875. Sex Differences in Academic Achievement and Faculty Rank in Academic Infectious Diseases
Jennifer Mann-Goezler, MD, DSc, MSC,1 Neena Kapoor, MD,2 Daniel Blumenthal, MD, MBA1 and Wendy Stead, MD,1,2 Beth Israel Deaconess Medical Center, Boston, Massachusetts,4 Brigham and Women’s Hospital, Boston, Massachusetts,4 Massachusetts General Hospital, Boston, Massachusetts and 5 Infectious Diseases, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts
Session: 90. Featured Oral Abstract

Thursday, October 4, 2018: 4:05 PM

Background. Sex differences in faculty achievement in academic medicine have been described, but little is known about these differences in infectious diseases (ID). This study assesses differences in faculty rank between female and male infectious disease faculty with academic appointments at US medical schools.

Methods. We analyzed a complete database of US physicians with medical school faculty appointments in 2014. This database consists of a linkage between the American Association of Medical Colleges faculty roster and a comprehensive physician database from Doximity, a professional networking website for doctors and includes physician age, sex, years since residency completion, publications, National Institutes of Health grants, and registered clinical trials for all academic physicians by specialty. We estimated sex differences in key metrics of academic achievement, including publications and faculty rank, among faculty physicians within ID. Multivariable regression models with medical school-specific fixed effects were used to assess sex differences in full professorship by specialty and the relationship between these factors and achieving the rank of full professor within ID.

Results. Among 2,016 academic ID physicians [Female: 742 (37%)], women accounted for 48.1% of assistant professors, 39.7% of associate professors, and 19.2% of full professors, when compared with men at each level. Women faculty members were younger than men (mean: 48.4 years vs. 54.0 years, P < 0.001) and had fewer total publications (mean: 2.6 vs. 37.8, P < 0.001) and first/last author publications (mean: 16.7 vs. 32.2, P < 0.001). In adjusted models, the rate of full professorship (vs. assistant or associate) among female compared with male infectious disease physicians was large and highly significant (absolute adjusted difference = −8.0%; 95% confidence interval [CI]: −11.9% to −4.1%). This adjusted difference was greater in ID than in cardiology (−4.7%, 95% CI: −7.9% to −1.3%), hematology (−1.5%, 95% CI: −6.2% to 3.2%), or endocrinology (−0.2%, 95% CI: −4.9% to 4.6%).

Conclusion. Significant sex differences in publications and achieving the rank of full professor exist, after adjusting for multiple factors known to influence these outcomes. Greater efforts should be made to address equity in academic ID.

Disclosures. All authors: No reported disclosures.

919. Clinical and Microbiologic Characteristics Associated With Long-Term Orthopedic Complications Following Staphylococcus aureus Acute Hematogenous Osteoarticular Infections in Children
J. Chase McNeil, MD;4 Erin Kok, BS;2 Lauren Sommer, MS;2 Jesus G. Vallejo, MD, FIDSA;2 Kristina G. Hulten, PhD3 and Sheldon L. Kaplan, MD, FIDSA1, Pediatrics, Section of Infectious Disease, Baylor College of Medicine and Texas Children's Hospital, Houston, Texas,3 Baylor College of Medicine, Houston, Texas, Pediatrics, Baylor College of Medicine and Texas Children's Hospital, Houston, Texas and 4 Baylor College of Medicine and Texas Children's Hospital, Houston, Texas
Session: 112. Bacterial Infections and Antimicrobial Stewardship
Friday, October 5, 2018: 8:45 AM

Background. Staphylococcus aureus is the most common cause of acute hematogenous osteoarticular infections (AHOAs) in children. While the vast majority of patients do well, a small proportion experience significant morbidity, including chronic infection and pathologic fractures. We sought to describe clinical and microbiologic variables present on the index admission that may predict long-term orthopedic complications (OC).

Methods. Cases of S. aureus AHOAI were identified from 2011 to 2016 at Texas Children's Hospital (TCH). All cases were reviewed for the development of OC until April 1, 2018. OC included chronic osteomyelitis (CO), growth arrest/limb length discrepancy, avascular necrosis, chronic dislocation, and pathologic fracture (PF) with or without angular deformity. All S. aureus isolates were characterized by PCR for Panton–Valentine Leukocidin (PVL) genes and agr group. Statistical Analyses were performed with PERTA.

