pedal edema (31.4%), pallor (39.4%), vomiting (26.7%) were most common findings apart from fever and dyspnoea. Nine of them had bleeding manifestations. The most common diagnosis was Scrub typhus which occurred significantly during post monsoon season. Scrub typhus constituted the majority of fever with ARDS cases followed by H1N1. Coinfections were common cause of Fever with ARDS. Predictors of mortality were male gender, old age, long duration of invasive ventilation, higher serum procalcitonin levels and low GCS at admission. APACHE II score was a better predictor of mortality than SOFA score.

Disclosures. All authors: No reported disclosures.

1476. Objective Surveillance Definitions for Hospital-Acquired Pneumonia in Non-Ventilated Patients

Wenjing Ji, MS1; Cara Smith, MPH2; Zilu Zhang, MS3; Aileen Ochoa, MPH4; Jessica Young, PhD2; Chanu Rhee, MD, MPH4; and Michael Klempas, MD, MPH4,5,1

1Xian Jiaotong University, Xian, China, 2Harvard Pilgrim Health Care Institute, Boston, Massachusetts, 3Division of Infectious Diseases, Brigham and Women’s Hospital, Boston, Massachusetts, 4Department of Population Medicine, Harvard Medical School and Harvard Pilgrim Health Care Institute, Boston, Massachusetts, 5Brigham and Women’s Hospital

Session: 148. Respiratory Infections: Miscellaneous
Friday, October 5, 2018: 12:30 PM

Background. Pneumonia is the most common hospital-acquired infection; most cases occur in nonventilated patients, yet the majority of hospitals do not track nonventilator hospital-acquired pneumonia (NV-HAP) given the complexity and subjectivity of CDC’s current surveillance definition and large number of patients at risk. We sought to develop objective, electronically computable surveillance definitions for NV-HAP to facilitate routine surveillance.

Methods. We developed ten candidate definitions based on different combinations of 6 clinical indicators and applied them to 60,725 adult admissions of ≥3 days to Brigham and Women’s Hospital between July 2015 and June 2017. Potential indicators included worsening oxygenation, new antibiotics given for ≥3 days, fever, abnormal white blood cell count, chest imaging orders, and respiratory cultures on hospital day ≥3. Worsening oxygenation was defined as ≥2 days of decreased oxygen saturation or escalation of supplemental oxygen from ≤28% to ≥37% stable oxygenation. We calculated incidence and prevalence rates for each definition. We then matched each case with up to four controls on the basis of clinical service and duration of hospitalization and measured associations between each definition and increased mortality and length of stay, adjusting for patients’ demographics, comorbidities, and severity of illness.

Results. The incidence of NV-HAP ranged from 7.6 events per 100 admissions with the least restrictive definition (worsening oxygenation alone), to 0.7 events per 100 admissions (worsening oxygenation, fever or leukocytosis, and new antibiotics), to 0.2 events per 100 admissions (all signs present). Crude mortality rates ranged from 17% in ham and Women’s Hospital to 1.5% in controls vs. controls ranged from 1.7% (95% CI 1.5–1.9) to 2.1 (95% CI 2.0–2.2).

Conclusion. We demonstrate the feasibility of applying electronically computable electronic surveillance definitions for NV-HAP. These definitions yield incidence and mortality rates comparable to existing estimates based on manual surveillance Methods. Further work is needed to better understand the clinical correlates of these events and their potential preventability.

Disclosures. All authors: No reported disclosures.

1477. MUCOVIB Project: Concordance Between Upper and Lower Airway Microbiota in Children with Cystic Fibrosis

Sandra Asen, MD, MSc; University Hospital Lauzanne, Lausanne, Switzerland

Session: 148. Respiratory Infections: Miscellaneous
Friday, October 5, 2018: 12:30 PM

Background. Inconsistent intra-individual microbiota between upper and lower respiratory niches has been reported among infants with Cystic Fibrosis (CF). We aimed to investigate the concordance between the bacterial community composition of 20 oropharyngeal (OP) samples and 20 corresponding sputa, collected from children with CF above one year of age.

