resident conferences. Z test and Pearson correlation analyses were performed.

Among responders, those interested in pursuing subspecialty path were significantly greater than those interested in general medicine path (76.6% vs 23.4%, z=-5.9, p=0.00). A significant decline occurred in the number of residents interested in nephrology at the beginning of their medicine training versus those who subsequently intended to pursue nephrology as a career (29.7% vs 7.8% z=3.2, p=0.001). Compared to nephrology, there was a greater interest in the number of residents interested in pursuing cardiology (19% vs 7.8%, z=-1.8, p=0.03) and hospitalist medicine (22% vs 7.8%, z=-2.2, p=0.01). Differences among other career choices and nephrology were non-significant.

Notably, a difference existed between the number of residents with clinical exposure to nephrology versus those without significant exposure (29.7% vs 70.3%, z=-4.5, p=0.00). Clinical exposure to nephrology was defined by outpatient and inpatient nephrology rotations. There was a significant correlation between interest in non-nephrology career choices and lack of clinical exposure to nephrology (r=.3, p=0.03), as well as lifestyle/financial factors (r=-0.3, p=0.04).

Our results indicate a possible decline in interest in nephrology as a career choice in the course of residency training and may be associated with factors including lack of clinical exposure, lifestyle/financial considerations and greater interest in other subspecialties. Larger multi-center studies with broader geographic scope need to be done in this regard.
FIRST REPORT OF HUMAN INTESTINAL SPIROCHETOSIS IN KIDNEY TRANSPLANT RECIPIENT

Rozina Ali, Akshatha Rao, Karthik Ranganna, Greg Malat, Alden Doyle

Drexel University College of Medicine, Philadelphia, PA, USA

Human intestinal spirochetosis (IS) remains a poorly understood entity that has variable clinical significance, from absence of symptoms to septic shock. In humans, IS has been associated with *Brachyspira aalborgi* and *B. pilosicoli*, which are flagellated spirochetes that adhere to the surface of colorectal mucosa and cause chronic watery diarrhea when they invade the mucosa. In the US, previous cases have mostly been noted in HIV patients but there have been no reported cases of IS in solid organ transplant patients. We present a case of a 38 year-old male with history of well-controlled HIV, diabetes and living unrelated kidney transplant maintained on tacrolimus, mycophenolate mofetil, and prednisone, who was found to have colonic intestinal spirochetosis.

Our patient presented to the transplant clinic with persistent symptoms of weight loss, vomiting and diarrhea. He reported traveling to Puerto Rico two months prior, when he developed loose, nonbloody, green, watery stools, associated with nonbloody, bilious emesis. His serum creatinine was found to be elevated at 2.37 mg/dL, from baseline level of 2.0 mg/dL. He was admitted for volume resuscitation. No changes were made to his immunosuppression.

During his hospitalization, he underwent screening for infectious and noninfectious causes of diarrhea, including extensive stool studies and serum anti-tissue transglutaminase antibody and anti-endomysial antibody. On EGD and colonoscopy, he was found to have grossly normal mucosal findings and a single polyp noted to be a low-grade dysplastic tubular adenoma. Random biopsy from his colon revealed intestinal spirochetosis as demonstrated within warthin-starry stain. No cytomegalovirus or other viral or parasitic inclusions were detected. He was started on metronidazole and doxycycline for two weeks and after therapy, stated improvement of symptoms. Follow-up sigmoidoscopy did not reveal further visualization of spirochetosis on biopsy.

Although rare and often associated with HIV-positive populations, we suggest that intestinal spirochetosis be considered as a cause of unexplained diarrhea in solid organ transplant patients.