Background. The aim of this study is to describe the clinical manifestations, molecular mechanisms, and treatment outcomes of patients with echinocandin-resistant Candida tropicalis bloodstream infections (BSI).

Methods. A PubMed search was conducted using the search terms related to C. tropicalis BSI and echinocandin resistance. Two previously unreported cases from our institution diagnosed with C. tropicalis BSI that developed resistance to echinocandins were also included. Demographics, comorbidities, treatment, clinical outcomes, and molecular mechanisms were analyzed.

Results. Seven patients with echinocandin-resistant C. tropicalis BSI were identified, including 5 previously reported cases and two from our institution. Median age was 58.7 ± 20.4 years; 3 (43%) patients were males. Three (43%) had acute myelogenous leukemia, 3 (43%) had acute lymphoblastic leukemia, and 1 (14%) had urethral cancer. All patients were immunocompromised having received chemotherapy in the last 6 months and 3 (43%) were hematopoietic stem cell transplant recipients. Five (71%) had breakthrough of echinocandin resistance while receiving an echinocandin; one (14%) received caspofungin in the past 3 months and only one (14%) had no reported echinocandin exposure in the past 3 months.

Discussion. Sequencing of the FKS1 gene for mutations known to confer echinocandin resistance was performed in 4 cases, including our two index cases. Homozygous T-C mutations in two alleles of FKS1 gene was detected in 2 cases, and a heterozygous mutation was detected in the other 2 cases, which resulted in a reduced serine-to-proline amino acid change at position 654 (S654P).

Six patients (86%) survived after being treated with an antifungal agent other than an echinocandin. Treatment was changed to liposomal amphotericin B in two cases, and one each to voriconazole, fluconazole, voriconazole plus liposomal amphotericin B, and caspofungin plus voriconazole. The one patient who died received intravenous voriconazole.

Conclusion. Echinocandin resistance emerged in neutropenic patients with C. tropicalis fungemia through a characteristic mutational hot-spot amino acid change in the FKS1 gene. Although alternative antifungal agents may be successfully used as salvage therapy, the outcome may still be fatal.

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876. Cefozolane-tazobactam for the Treatment of Multi Drug-resistant Pseudomonas aeruginosa (MDRPA) Infections Esther Molinar, MD; Emily Heil, PharmD, BCPS-AQ ID; Kimberly Claeyes, PharmD, BCPS; Jon Hiles, PharmD and Jason Gallagher, PharmD, FCCP, FIDSA, FIDSA; Division of Infectious Disease, Temple University Hospital, Philadelphia, Pennsylvania, Pharmacy Practice and Science, University of Maryland School of Pharmacy, Baltimore, MD, University of Maryland School of Pharmacy, Baltimore, Maryland, Indiana University Health – Methodist and University Hospitals, Indianapolis, Indiana, Pharmacy Practice, Temple University, Philadelphia, Pennsylvania

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Background. Cefozolane-tazobactam (TOL-TAZ) is a novel cephalosporin-beta-lactamase inhibitor combination with potent activity against Pseudomonas aeruginosa, including MDRA, TOL-TAZ use for MDRA infections has not been well-studied.

Methods. We conducted a retrospective study to describe outcomes of patients treated with TOL-TAZ for MDR Pseudomonas aeruginosa infections at 3 academic medical centers. Patients were aged ≥ 18 years who had MDRA isolated in culture and received TOL-TAZ for at least 24 hours. The primary outcomes were 30-day and in-hospital mortality. Secondary outcomes were microbiological cure and clinical success.

Results. The microbiological cure was defined as negative culture at end of therapy; cure was presumed when clinical success occurred without follow-up cultures. Clinical success was defined as resolution of all signs and symptoms of infection. TOL-TAZ susceptibility results were collected when available.