Methods. As part of the “cystic fibrosis, respiratory viruses, intracellular bacteria and fastidious organisms” (MUCOVIB) project, all children under 18 years of age with diagnosed CF were recruited into a Swiss multicentric study. Respiratory samples included OP swabs collected from all children in addition to sputa collected from those able to expectorate. Sequencing and data analysis of amplicons of the V3–V4 variable regions from the 16S rRNA-encoding gene were performed. Paired-read were assembled with DADA2 and assigned to operational taxonomic units (OTUs) using vegan and assigned to taxonomical ranks using Qiime and the EzBioCloud database. Non-metric multidimensional scaling, ANOVA and PERMANOVA were used to analyze the bacterial diversity in upper and lower respiratory niches.

Results. Fifty-eight children, of whom 29 (50%) provided 51 sputa samples. From these 29, 10 patients (40 samples) provided concomitant OP and sputa samples. Bacterial biodiversity among children with CF unable to expectorate.

Disclosures. All authors: No reported disclosures.

1478. A Retrospective Review of Pseudomonas aeruginosa Infection in a Quaternary Intensive Care Unit: Epidemiology, Outcomes, and Antibiotic Sensitivities 2013–2016

Brittany E. Kula, MD1; Wendy J. Sigl, MD, MSc, FRCPCC2 and Darren Hudson, MD, MSc, Internal Medicine, University of Alberta, Edmonton, AB, Canada, Infectious Diseases and Critical Care Medicine, University of Alberta, Edmonton, AB, Canada, Critical Care Medicine, University of Alberta, Edmonton, AB, Canada

Session: 148. Respiratory Infections: Miscellaneous
Friday, October 5, 2018: 12:30 PM

Background. Pseudomonas aeruginosa (PA) is known to cause infection in the intensive care unit (ICU) and contribute to substantial morbidity and mortality. The objectives of this study were to describe the epidemiology, antimicrobial resistance and outcomes in critically ill patients with pseudomonal infection.

Methods. Patients with PA isolated during ICU admission from 2013–2016 were identified using a provincial microbiology database. Patients were classified as colonized or infected. Those with infection were reviewed for source of infection, patient characteristics, antimicrobial susceptibilities, appropriateness of empiric antimicrobial therapy and 30-day mortality. Independent predictors of mortality were identified using multivariable logistic regression.

Results. A total of 196 unique patients were culture-positive for PA. 140 (71%) were infected and included for analysis. Mean patient age was 55.4 years (18.4 SD) and 62% were male. Admission categories included medical (71%), surgical (20%), and trauma or neurological (9%). Mean APACHE II score at the time of ICU admission was 19.4 (9.8 SD). One hundred and twenty-six (90%) patients required invasive mechanical ventilation, 102 (73%) vasopressor support and 27 (19%) new initiation of renal replacement therapy. Thirty-two (23%) died within 30 days of ICU admission. The median length of stay (LOS) was 17 (IQR 5–27). Mortality was 17% on day 1 (IQR 0–9). Sources were respiratory (66%) followed by skin/soft tissue (11%), urinary (10%), and blood (5%). Twenty (14%) isolates were multi-drug resistant (MDR) and six (4%) were extensively drug resistant (XDR). There were no pan-resistant isolates. One hundred and one (52%) of infections were nosocomial. Empiric antimicrobial therapy was effective in 97 (69%) cases. On multivariable analysis liver disease (aOR 6.2, 95% CI 1.5–25.7; P = 0.01), malignancy (aOR 5.0, 95% CI 1.5–17.3; P = 0.01) and higher APACHE II score at the time of admission (aOR 1.1, 95% CI 1.0–1.1; P = 0.02) were independently associated with 30-day mortality.