Results. A total of 252 cases were identified meeting inclusion criteria (figure). Twenty-four (9.5%) developed CO of which, 50% were CO and 25% PF. Patients who developed CO more often had positive blood cultures during the index admission (P < 0.001), surgical drainage after hospital day 2 (33.3% vs. 8.8%, P = 0.02) as well as a longer time to 50% reduction in C-reactive protein (CRP; 9 vs. 7 days, P = 0.01). Patients who developed PF more often had infection due to PVL-positive organisms (83.3% vs. 38.6%, P = 0.03) and had a longer duration of fever after admission (9.5 vs. 2.5 days, P = 0.03). Overall, OC were associated with ICU admission (P = 0.04), a slower decline in CRP (P = 0.02) and a greater proportion of patients with surgery after hospital day 2 (P = 0.04) as well as infection secondary to agr III isolates (P = 0.03). There was no statistically significant relationship between OC and patient age, affected bone, time to initiation of effective antimicrobial therapy, duration of intravenous therapy, or final antibiotic choice.
Patients with S. aureus AHOA1 with a delay in source control, slow decline in CRP, prolonged fever or ICU admission are at higher risk of OC. While nonspecific, these findings suggest that such patients may warrant especially cautious clinical follow-up to identify sequelae early. Large multicenter studies are needed to better predict OC in this setting.

Disclosures. All authors: No reported disclosures.

920. A Sharp Fall in Antibiotic Use in Infants Is Correlated With a Population-Wide Reduction in Asthma Incidence for Children Under 5
David Patrick, MD, MHSc, FRCP(C);1 Drona Rasali, PhD, FACE;2 Caren Rose, PhD3 and Fawziah Marra, PharmD, FCSPH;4 1School of Population and Public Health, University British Columbia, Vancouver, British Columbia, Canada, 2British Columbia Centre for Disease Control, Vancouver, British Columbia, Canada and 3Pharmaceutical Sciences, University of British Columbia, Vancouver, British Columbia, Canada

Session: 112. Bacterial Infections and Antimicrobial Stewardship
Friday, October 5, 2018: 8:45 AM

Background. Antibiotic use in infants <1 is associated with increased relative risk (~1.5) for childhood asthma in cohort studies. This may be mediated by removal from the infant microbiome of organisms shown to protect against asthma, a hypothesis supported by experiment. We launched this study to see whether reductions in antibiotic use at population level are associated with benefit by way of asthma reduction.

Methods. We obtained antibiotic prescribing data from BC PharmaNet, a population-based database that captures all outpatient prescribing for British Columbia, Canada (n = 4.7 million). We focused on prescriptions in children <1 and calculated prescription rate per 1,000 population per year. We obtained asthma incidence data from the BC Ministry of Health Chronic Disease Registry. Asthma case identification uses a standard case definition making use of community and hospital diagnostic codes as well as asthma drug data from BC's universal phy-sician billing, hospital and drug databases. We focused on age-stratified asthma incidence for children aged 1–4. The correlation between antibiotic prescription rate in children <1 and asthma incidence in the following year was estimated using the Spearman test.

Results. Antibiotic prescribing for all age groups fell 9.5% between 1999 and 2013. The rate for infants <1 dropped 58% from 1.014 to 427 prescriptions per 1,000 population/year. Between 2000 and 2014, asthma incidence (ages 1–4) fell 26% from 27.3 (95% CI: 26.5–28.0) to 20.2 (95% CI: 19.5–20.8) per 1,000 population/year. These trends were strongly correlated: Spearman’s rho = 0.81 (P = 0.0002). The magnitude of fall in asthma incidence is slightly greater than that predicted based on calculated antibiotic attributable risk for antibiotic exposure.

Conclusion. The population health benefit from antibiotic stewardship in infants may not be confined to slowing the emergence of resistance and could include a reduced risk of asthma. As this is a population-based ecological study, a reduction in other risk factors may also have contributed to the fall in asthma incidence. This prompted us to characterize antibiotic prescribing for children in family medicine clinics.

Disclosures. All authors: No reported disclosures.

921. Antibiotic Prescribing for Children in Family Medicine Clinics Within a Practice Research Network
Nicole Poole, MD, MPH1; Matthew Kronman, MD, MSCE2; Jeffrey S. Gerber, MD, PhD3; Laura-Mae Baldwin, MD4 and Danielle Zerr, MD, MPH, FPIDS5 1Pediatric Infectious Diseases, Seattle Children’s Research Institute, Seattle, Washington, 2Pediatrics, University of Washington, Seattle, Washington, 3Department of Pediatrics, Division of Infectious Diseases, Children’s Hospital of Philadelphia, Philadelphia, Pennsylvania, 4Family Medicine, University of Washington, Seattle, Washington

Session: 112. Bacterial Infections and Antimicrobial Stewardship
Friday, October 5, 2018: 8:45 AM

Background. Family medicine clinics provide care for one-third of US children, yet comprehensive data about antibiotic prescribing in this patient population are lacking. We aimed to characterize antibiotic prescribing for children in family medicine clinics.