Characteristics

|                        | Results (N = 34) |
|------------------------|-----------------|
| Male gender, n(%)      | 21 (61.8)       |
| Age (median, IQR)      | 57 (42-66)      |
| Charlson Comorbidity Index (median, IQR) | 4 (2.25-5) |
| APACHE II score (median, IQR) | 20 (13-26.8) |
| ICU, n(%)              | 23 (67.7)       |
| Solid organ transplant recipient, n(%) | 15 (44.1) |
| Primary infection, n(%) | 4 (11.8)        |
| Pneumonia              | 22 (64.7)       |
| Bacteremia             | 6 (17.6)        |
| Urinary tract          | 4 (11.8)        |
| Wound                  | 4 (11.8)        |
| Intrabdominal          | 2 (5.8)         |
| Hospital day index infection diagnosed (median, IQR) | 8 (1-35) |
| Hospital day TOL-TAZ started (median, IQR) | 18.3 (2-52) |
| Patients receiving concomitant therapy for index | 20 (58.8) |
| pathogen, n(%)         | 8 (23.5)        |
| Isolates susceptible to TOL-TAZ, n(%) | 16 (47) |
| 30-day mortality, n(%)  | 7 (20.6)        |
| 1-month mortality, n(%) | 8 (23.5)        |
| Microbiologic cure, n(%) | 21 (61.8) |
| Clinical success, n(%)  | 24 (70.8) |

Conclusion. In this severely ill population with MDRA infections, 79.4% and 76.5% of patients were alive at 30 days and at the end of their stay, respectively. Some patients had positive cultures despite clinical resolution. TOL-TAZ is a potential option for patients with MDRA infections.
790. Treatment of Carbapenem-Resistant Enterobacteriaceae Infections with Ceftazidime-Avibactam

Elham Rahmati, MD; Emily Blodget, MD1; Rosemary C. She, MD2; Jennifer Cueto Abbott, PharmD; Robert A. Bonomo, MD3 and Brad Spellberg, MD1

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 blaKPC. 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 (71%) female; and 27 (3/11) solid organ transplant patients. CRE in all cases were carbapenemase producers. All CRE isolates were susceptible to avibactam. Mean duration of therapy 8.6 (4-16) days. 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 conjunction with colistin. The overall mortality rate was 27% with the highest mortality among those receiving renal replacement therapy which was comparable to a previous study. Additional research is needed to optimize the use of ceftazidime-avibactam to treat CRE infections.

791. Health Outcomes from Multi-Drug-resistant Salmonella Infections in High-Income Countries: A Systematic Review and Meta-Analysis

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Methods. We sought to describe outcomes from these infections treated with ceftazidime-avibactam. We included Scientific Advisor: Theravance: Scientific Advisor, Consulting fee. Paratek: Scientific Advisor, Consulting fee. The Medicines Company: Scientific Advisor, Consulting fee.

792. Comparison of Rates of Acute Kidney Injury with Vancomycin/Piperacillin-Tazobactam vs. Vancomycin/Meropenem Combination Therapy

Sonia Pernia, PharmD1; Jamie Hopkins, PharmD2 and David Kuhl, PharmD2

Methods. One 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 up to 10 days of combination therapy. Data collection included patient demographics, AKI risk factors, days of antibiotic therapy, and serum creatinine. 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 AKI requiring 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 in the VPT group as compared with the VM group (17.8% 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. 40.6%, P = 0.024) and mean arterial pressure (MAP) less than 65mmHg (60.4% vs. 46.6%, P = 0.029). No patients in either group who 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.

Disclosures. All authors: No reported disclosures.

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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Methods. We conducted a single center, retrospective cohort study of patients with enterococcal BSI at H. Lee Moffitt Cancer Center from July 2011 to October 2015. Records were searched to identify AML patients with enterococcal BSI. Enterococcus 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 plot to analyze mortality trends. Of 564 patients screened, a total of 202 patients met inclusion criteria, with 101 patients in each combination therapy group.

Results. Of 564 patients screened, a total of 202 patients met inclusion criteria, with 101 patients in each combination therapy group.

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.

Disclosures. All authors: No reported disclosures.