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790. Treatment of Carbapenem-Resistant Enterobacteriaceae Infections with Ceftazidime-Avibactam
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Background. CRE is an urgent threat to public health with a high mortality estimated at >30–50%. Until recently, polymyxin-bactericidal antibiotics were the only available options. However, a new therapeutic option has become available: ceftazidime-avibactam. We sought to describe outcomes from these infections treated with ceftazidime-avibactam.

Methods. From 9/2015 to 12/2016, we reviewed charts of 11 patients infected with CRE who received ceftazidime-avibactam at USC (Los Angeles, CA). Sixteen isolates analyzed. All isolates were resistant to meropenem (MIC ≥ 16). Carbapenemase production confirmed by detection of blaCTX-M. Clinical success defined as clinical improvement, lack of recurrence, and survival in 90 days. Recurrence defined as clinical signs of infection and recovery of CRE after ≥ 7 days of treatment.

Results. The median age was 49 (35-89); 73% (7/11) female; and 27% (3/11) solid organ transplant recipients. CRE isolates were predominantly P. aeruginosa (9/11) followed by K. pneumoniae (2/11). Clinical success was noted in 9/11 patients. The patients were treated for a median duration of 15 (3-43) days. All received other antibiotics prior to ceftazidime-avibactam. Eighty-seven percent (9/11) treated with monotherapy and 13% (2/11) in combination with colistin or tigecycline during treatment. No incidence of renal toxicity observed using RIFLE criteria. Clinical cure was defined as having any one of the following criteria: 17.82% (2/11) with survival rate 82% (9/11); 90 day survival rate 73% (8/11); and in hospital mortality 27% (3/11). Patients receiving CRRT or hemodialysis had 75% (3/4) mortality (P = 0.02). Recurrence occurred in 18% (2/11). Decreased sensitivity to ceftazidime-avibactam noted in one patient. 27% (3/11) had CRE isolated after ≥ 7 days treatment.

Conclusion. In CRE-infected patient treated with ceftazidime-avibactam, the overall mortality rate was 27% with the highest mortality among those receiving renal replacement therapy which was comparable to a prior study. Additional research is needed to optimize the use of ceftazidime-avibactam to treat CRE infections.

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791. Health Outcomes from Multi-Drug-resistant Salmonella Infections in High-Income Countries: A Systematic Review and Meta-Analysis
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Background. Salmonella is a leading cause of foodborne enterocolitis worldwide. Nontyphoidal Salmonella (NTS) infections that are Multi-Drug-resistant (MDR) (non-susceptible to ≥1 agent in ≥3 antimicrobial categories) may result in more severe disease outcomes, although these effects have not been systematically examined. We conducted a systematic review and meta-analysis to examine impacts of MDR NTS on disease outcomes in high-income settings.

Methods. We systematically reviewed the literature from scientific databases, including PubMed, Scopus and grey literature sources, using Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. We included case–control studies, cohorts, outbreaks, and theses, imposing no language restriction. We included only publications from 1 January 1990 through 15 September 2016 from high-income countries as classified by the World Bank, and extracted data on duration of illness, hospitalization, morbidity and mortality of MDR and susceptible NTS infections.

Results. After we removed duplicates, the initial search revealed 4 258 articles. After further screening, we identified 16 eligible studies for the systematic review, but due to inconsistency in the compared groups, only 9 of these were included in the meta-analysis. NTS serotypes differed among the reported studies but serotypes Typhimurium, Enteritidis, Newport, and Heidelberg were the most often reported MDR pathogens. Salmonella infections that were MDR were associated with excess bloodstream infections (OR 1.73; 95% CI 1.32–2.27), excess hospitalizations (OR 2.51; 95% CI 1.38–4.58), and higher mortality (OR 3.54; 95% CI 1.10–11.40).

Conclusion. The results of this meta-analysis suggest that MDR NTS infections have more serious health outcomes compared with susceptible isolates. With the emergence of MDR Salmonella strains in high-income countries, it is crucial to restrict the use of antimicrobials in animals and humans, and intervene to prevent foodborne infections.

