247. Antimicrobial Resistance patterns of Enterobacteriaceae and Pseudomonas aeruginosa from Colombian clinical isolates. 2017–2018
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Session: 260. HAI: Surveillance, International Saturday, October 5, 2019: 12:15 PM

Background. The prevalence of CRAB and CRPA were 62.5% of non-carbapenem therapeutic alternative for Gram-negative infections. Profile against Eco, Kpn and Pae of cIAI, cUTI and RTI cases in Colombia. The C/T critical to guide the empiric treatments decision in a multidrug resistance era. This study shows the need for ongoing validation and continuous training of surveillance personnel to maintain the accuracy of surveillance data. We also confirmed that IV can be used as an alternative monitoring method to examine validity and accuracy.

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247. Trends and Regional Differences in Extended Spectrum β-lactamase (ESBL)-producing Enterobacteriaceae, 2012–2017
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Background. Extended spectrum β-lactamase-producing Enterobacteriaceae (ESBL-PE) have been outbreaks in healthcare settings, especially in Gram-negative bacilli, effective infection-control measures should be promoted to tackle this critical threat. We measured the incidence of positive clinical cultures from inpatient encounters in a cohort of hospitals submitting data to the Premier Healthcare Database and Cerner Health Facts from 2012 through 2017. We included Escherichia coli and Klebsiella spp. cultures and defined ESBL as non-susceptibility to cefotaxime, ceftriaxone, cefadiazime, or cefepime. Cultures collected on days 1, 2, or 3 of hospitalization were considered community-onset (CO); cultures from day 4 or later were considered hospital onset (HO). We developed weights using a raking procedure to match the known population distribution of ESBL-producing Enterobacteriaceae strains. Of the 144373 clinical isolates, Gram-positive cocci and Gram-negative bacilli were the most common and had the highest susceptibility values. Of the 1204 strains of non-meningitis S. pneumoniae, 84.1% of the 1204 strains of non-meningitis S. pneumoniae isolated from children were penicillin-susceptible (PSSP), 15.9% were penicillin-nonsusceptible, including penicillin-intermediate (PISP, 10.5%) and penicillin-resistant (PISP, 5.4%) strains. The C/T breakpoints for the 361 strains isolated from adults, 94.5%, 3.0% and 2.5% were PISP, PISP, and PISP, respectively. Vancomycin-resistance E. faecium was 0.7% and no vancomycin-resistant E. faecalis were identified. According PCR results, most of the resistant strains were vanA genotype. The prevalence linezolid-nonsusceptible E. faecalis was 1.6%, few E. faecalis were resistant to linezolid. The prevalence of ESBL-producing strains was 54.0% in E. coli, 35.0% in Klebsiella pneumoniae and 47.1% in Proteus mirabilis. Enterobacteriaceae isolates were still mainly susceptible to carbapenems. Overall, 11.7% and 11.2% of the Enterobacteriaceae isolates were resistant to imipenem and meropenem, respectively. The predominant pattern of CRE isolates was K. pneumoniae. The prevalence of CRAB and CRPA were 62.5% and 28.7%, respectively.

Conclusion. Antimicrobial resistance remains to be a problematic issue in healthcare settings, especially in Gram-negative bacilli, effective infection-control measures should be promoted to tackle this critical threat. We measured the incidence of positive clinical cultures from inpatient encounters in a cohort of hospitals submitting data to the Premier Healthcare Database and Cerner Health Facts from 2012 through 2017. We included Escherichia coli and Klebsiella spp. cultures and defined ESBL as non-susceptibility to cefotaxime, ceftriaxone, cefadiazime, or cefepime. Cultures collected on days 1, 2, or 3 of hospitalization were considered community-onset (CO); cultures from day 4 or later were considered hospital onset (HO). We developed weights using a raking procedure to match the American Hospital Association distribution for acute care hospitals based on US census division, bed size category, teaching status, and urban/rural designation. We used weighted multivariable logistic regression adjusting for hospital characteristics to examine trends and regional differences in ESBL rates. We used weighted multivariable logistic regression adjusting for hospital characteristics to examine trends and regional differences in ESBL rates. In 2017, the estimated rate of ESBLs was 40.3 per 10,000 discharges for CO and 6.4 per 10,000 discharges for HO; 86% of all ESBLs were CO. The percent that were ESBLs among all incidences of infections increased for CO (8.2% in 2012 to 11.6% in 2017) and HO (13.1 to 16.8%) cultures. From 2012 to 2017, adjusted ESBL rates increased for CO (7.9% annually, P < 0.0001), while HO rates did not change significantly over time (P = 0.39, Figure 1). We found significant regional differences in the rate of ESBL (P < 0.0001) across US census divisions in 2017 (Figure 2). Estimated rates for 2017 varied 5-fold from 15.3 ESBLs per 10,000 discharges in the Northwest Census Division to 82.4 ESBLs in the Mid-Atlantic.

