Session: 243. HAI: Surgical Site Infections
Saturday, October 7, 2017: 12:30 PM

Background. As the U.S. population ages, the number of total hip and knee arthroplasties (THA, TKA respectively) is expected to increase. Surgical site infections (SSIs) following these procedures contribute substantial morbidity, mortality and costs.

Methods. We used a stochastic Poisson process to project the number of primary and revision procedures and infections, by applying the 2020–2030 US Census Bureau population projections to constant procedure and SSI rates. Primary procedure rates were calculated using annual estimates of THA (ICD-9-CM codes 81.51, 81.52) and TKA (81.54) stratified by age and gender from the 2012–2014 Nationwide Inpatient Sample and standardized by US census population data. We assumed these stratified procedure rates would be constant throughout our projection period. Revision rates, dependent on time from primary procedure, were obtained from published literature. We assumed revision rates were uniform for all ages and genders. Complex SSI rates for primary and revision procedures were obtained from 2012 to 2015 National Healthcare Safety Network data, stratified by age and gender. To evaluate the impact of potential prevention measures, we used the US Department of Health and Human Services (HHS) target goals and re-calculated the projections with a SSI rate reduction of 30%.

Results. For 2020–2030, we projected that in the absence of improved prevention measures, complex SSIs following THA and TKA would increase by 26% and 24% (Figure 1), respectively, as compared with baseline. We estimated the burden of SSIs to be 40,869 post-THA (95% CI 37,041–44,965, 31,467 primary, 9,402 revision) and 34,958 post-TKA (95% CI 31,787–38,129, 25,641 primary, 9,317 revision) for 2020–2030. On average, revisions represented 9% of the overall projected number of procedures and 23% of projected SSIs. Meeting the HHS target for SSI reductions could prevent 12,261 SSIs following THA (9,402 revision) and 10,485 SSIs following TKA (7,692 primary, 2,795 revision) from 2020 to 2030.

Conclusion. Without improved prevention measures, we project that complex SSI burden for primary and revision THA and TKA will increase. Reducing the SSI rate for these procedures by 30% could prevent at least 22,000 SSIs and reduce costs to Medicare.

Disclosures. All authors: No reported disclosures.

2219. Effectiveness of Fosfomycin Tromethamine Prophylaxis in Preventing Infection Following Utrasound-Guided Prostate Needle Biopsies: Results from a Large Canadian Cohort
Louis-Philippe Montpetit, MD1; Nicolas Gagnon, Pharmacy student1; Robert Sabbagh, MD2; Marc-Andre Smith, MD3; Mathieu Raymond, MD3; Catherine Allard, MD4 and Marc Carignan, MD, MS3; 1Microbiology and Infectious Diseases, Université de Sherbrooke, Sherbrooke, QC, Canada; 2Surgery, Université de Sherbrooke, Sherbrooke, QC, Canada; 3Internal Medicine, Université de Sherbrooke, Sherbrooke, QC, Canada

Session: 243. HAI: Surgical Site Infections
Saturday, October 7, 2017: 12:30 PM

Background. Over the last decade, many studies have shown increasing rates of infection following ultrasound-guided transrectal prostate needle biopsies (TRUSPBs).

Methods. To evaluate the effectiveness of fosfomycin tromethamine prophylaxis in preventing post-TRUSPB infectious complications, we conducted a case–control study nested in a cohort of patients undergoing TRUSPB between 2002 and 2016 in a secondary and tertiary care hospital in Canada. It included patients who developed post-TRUSPB bacteremia and/or urinary sepsis. Controls were randomly selected from among TRUSPB patients without such complications. Four prophylaxis periods were defined across the study: i) ciprofloxacin, low-resistance period (CIPRO-LOW), ii) ciprofloxacin, high-resistance period (CIPRO-HIGH), 2010–October 2011; iii) oral fosfomycin tromethamine, one dose (FOSFO1), December 2013–September 2015; and iv) oral fosfomycin tromethamine, two doses (FOSFO2), October 2015–June 2016. Incidence rates of infection were calculated from the cohort. Crude and adjusted odds ratios and their 95% confidence intervals were calculated using logistic regression, using the nested case–control study.

Results. During the study, 9527 TRUSPBs were performed, resulting in 138 cases of urinary sepsis (58% with bacteremia). The incidence rates were 1.82% with CIPRO-HIGH, 3.54% with the FOSFO1 regimen (P = 0.044, compared with CIPRO-HIGH), and 2.73% with the FOSFO2 regimen (P = 0.19, compared with CIPRO-HIGH). Patients receiving FOSFO1 (risk ratio: 2.18; P = 0.0001) and FOSFO2 (risk ratio: 1.84; P = 0.05) had a higher risk of hospitalization for a post-TRUSPB infectious complication than patients receiving CIPRO-HIGH did. Although E. coli remained the predominant pathogen with fosfomycin-based regimens, the proportion of infections with Klebsiella spp. was significantly higher (20/66, 30.3%) than that with ciprofloxacin-based regimens (2/77, 2.5%; P < 0.001). Independent risk factors for infection were the prophylactic regimen administered, the presence of urological comorbidity, and diabetes.