Methods. A retrospective cohort of patients aged 0–17 years with a visit to a family medicine clinic within the Washington, Wyoming, Alaska, Montana, and Idaho (WWAMI) Region Practice and Research Network (WPRN) from January 1, 2014 to April 30, 2017 was studied. Patients with complex chronic conditions were excluded. We defined narrow-spectrum antibiotics as peni-cillin, amoxicillin, first-generation cephalosporins, sulfonamides, and nitro-furantoin; and broad-spectrum antibiotics otherwise. On the basis of national guideline recommendations and a previously published hierarchical classification system, we assigned diagnoses to one of the 3 tiers: diagnoses for which antibiotics were (1) almost always indicated (e.g., bacterial pneumonia), (2) may be indicated (e.g., pharyngitis), and (3) generally not indicated (e.g., bronchiolitis/bронchitis).

Results. We studied 26,779 pediatric patients with 97,228 clinic visits. Oral antibiotics were prescribed in 10,922 (11%) of all encounters. The median rate of antibiotic prescribing among providers was 14% (interquartile range: 9.9%–18.5%). Of all antibiotics prescribed, 51% were broad-spectrum agents. Acute respiratory tract infections (ARTIs) accounted for 67% of all antibiotics prescribed. Of the antibiotics prescribed for ARTI, 23% were for diagnoses where antibiotics are generally not indicated. First-line guideline-recommended antibiotic regimens were prescribed 86% of the time. Otitis media, 30% of sinusitis, 68% of pharyngitis, and 31% of community-acquired pneumonia diagnoses. Azithromycin monotherapy was prescribed in 52% of community-acquired pneumonia diagnoses.

Conclusion. Specific targets for improving antimicrobial prescribing within a family medicine practice research network include prescribing of broad-spectrum antibiotics (particularly azithromycin), prescribing for conditions where antibiotics are not indicated, and first-line guideline-recommended prescribing for pharyngitis and community-acquired pneumonia diagnoses.

Disclosures. All authors: No reported disclosures.

922. Barriers to Pediatric Staff Nurse Participation in Antimicrobial Stewardship Programs (ASP) Linked to Organizational Culture
Elizabeth Monsees, MSN, MBA, RN, CIC, FAPIC1; Lori Popejoy, PhD, APRN, GCNS-BC, FAAN2; Jennifer Goldman, MD, MS3; Mary Anne Jackson, MD, FIDSA, FPIDS4; and Brian R. Lee, MPH, PhD5 1Patient Care Services Research, Children’s Mercy Hospital, Kansas City, Missouri, 2Sinclair School of Nursing, University of Missouri, Columbia, Missouri, 3Children’s Mercy Kansas City, Kansas City, Missouri, 4Pediatrics, Children’s Mercy Hospital, Kansas City, Missouri and 5Health Outcomes, Children’s Mercy Kansas City and University of Missouri-Kansas City SOM, Kansas City, Missouri

Session: 112. Bacterial Infections and Antimicrobial Stewardship
Friday, October 5, 2018: 8:45 AM

Background. Increasing nurse engagement in Antimicrobial stewardship programs (ASP) is a national initiative. We previously reported results from a stewardship survey where nurses indicated being confident to perform ASP prac-tices, yet identified barriers to stewardship participation. Seventeen barriers were identified, with many centered around hospital culture such as lack of inclusion in rounds, power differentials, and nurse input not actively sought. To further understand organizational and cultural barriers which may influence nursing stewardship engagement, we used responses from the Agency for Healthcare Research and Quality (AHRQ) Patient Safety survey to evaluate nursing perception on hospital culture.

Methods. Data from the 2017 AHRQ survey were used. Nurses working on non-inpatient floors (e.g., post anesthesia care units) were excluded. For this analysis, we included 4 domains pertinent to stewardship initiatives: communication, information exchange, teamwork within and across units. Composite scores within each domain were calculated. Scores were stratified by Intensive Care Nursery (ICN), Pediatric Intensive Care Unit (PICU), Oncology (Onc), medical-surgical (med-surg) units, and dual units (e.g., float pool).

Results. A total of 424 nurses participated in the survey. 138 (33%) ICN, 90 (21%) PICU, 42 (10%) Onc, 168 (40%) med-surg, and 23 (5%) dual. The majority of nurses had been employed by the hospital for 0–5 years (237; 56%) with 78 (18%) having more than 15 years. The majority of nurses expressed neutrality with communication. Responses were relatively consistent across units.