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792. Comparison of Rates of Acute Kidney Injury with Vancomycin/Piperacillin-Tazobactam versus Vancomycin/Meropenem Combination Therapy
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Background. Vancomycin is historically correlated with renal toxicity, especially in patients requiring other nephrotoxic therapy. Recent reports have identified nephrotoxicity associated with vancomycin in conjunction with β-lactam antibiotic therapy, reporting increased rates of acute kidney injury (AKI) with vancomycin/piperacillin-tazobactam (VPT) therapy as compared with vancomycin monotherapy. Similarly, increased rates of AKI have been reported with VPT as compared with vancomycin/ceftazidime. Little data exists comparing VPT to the combination of vancomycin/meropenem (VM). The purpose of this study was to compare the incidence of nephrotoxicity between these two antibiotic combinations.

Methods. A single-center cohort study was performed at a large tertiary care community hospital utilizing retrospective review of electronic medical records. Adult in-patients treated from June to October of 2015 were included. Evaluative patients received at least 48 hours of either VPT or VM combination therapy and were followed for ≥ 7 days duration of combination therapy. Data collection included patient demographics, AKI risk factors, days of antibiotic therapy, and creatinine urine. The primary endpoint was incidence of AKI as defined by the Kidney Disease Improving Global Outcomes (KDIGO) criteria. Secondary endpoints included time to AKI and incidence of new dialysis therapy.

Results. Of 564 patients screened, a total of 202 patients met inclusion criteria, with 101 patients in each combination therapy group. Baseline serum creatinine and estimated creatinine clearance were not different between groups. The incidence of AKI was higher in the VPT group as compared with the VM group (17.82% vs. 4.95%, respectively; P = 0.004). Time to AKI onset was longer in the VPT group compared with the VM group (3.2 days vs. 1.4 days, P = 0.045). Patients in the VM group had a higher incidence of ICU admissions (56.4% vs. 46%, P = 0.024) and mean arterial pressure (MAP) less than 65mmHg (60.4% vs. 46.6%, P = 0.029). No patients in either group received new dialysis therapy.

Conclusion. Despite a greater incidence of AKI risk factors in the VM group, VPT therapy was associated with an increased risk of AKI as compared with VM therapy. Prospective studies are needed to further evaluate this finding.

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793. Risk Factors and Outcomes of Vancomycin-Resistant vs. Vancomycin-Sensitive Enterococcal Blood Stream Infections in Patients with Acute Myeloid Leukemia
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Background. Enterococcal species are commensals of the gastrointestinal tract known to cause bloodstream infections (BSIs). Studies have shown increased mortality from enterococcal BSI in neutropenic patients, indicating Vancomycin-resistant Enterococcal (VRE) infections causing increased mortality. Whether these differences in mortality apply to AML patients is unknown. The objectives of this study are to compare the risk factors and outcomes between VRE & VSE BSIs in AML patients.

Methods. We conducted a single center, retrospective cohort study of patients with enterococcal BSIs at H. Lee Moffitt Cancer Center from July 2011 to October 2015. Records were searched to identify AML patients with enterococcal BSI. Enterococcal species, neutropenia duration, Vancomycin exposure, VRE colonization, 7 and 30 day mortality, age, sex, length of stay, stem cell transplant & central line status were compared. We conducted statistical tests and Kaplan-Meier plots to analyze mortality trends. The alpha level was set at P < 0.05. AML patients were a total of 64 enterococcal BSI. From two (54.5%) were caused by VRE. E. faecalis and E. faecium accounted for 28.5% and 62.3% of BSI respectively. The E. faecalis isolates were more likely to be VSE (83% vs. 8.3%, P < 0.001) and E. fecium isolates to be VRE (71% vs. 29%, P < 0.001). Duration of neutropenia was significantly longer (27.3 vs. 14.4 days, P < 0.005) among AML patients with VRE BSI. Recent Vancomycin use and VRE colonization were significantly associated