Conclusion. PA in the ICU in patients with substantial morbidity and is most commonly isolated from the respiratory tract. Existing malignancy, liver disease and higher APACHE II score at admission were independently associated with mortality.

Disclosures. All authors: No reported disclosures.

1479. Evaluating the Impact of Procalcitonin on Antibiotic Utilization in Chronic Obstructive Pulmonary Disease Exacerbations

Kevin Lin, PharmD1; Casey Dempsey, PharmD2; Shivani Patel, PharmD, BCPS3; John Butler, MD4 and Edward Septimus, MD, FIDSA, FSHEA1; Memorial Hermann Southwest Hospital, Houston, Texas, 2Population Medicine, Harvard Medical School, Houston, Texas

Session: 148. Respiratory Infections: Miscellaneous
Friday, October 5, 2018: 12:30 PM

Background. Antibiotic prescription rates for treating exacerbations of chronic obstructive pulmonary disease (COPD) have been reported as high as 90% to the United States. Research has shown that over 50% of COPD exacerbations are due to viral etiologies. Elevations in procalcitonin (PCT) levels can be seen in bacterial infections and can help guide the need for antimicrobial therapy. The goal of this study is to evaluate the impact of PCT on antibiotic use in patients with COPD exacerbations.

Methods. We conducted a retrospective, pre- and post-intervention study. Patients at least 18 years of age, with a diagnosis of COPD exacerbation, and had a PCT level drawn within 24 hours of admission were included. Exclusion criteria included patients presenting with severe trauma, sepsis, bacterial pneumonia, patients who required invasive mechanical ventilation, and patients with an initial admission to the ICU. The primary outcome was antimicrobial duration of therapy. Secondary outcomes included hospital length of stay (LOS), respiratory-related 30-day readmission rates, and neurologic status defined as ICU admission, requirement of invasive mechanical ventilation, or death.

Results. A total of 139 patients were evaluated with 64 and 75 patients in the pre- and post-intervention cohorts, respectively. PCT guidance was associated with a significant reduction in number of antibiotic days of therapy (7.1 days vs. 2.4 days; P < 0.001). A trend in decreasing LOS was observed but did not reach statistical
Impact of a Guidance Document, Order Set Changes, and Physician Education on Antibiotic Prescribing in Acute Exacerbation of COPD
Jayme Anderson, PharmD, BCPS; Spencer Evans, PharmD candidate; Scott items; PharmD, FCP, BCPS; and Tiffany Van Schoorfeld, MD, FACP; Nebraska Medicine, Omaha, Nebraska, 1University of Nebraska Medical Center College of Pharmacy, Omaha, Nebraska, 2Department of Pharmaceutical Care, Nebraska Medicine, Omaha, Nebraska, 3Division of Infectious Diseases, University of Nebraska Medical Center, Omaha, Nebraska Session: 148. Respiratory Infections: Miscellaneous Friday, October 5, 2018: 12:30 PM Background. Current guidelines provide vague recommendations regarding antibiotic choice and duration, and patients most likely to benefit from antibiotics during an acute exacerbation of chronic obstructive pulmonary disease (AECOPD). We sought to improve antibiotic prescribing through multidisciplinary creation of a clinical guidance document, order set with imbedded clinical decision support (CDS), and provider education on the management of AECOPD. Methods. A quasi-experimental study was conducted in adult patients (age ≥18 years) admitted to Nebraska Medicine for suspected AECOPD before and after clinical decision support was introduced. Patients in the pre-implementation period (10 weeks, April 29, 2016 – June 30, 2016, N = 44) and the post-implementation period (10 weeks, April 12–June 29, 2017, N = 51) were included if COPD was the primary diagnosis code or the COPD exacerbation order set was used at admission. Exclusion criteria included AECOPD admission within the previous 30 days and transfer from an outside hospital. Outcome measures included: percentage of patients receiving antibiotics, median length of therapy, order set usage, antibiotic choices, length of stay (LOS) and oral steroid use. Results. Post-implementation, the percentage of patients prescribed antibiotics decreased (86.4% vs. 60.8%, P = 0.006) as did antibiotics ordered from the order set (29.5% vs. 13.7%). Median length of therapy decreased from 1 day to 0 days post-implementation, respectively. Fluoroquinolone use decreased from 43.2 to 25.5% while azithromycin use remained consistent (18.2% vs. 17.6%). Oral steroid use increased post-implementation (27.3% vs. 42.2%) and average duration of steroid use decreased (11.1 vs. 8.7 days). Average LOS was 3.7 days in both groups and in-hospital mortality was low (2% vs. 0%). Conclusion. Implementation of an AECOPD guidance document, order set with CDS, and education resulted in significant decreases in antibiotic usage, particularly for prolonged therapy. Transfer from an outside hospital was also associated with using a symptomatic stewardship strategy. Our data supports the utilization of this strategy to promote evidence-based antibiotic management in AECOPD. Disclosure. All authors: No reported disclosures.

