1187. Retrospective and Prospective Analysis of Acinetobacter Modern-Day Clinical Isolates in a Large Mid-West Hospital System
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Background. The epidemiology of contemporary Acinetobacter calcoaceticus-baumannii complex (AcB) strains in the United States is understudied. In addition to increasing multidrug resistance, there is concern that the rates of AcB infections acquired outside of hospitals and the anatomic distribution of these infections may differ from what is previously reported. Furthermore, the epidemiology of non-AcB clinical isolates is poorly characterized.

Methods. We retrospectively identified all cases associated with Acinetobacter clinical isolates in the Barnes-Jewish/Children’s hospital system (St. Louis, MO) from 2007 to 2017. First isolates were classified as AcB or non-AcB. Tissue of origin, hospital-day of isolation, and antibiotic resistance profiles were determined. Results were compared with an ongoing prospective analysis of Acinetobacter isolates in the same system, started in July 2017.

Results. We identified 2,959 and 1,243 cases associated with AcB and non-AcB isolates, respectively. In both groups, isolates were most commonly obtained from respiratory (34% and 30% of total isolates) and connective tissue (34% and 27% of total isolates) sites. Urinary tract specimens were more likely to occur among AcB isolates compared with non-AcB isolates (66/42, 959 [23%] vs. 147/1,243 [12%], P < 0.001). The percentage of isolates obtained prior to hospital-day-2 are 62% and 78% for AcB and non-AcB isolates, respectively. AcB isolates were markedly more resistant to all classes of antibiotics. Analysis of 77 AcB and 58 non-AcB prospectively collected isolates revealed similar clinical findings.

Conclusion. Our study confirms the protean nature of Acinetobacter clinical isolates, and begins to describe relevant differences between AcB and non-AcB strains. These distinctions support the practice of identifying clinical isolates using AcBc and non-AcBc labels. Ongoing studies will further describe the patient characteristics and clinical outcomes associated with Acinetobacter disease in our system.

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1188. Could Chlorhexidine (CHX) Bathing Decrease the Incidence of Carbapenem Resistant Enterobacteria (CRE) Bacteremia in Previously Colonized CRE Hematopoietic Stem Cell Transplant Recipients (HSCT)?
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Background. CRE colonized patients that undergo HSCT have a higher incidence of CRE bacteremia, especially during the initial neutropenic period, with a high mortality rate. This situation is critical in countries highly endemic for CRE such as Colombia. It is necessary to find measures that decrease the occurrence of this infection, permitting a safer transplant. Daily CHX bathing could be effective reducing this risk.

Methods. Since March 2014 in our hospital in Cali, Colombia, all adult patients admitted to the HSCT unit were peri-natal screened for CRE colonization, and then CHX daily bathing (CHX 4% soap or CHX 2% pads) was used regardless of the screening results. Prospectively all type of microorganism bacteremia were recorded from 2014 to 2017. We compare bacteremia, and CRE bacteremia rates between CRE colonized vs. non-colonized patients. We compared the annual proportion of CRE bacteremia vs. non-CRE bacteremia (Figure 1). The average age of patients was 55. Urinary, and respiratory sources of infection or colonization were the most common ones (35% and 30%, respectively), followed by blood stream (17%) and intraabdominal (10%) infections. Isolate recovery and DNA extraction was achieved in 40 cases. Of these, 15 (38%) had a positive PCR for blaNDM gene (Figure 2). Antibiotic susceptibility testing revealed that amikacin was the most effective antimicrobial with the rest of antimicrobials having extremely high rates of resistance (Figure 3).

Conclusion. An epidemic of CR-Kp has established in our hospital, representing the first one reported in Peru. The different mechanisms of carbapenem resistance found suggest a polyclonal expansion. Amikacin remains the only active antimicrobial within the routinely tested antibiotics, highlighting the need to add other antimicrobials to the routine panel.

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1189. A Comprehensive Characterization of the Emerging Carbapenem-Resistant Klebsiella pneumoniae Clinical Isolates From a Public Hospital in Lima, Peru
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Background. In contrast with other countries in Latin America, Peru had been notoriously spared by the global dissemination of carbapenem-resistant Klebsiella pneumoniae (CR-Kp), until recently. Even though, isolated cases of KPC-producing K. pneumoniae has been reported since 2013, it was not until 2016 that the first outbreak of NDIMP-producing K. pneumoniae was described in Peru. By 2017, rapid emergence of CR-Kp took place in Hospital Cayetano Heredia (HCH), a tertiary care hospital in Lima. Here, we provide a description of clinical, microbiological and molecular characteristics of CR-Kp isolates recovered at HCH.

Methods. Retrospective review of all CR-Kp clinical isolates recovered at HCH until December 2017. Antibiotic susceptibility data were obtained during routine care (Vitek or disc diffusion) and was assessed using CLSI breakpoints. DNA extraction was performed by heat shock, and PCR was performed to assess carriage of blaNDM gene. String test was performed to detect hypermucoviscosity.

Results. The first case of CR-Kp in HCH dated from July 2015. Since then, a total of 69 CR-Kp clinical isolates, from 60 patients have been recovered until December 2017. A significant increase in the number of cases was observed during 2017 (Figure 1). The average age of patients was 55. Urinary, and respiratory sources of infection or colonization were the most common ones (35% and 30%, respectively), followed by blood stream (17%) and intraabdominal (10%) infections. Isolate recovery and DNA extraction was achieved in 40 cases. Of these, 15 (38%) had a positive PCR for blaNDM carbapenemase gene (Figure 2). Antibiotic susceptibility testing revealed that amikacin was the most effective antimicrobial with the rest of antimicrobials having extremely high rates of resistance (Figure 3).

Conclusion. CR-Kp has established in our hospital, representing the first one reported in Peru. The different mechanisms of carbapenem resistance found suggest a polyclonal expansion. Amikacin remains the only active antimicrobial within the routinely tested antibiotics, highlighting the need to add other antimicrobials to the routine panel.

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Carbapenem resistance (CR) is a growing threat in hospitals in the United States and worldwide. We evaluated the prevalence and geographic distribution of CR among six most common Gram-negative (GN) bloodstream infection (BSI) pathogens in US hospitals.

Methods. We analyzed microbiology data in a cohort of adults (218 years) hospitalized in 181 US hospitals contributing microbiology data to the Premier Healthcare Database (October 2010—September 2015) with blood cultures positive for six most common GN pathogens (S. maltophilia, P. aeruginosa, and A. baumannii). Among individual organisms, the prevalence of CR—outside of S. maltophilia—was highest among A. baumannii, 35.1%, and lowest among E. coli, 0.2% (Figure 2). Geographically, CR prevalence ranged from highest in the Mountain region (7.1%) to lowest in the West North Central (2.3%) (Figure 3). The maximum CR prevalence occurred in A. baumannii from the East North Central (55.7%), and the minimum in E. coli from the West North Central (0.05%) regions.

Conclusion. Among six most frequently isolated pathogens in BSI, the overall CR prevalence is 3.5%. The wide variations in prevalence based on organism, location in the hospital, and geography emphasize the clinical importance of knowing local pathogen and resistance patterns in order to optimize empiric treatment.