Conclusion. Fosfomycin tromethamine was not an effective alternative to ciprofloxacin for preventing post-TRUSPB urinary sepsis, highlighting the need for novel antibacterial prophylaxis approaches.

Disclosures. A. Carignan, Paladin Labs: Speaker’s Bureau, Speaker honorarium

2220. HIV/Hepatitis B Coinfection Is Usually Treated Together. Is Hepatitis B Forgotten?
Bashirat Giwa, MBBS, MSPH1; Arpi Terzian, PhD2; Maya Bryant, MD3; Qingjiao Hou, MS1; and Saumul S. Doshi, MD3; 1Infectious Diseases/Medicine, Howard University Hospital, Washington, DC; 2George Washington University Milken Institute School of Public Health, Washington, DC; 3Ad finitas Health, Hanover, MD; 4Cerner Corporation, Kansas city, Missouri; 5Medstar Washington Hospital Center, Washington, DC

Session: 244. HIV and HBV
Saturday, October 7, 2017: 12:30 PM

Background. Hepatitis B (HBV) co-infection increases the risk for liver-related morbidity among HIV-infected patients. Department of Health and Human Services (DHHS) guidelines for the management of HIV/HBV coinfection (DHHS A5) recognize the need to test for HLVB and recommend six-monthly monitoring of blood tests. We assessed longitudinal adherence to these guidelines among patients enrolled in the DC Cohort Study, a city-wide clinical cohort in Washington, DC.

Methods. Patients ≥18 years old who were enrolled between January 1, 2011 and March 31, 2016 and had ≥6 months of follow-up were included. Advanced liver fibrosis was defined as having a FIB-4 score >3.25 calculated from same-day platelet, AST and ALT results. Viral suppression (V5) was defined as having undetectable HIV VL (<200 copies/mL). Chronic HBV status was determined using ICD 9 and 10 diagnostic codes. Clinical targets were defined as the proportion tested for HBV viral load (VL), platelet count and AST (markers of HBV care) along with HIV VL and CD4 count tests (markers of HIV care) every six months following enrollment.

Results. Among 7,631 HIV-infected patients, 326 (4.2%) had chronic HBV among whom 22 (6.7%) had advanced fibrosis. Compared with HIV-mono-infected patients, HIV/HBV patients were more likely to be male (86% vs 72%, P < 0.001) and had a history of AIDS (49% vs 37%, P < 0.001). Although HIV VS was high in both cohorts, co-infected patients were less likely to have undetectable HIV (88% in HIV only vs 84% in HIV/HBV, P = 0.026). HIV/HBV patients were nearly four times...
...less likely to be tested for HBV than for HIV VL in the first six months (21% vs 79%, P < 0.0001) and eight times less likely in the last six months of observation (6% vs 49%, P < 0.0001). Comparing the first six months to the last six months of observation, the proportion of patients tested for AST (77% and 50% P < 0.0001) and platelets (76% and 57% P < 0.0001) declined.

Conclusion. Adherence to the DHHS management guidelines for monitoring HBV VL among HIV/HBV co-infected patients was low. AST and platelet counts were monitored at a similar frequency to HIV VL, suggesting that these markers may have been checked as part of routine HIV care rather than for HBV monitoring. Focusing on adherence to guidelines may ensure early detection of complications and provide patients with timely and appropriate care.

Disclosures. All authors: No reported disclosures.

2222. Calculated Globulin Adds Predictive Value to Hepatitis B Vaccine Response in HIV-infected Persons Independently of HIV Viral Load and CD4 Cell Count

Thomas O’Bryan, MD1,2,3; Chris Olsen, BS; Syed Rahman, BS; Jason Okulicz, MD2; Anuradha Ganesan, MD, MPH3,4; Tahaniyat Lalani, MD1,3,5; Robert Deiss, MD1,3,6 and Brian Agan, MD1,3,7,8; Infectious Disease Clinical Research Program, Uniformed Services University of the Health Sciences, Bethesda, Maryland, 2Infectious Disease Clinical Research Program, Uniformed Services University of the Health Sciences, Bethesda, Maryland, 3Infectious Disease Clinical Research Program, Uniformed Services University of the Health Sciences, Bethesda, Maryland, 4Infectious Disease Clinical Research Program, Uniformed Services University of the Health Sciences, Bethesda, Maryland, 5Infectious Disease Clinical Research Program, Uniformed Services University of the Health Sciences, Bethesda, Maryland, 6Infectious Disease Clinical Research Program, Uniformed Services University of the Health Sciences, Bethesda, Maryland, 7Infectious Disease Clinical Research Program, Uniformed Services University of the Health Sciences, Bethesda, Maryland, 8Infectious Disease Clinical Research Program, Uniformed Services University of the Health Sciences, Bethesda, Maryland

Session: 244. HIV and HBV
Saturday, October 7, 2017: 12:30 PM

Background. Response rates to hepatitis B (HBV) virus vaccine are low compared with the general population. Recent data suggest baseline total IgG levels add...