Clinical Outcomes of Escherichia coli Infections in Cystic Fibrosis (CF) Patients
Breit Edwards, MD; 1 Jasper Greysson-Wong, B.Sc.; 2 Ranjani Somayaji, MD; 2 Barbara Waddell, BSc; 2 Doug Storey, PhD; 2 Michael Surette, MD; 2 Harvey Rabin, MD and Michael Parkinson, MD; 1 Department of Medicine, University of Calgary, Calgary, AB, Canada, 2University of Calgary, Calgary, AB, Canada, 3Department of Medicine, University of Calgary and Alberta Health Services–Calgary zone, Calgary, AB, Canada, 4McMaster University, Hamilton, ON, Canada Session: 148. Respiratory Infections: Miscellaneous Friday, October 5, 2018: 12:30 PM Background. Despite a growing interest in emerging pathogens in CF, research has largely overlooked commonplace organisms. Escherichia coli has been reported in up to 50% of CF respiratory samples, yet little is known about its clinical impact. We sought to investigate outcomes of E. coli infection in CF. Methods. We undertook a retrospective cohort study of patients (218 years), attending a Canadian CF clinic between 1978 and 2016 with at least one E. coli positive sputum culture. Infection was classified as transient (21 isolate) or persistent (23 isolates over a period 26 months). Clinical and demographic data were collected from patient charts 2 years pre- and post-infection incident. For each patient with persistent infection, we collected data on two age (≥13 years), sex, and time-matched control patients for comparison. Outcomes sought included risk of pulmonary exacerbation (PEs), lung function decline (FEV1), antibiotic resistance progression to transplant or death. Susceptibility testing was performed as per CLSI standards. Results. A total of 45 (12.3%) patients (median age 23.5 (IQR 20.0–34.8), 52% male) cultured E. coli in their sputum at least once. At incident infection, 24% had PEs but this was not increased relative to prior visits (RR 0.6, 9 P = 1.00). Of the cohort, 18 (40%) developed persistent infection. Persistent infection developed in patients with lower nutritional scores (BMI) (<2.6 kg/m2, P < 0.001) and lung function (FEV1 %; 57.2 vs. 74.2, P = 0.02). Compared with matched controls, those with persistent infection had no increase in mean annual lung function decline (difference ~0.06%/year; P = 0.24), odds of PEx (OR 1.4, P = 0.26), or mean annual hospital IV days (difference 0.31 days, 95% CI ~0.97 to 5.39 days, P = 0.91). Five patients underwent lung transplantation and three died at 5-year follow-up, but this did not differ between transient and persistent infection (P = 0.63 and P = 0.25, respectively). TMP-SMX resistance (P = 0.05), but not ESBL production in incident isolates, was predictive of persistence (P = 0.56). Conclusion. In this Canadian CF cohort, E. coli infection was common and occurred more frequently in patients with compromised nutrition and lung function. Persistent infection with E. coli did not portend worse clinical outcomes. Multi-centre studies are merited to further understand the epidemiology and clinical impact of E. coli infection. Disclosure. All authors: No reported disclosures.

