Session: 163. Public Health
Friday, October 4, 2019: 12:15 PM

Background. Yersinia pestis remains endemic in countries throughout Africa, Asia, and the Americas and is a tier 1 bioterrorism agent. Antibiotic treatment with aminoglycosides such as streptomycin or gentamicin is effective when initiated early in the course of illness but can have serious side effects. Alternatives such as fluoroquinolones, tetracyclines, and sulfonamides are potentially safer but currently lack robust human data on their efficacy.

Methods. We searched PubMed Central, Medline, Embase, CINAHL, and other databases for articles in any language with terms related to plague, Yersinia pestis, and antibiotics. Articles that contained case-level information on antibiotic treatment and patient outcome were included. We abstracted information related to patient demographics, clinical features of plague, treatment, and survival using a standardized form.

Results. Among 4,874 articles identified and screened, we found 723 published cases of treated plague reported between 1937 and 2016. Fifty-two percent of patients were male; median age was 22 years (range: 8 days–80 years). Cases were most commonly reported from the United States (21%), India (13%), China (11%), Vietnam (10%), and Madagascar (10%). Overall, the case fatality rate was 21%. The majority of patients had primary bubonic (64%), pneumonic (21%), or septicemic (4%) plague, of which survival was 83%, 71%, and 55%, respectively. Among those treated with an aminoglycoside (n = 386, 53%), survival was 86%. Among those treated with a tetracycline (n = 145, 20%), fluoroquinolone (n = 45, 6%), or sulfonamide (n = 311, 43%), survival was 90%, 84%, and 77%, respectively. Survival rates did not substantially differ between patients treated with antibiotics, two classes of antibiotics, or no antibiotics.

Conclusion. Published cases of treated plague offer an opportunity to evaluate the treatment efficacy of different antibiotic classes. In addition to aminoglycosides, tetracyclines, fluoroquinolones, and sulfonamides appear to be effective for plague treatment, although publication bias and low numbers in certain treatment groups may limit interpretation.

Disclosures. All authors: No reported disclosures.

1637. Antibiotic Use in Lower Respiratory Tract Infections: Insights From Patient Interviews in Sri Lanka
David T. van Melle, MD1; Guus H.A. ten Asbroek, MSc, PhD2; Sky Vanderburg, MD, MPH3; Yohana W. Abeysinghe, MD3; Chathurangi Halloluwu, MD3; Helen L. Zhang, MD3; Tianchen Sheng, MSc2; Kanchana Sewwandi, MSc2; Champika K. Bodinayake, MBBS MD2; Ajith Nagahawatte, MBBS MD2; Chris W. Woods, MD3; Vijitha De Silva, MBBS MD3; L. Gayasi Tillekeratine, MD, MSc3; 1Amsterdam University Medical Center, Amsterdam, New York, New York; 2Duke University Medical Center, Durham, North Carolina; 3University of Ruhuna, Galle, Southern Province, Sri Lanka; 4Duke University School of Medicine, Durham, North Carolina

Session: 163. Public Health
Friday, October 4, 2019: 12:15 PM

Background. Antibiotic resistance is an emerging global public health threat with a major driver of antibiotics as one of the major drivers. In Sri Lanka, antibiotic consumption is increasing, while little is known about how patients perceive antibiotics. We conducted a qualitative study to better understand patients’ knowledge, perceptions, and attitudes toward antibiotics.

Methods. Semi-structured interviews were conducted in the local language (Sinhala) and audio recorded for 18 patients with lower respiratory tract infections (LRTI) admitted to a large, public tertiary care hospital in southern Sri Lanka. Interviews were transcribed and then translated into English. Translated interviews were coded for themes regarding care-seeking behavior, patients’ knowledge of disease etiology and antibiotics was poor. Most patients described themselves as having acute, chronic, or subacute cases presented less constantly throughout the year. The sensitivity of blood cultures was low, with a peak in acute cases after the rainy season; mainly in months March to June.

Conclusion. This qualitative study in Sri Lanka suggests inappropriate use of antibiotics is a multifactorial problem. Patients’ poor knowledge of disease and treatment, poor information transfer between physicians and patients, high demand for medicines, overprescribing by physicians, and self-medication were found as possible obstructive factors to improve antibiotic usage. To improve antibiotic use, a multifaceted approach is needed with improvement of awareness by patients, public, and physicians regarding antibiotic use and antibiotic resistance.

Disclosures. All authors: No reported disclosures.

1638. Measles Outbreak Risk Assessment for Transplant Candidates and Recipients
Elana Kreiger-Benson1; Bruce Gell, MD2; Henry J. Neumann, MD2; Hochman Sarah, MD3; Jennifer Lighter, MD3; Sapna A. Mehta, MD3; 1New York University School of Medicine, New York, New York; 2New York University Langone Medical Center—Tisch Hospital, New York, New York; 3New York University Medical Center, New York, New York

Session: 163. Public Health
Friday, October 4, 2019: 12:15 PM

Background. A measles outbreak began in 2018 with ongoing transmission in the New York City (NYC) area, affecting children and vulnerable adults. We developed a systematic 3-part approach to address measles risk in our solid-organ transplant program’s adult population by 1) identification of non-immune adults living in at-risk ZIP codes 2) education focused on risk reduction for all-at-risk patients and families and 3) vaccination of non-immune waitlisted patients and consideration of prophylactic immunoglobulin G (IgG) for post-transplant non-immune patients at high risk for measles exposure.

Methods. All waitlisted and transplanted patients residing in any of 11 ZIP codes with recent measles cases in the NYC area as of April 4, 2019, were included. We also focused on the 4 ZIP codes in the NYC Health Commissioner’s vaccination order from April 9, 2019. We reviewed electronic medical records (EMR) of patients born after 1956 for measles immunity by serology or vaccine documentation. A 1-page measles patient education handout was created, reviewed for health literacy appropriateness and utilized in English and non-English language versions.