Conclusion. We estimated that 40% increase in the rate of CO-ESBLs among hospital cases from 2012 to 2017, but no increase in hospital-onset ESBL rates. ESBL rates varied greatly by region of the country and are estimated as much as 5× higher in some areas. A better understanding of factors contributing to community transmission and regional variation is necessary in order to inform ESBL prevention efforts.
2480. Communication During Patient Transfers: Describing Gaps in the Infectious Status Information Pipeline
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Session: 261. HAI: Surveillance, Regional Saturday, October 5, 2019: 12:15 PM

Background. Fragmented communication of patients’ infectious status across healthcare networks impact regional spread of multidrug-resistant organisms (MDRO). This study aimed to quantify gaps in communication of patient MDRO status across Utah healthcare facilities and to identify opportunities to improve.

Methods. This is a cross-sectional retrospective mixed-methods study of patient transfers from three purposively selected healthcare facilities: an acute care (ACF), long-term acute care (LTAC), and skilled-nursing facility (SNF). Patients with known SDRO transferred out of these facilities over the previous week were identified in bimonthly samples spanning 2 months. I infection preventionists and admission nurses from facilities receiving these patients were interviewed.

Results. Of 293 patients transferred to another facility, 13% (n = 38) had an active infection or colonization with an SDRO. These 38 patients were transferred to 26 healthcare facilities within the state (4 ACF, 3 LTAC, 19 SNF). Gram-negative organisms with resistance to a carbapenem accounted for 15.8% of those transferred with an MDRO. There was no documentation of the state infection control transfer form (ICTF) at the sending facility for 68.5% of MDRO patient transfers. Of 22 admitting nurses interviewed, 19 (86.4%) did not receive an ICTF, 6 (27.3%) received no additional information on the patient transferred with an MDRO. During interviews, nurses expressed concern with the ICTF for transmitting disease status information.

Conclusion. Given the widespread gaps in communication of infectious status of patients with MDROs transferred across the healthcare facilities sampled, efforts to standardize and improve MDRO communication in the region is warranted.

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2481. Comparing inter-hospital patient movement patterns to better understand mechanisms for regional dissemination of carbapenem-resistant Enterobacteriaceae
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Background. Understanding inter-hospital movement of patients provides insight into regional transmission of multidrug-resistant organisms (MDROs) that can guide containment efforts. Movement of general patient populations is often used for this purpose, but movement of the specific patient population of interest may be more useful. We sought to compare movement of CRE patients with that of other patient populations to explore whether CRE carriers move differently, and if so, to determine whether administrative data can be used to identify patient populations with transfer patterns that mimic CRE patients.

Methods. We used New York’s Statewide Planning and Research Cooperative System (SPARCS), to create a patient network of all acute care hospital encounters (“overall hospital population”) during 2013–2015. We identified the subset of CRE cases in the network by linking the SPARCS data to CRE cases reported to the National Healthcare Safety Network in 2014, matching on admission date, date of birth, gender, and facility. We described patient characteristics and movement patterns across 3 cohorts: (1) CRE cases, (2) overall hospital population, (3) CRE surrogate (patients clinically similar to CRE cases based on length of stay [LOS] ≥14 days and Clinical Classification Software [CCS] category of sepsis plus at least one of the following additional CCS categories: adult respiratory failure, acute renal failure, procedure complications, or device complications). Correlations between cohorts were calculated using patient transfer matrices to determine similarities between the networks.

Results. The average LOS for CRE cases was 25% higher than the overall hospital population (31.4 vs. 1.3 days, Figure 1a), and CRE cases were more likely to die or be discharged to a skilled nursing facility (Figure 1b). CRE movement networks were only moderately correlated with the overall hospital population (R² = 0.51); there was higher correlation between CRE case and CRE surrogate networks (R² = 0.73).

Conclusion. CRE patients have different healthcare experiences in the hospital and between hospitals in New York compared with the overall hospital population. The CRE surrogate cohort transfer patterns were more similar, and could be used to understand CRE patient movement in the absence of CRE culture data.

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2482. Clinical Outcomes of Once-Daily Darunavir in Treatment-Experienced Patients with Darunavir Resistance Associated Mutations Through 48 Weeks of Treatment
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Background. Darunavir (DRV) is a well-tolerated, potent protease inhibitor used once-daily in patients with no DRV resistance-associated mutations (RAMs) and twice-daily in those with DRV RAMs. Treatment guidelines encourage use of once-daily regimens to optimize patient adherence, convenience and tolerability. Several studies suggest that once-daily DRV retains efficacy in the setting of I–2 DRV RAMs whereas 3 or more DRV RAMs (with multiple background PI RAMs) is needed for DRV resistance. Currently, there is little clinical data to support the long-term use of once-daily DRV in patients with DRV RAMs.

Methods. This is a retrospective study evaluating the 48-week clinical outcomes of 22 treatment-experienced patients with DRV RAMs switched to once-daily DRV between 2014 and 2017 at the Orlando Immunology Center. The primary endpoint was the proportion with virologic suppression (HIV-1 RNA <50 copies/mL) at Week 48. Adherence, adverse events (AEs) and laboratory parameters were analyzed throughout the study.

Results. The median age (range) of the sample was 53 (21–77) years. median baseline CD4+ count was 699 cells/mm3, 18 (82%) had baseline HIV-1 RNA <50 copies/mL, 15 (69%) had previously used 1 or more PIs and median number (range) of