Changing Patterns of HIV-TB Coinfection Among Patients in a Public Health Department Ambulatory Care Setting: A 5-Year Experience from a US Metropolitan Area
Anteneh Addisu, MD, PhD; 1 Sadaf Aslam, MD; 2 Douglas Holt, MD; 3 Sally Alrabaa, MD and Beata Canosa, DO; 3 Internal Medicine Division of Infectious Diseases and International Medicine, University of South Florida Morsani College of Medicine, Tampa, Florida, 1Division of Infectious Diseases and International Medicine, University of South Florida, Morsani College of Medicine, Tampa, Florida, 2Division of Infectious Disease and International Medicine, University of South Florida, Tampa, Florida, 3 Infectious Diseases and International Medicine, University of South Florida, Tampa, Florida, Infectious Disease, University of South Florida, Tampa, Florida Session: 148. Respiratory Infections: Miscellaneous Friday, October 5, 2018: 12:30 PM Background. HIV–TB coinfection leads to a complex set of synergistic interactions in the epidemiology, risk of acquisition, pathogenesis and prognosis of both infections. Despite a growing interest in the epidemiology of HIV-TB coinfection has been around 6% for the past several years. We present here a 5-year experience at a public health department ambulatory care setting in Tampa, Florida, showing potentially changing patterns. Descriptive data and clinical aspect of conected patients is presented. Methods. A retrospective review of tuberculosis cases over the 5-year period ending December 2017 was performed. Those with HIV coinfection were included in the study. Clinical, microbiological and/or PCR based testing methods were used to make the diagnosis. SSPS was used to compile basic descriptive statistics. Results. The prevalence of HIV-TB coinfection in our cohort is slightly higher than the recent US average of 6% perhaps signifying the setting and demographics of our patient population. Our cohort was relatively older, most of them US born, and had predominantly pulmonary TB contrary to prior reports. These changing patterns may have been influenced by the overall older age of HIV patients in general or that could be indicators of underlying fundamental changes in the HIV-TB coinfection state at large. Additional study is needed to further elucidate this variance. Disclosure. All authors: No reported disclosures.

Plural Empyema Caused by Stenotrophomonas maltophilia in a National Cohort of Hospitalized Veterans
Pavel Masroujeh, MD; 1 Elle Saade, MD, MPH; 2 Brigid Wilson, PhD; 3 Federico Perez, MD, MSc and Robert A. Bonomo, MD; 1 Medicine, University Hospitals Cleveland Medical Center, Cleveland, Ohio; Medicine, Louis Stokes VA Medical Center, Cleveland, Ohio, 2Division of Infectious Diseases and HIV Medicine, Department of Medicine, Case Western Reserve University School of Medicine, Cleveland, Ohio, 3Geriatric Research, Education, and Clinical Center, Cleveland VA Medical Center, Cleveland, Ohio, 4Louis Stokes Cleveland VA Medical Center, Cleveland, Ohio, 5Case Western Reserve University, Cleveland, Ohio Session: 148. Respiratory Infections: Miscellaneous Friday, October 5, 2018: 12:30 PM Background. S. maltophilia is an environmental multi-drug-resistant Gram-negative bacteria that is mostly found as a respiratory tract colonizer in patients with chronic obstructive pulmonary disease (COPD) and as an opportunistic (CF) and as an opportunity in immunocompromised hosts. To understand the role of this pathogen in non-CF patients, we performed a retrospective analysis of hospitalized patients with S. maltophilia empyema in the Veterans Health Administration (VHA). Methods. Using microbiology results within the VHA Corporate Data Warehouse, we identified pleural fluid cultures that tested positive for S. maltophilia