Results. 118 waitlisted or previously transplanted patients resided in at-risk ZIP codes. Among the 118 patients, 56 (47.5%) were presumed immune based on birth year before 1957. Among 62 patients born in 1957 or later, 5 (8.1%) had preexisting positive measles IgG in the EMR and 1 patient had documentation of measles vaccination without measles IgG testing. Fifty-seven patients without confirmed immunity. Of these, 52 patients were tested for measles IgG. Forty-six patients had equivocal immunity. Among transplanted patients identified as non-immune or with equivocal immune status, a recommendation for prophylactic IgG was made. All 118 patients received a measles informational handout by mail. Furthermore, we identified 21 patients born after 1956 living in the 4 zip codes targeted by the NYC Health Commissioner’s order, and among those tested all were found to be immune.

Conclusion. A systematic risk assessment during a large measles outbreak identified at-risk transplant patients and provided timely education and screening for measles immunity.

Disclosures. All authors: No reported disclosures.

1639. Outbreak of Human Bartonellosis Due to Bartonella bacilliformis in the Ecuadorian Andes
David Santiago Larreategui Romero1; Lizeth Veronica Lafuente Cevallos2; 1Hospital Del IESS-Carlos Andrade Marin, Quito, Pichincha, Ecuador; 2Hospital del IESS- Carlos Andrade Marin, Quito, Pichincha, Ecuador

Session: 163. Public Health
Friday, October 4, 2019: 12:15 PM

Background. Bartonellosis affects small Andean communities in Peru, Colombia, and Ecuador. Research in this area has been limited; our study presents a continuous outbreak of cases that occurred in 2018 in areas near the cloud forest of the Ecuadorian Andes.

Methods. Retrospective review of 101 cases of human bartonellosis managed in Quito - Ecuador, during the last outbreak in our country in the last year (2018). The study focused upon the most recent outbreak in order to look at current manifestations of disease and existing practices in diagnosis and management, and how closely these followed the latest guidelines to manage this disease.

Results. Of the 101 patients reviewed, 52% were male and 48% were female. The mean age of cases was 24.3 years, (mean age of males = 23.7; mean age females = 25.3). The median age of patients was 20 years (min = 4 years, max = 71 years, IQR = 15). There was a peak in acute cases after the rainy season; mainly in months March to June, chronic cases presented less constantly throughout the year. The sensitivity of blood smear against blood culture in acute disease was 35%. The most commonly used treatment for chronic disease was rifampicin; chloramphenicol and ciprofloxacin was used to treat most acute cases. Complications arose in 16.8% and the most frequent was anemia, and there were 2 deaths.

Conclusion. Recognize the physiopathological and microbiological characteristics of the disease, as well as improve the diagnostic and treatment algorithms for acute and chronic bartonellosis which have been developed without a strong evidence base. Preparation of ready-to-go operational research projects for future outbreaks would strengthen the evidence base for diagnostic and treatment strategies and enhance opportunities for control and prevent deaths.
1640. Pertussis Testing in the Department of Veterans Affairs, 2010–2018
Patricia Schirmer, MD, CIC; Gina Oda, MS, CIC; Cynthia Lucero-Obusan, MD, CIC; Mark Holodniy, MD; Department of Veterans Affairs, Palo Alto, California

**Session:** 163. Public Health
**Friday, October 4, 2019: 12:15 PM**

**Background.** *Bordetella pertussis* causes a highly contagious, nationally reportable respiratory illness resulting in violent coughing. Pertussis outbreaks continue despite an available vaccine. Appropriate pertussis testing depends on timing from the onset of symptoms. Culture testing within 2 weeks from symptom onset is gold standard, while PCR testing is reasonable up to 3–4 weeks and serology testing 2–12 weeks from symptom onset per CDC. We describe pertussis testing in the Department of Veterans Affairs (VA) from 2010–2018.

**Methods.** VA data sources were queried for all *B. pertussis* tests (culture, DFA, IgA, IgG, IgM, and PCR) from January 2010 to December 2018. Data were compared across years. A random selection of 10 patient charts with both positive and negative test results for each type of testing were reviewed to determine timing from onset of symptoms to testing.

**Results.** From 2010 to 2018, 37,356 pertussis tests (28,174 unique patients) were performed in VA nationally. Increased testing occurred in 2012 (most recent peak year) and PCR testing increased in 2014 with introduction of multiplex panels. Otherwise testing was stable between years (Figure 1). Positive test results included culture 1/252 (0.4%), DFA 4/204 (2%), IgA 459/1,546 (29.7%), IgM 168/1,189 (14.1%), IgG 1,156/2,291 (50.4%), and PCR 47/31,847 (0.2%) (Figure 2). Total positive tests per year ranged from 161 in 2015 to 313 in 2012. Across the years, IgG was the most common positive test. In 37/60 (62%) charts reviewed, appropriate test was chosen based on symptom duration. 9/60 (15%) had no symptom duration documented and 14/60 (23%) did not have appropriate pertussis testing chosen based on symptom duration. DFA testing chart reviews were not included as there is no CDC recommendation for DFA testing in pertussis diagnosis.

**Conclusion.** Number of pertussis-positive results remained stable despite increased testing, primarily from multiplex PCR testing. IgG, often a marker of immunity, was the most common test to be positive across the studied timeframe. In a small sampling of patients, about two-thirds received appropriate testing based on timing of symptoms. With the multitude of pertussis tests ordered, further education of clinicians on appropriate testing based on timing of symptoms is needed.