Disclosures. All authors: No reported disclosures.

2261. Oral Fosfomycin for Treatment of Urinary Tract Infections Due to Extended-Spectrum β-Lactamase and Carbapenem-Resistant Enterobacteriaceae

Jade L. Hefler, PharmD1; Katherine K. Perez, PharmD2; William L. Musick, PharmD1; Houston Methodist Hospital, Houston, Texas; Houston Methodist, Houston, Texas

Session: 246. Clinical Outcomes of Infections with Resistant Organisms

Saturday, October 5, 2019: 12:15 PM

Background. Urinary tract infections (UTIs) caused by extended spectrum β-lactamase (ESBL) and carbapenem-resistant Enterobacteriaceae (CRE) pose a significant challenge due to limited treatment options. The objective of this study was to compare outcomes in patients treated with standard IV therapy or oral fosfomycin for ESBL and CRE UTIs.

Methods. Retrospective cohort review of inpatients diagnosed with ESBL and CRE UTIs between June 2016 and September 2017 at a seven-hospital system. Patients with polymicrobial UTI, bloodstream infections, additional anatomic site with ESBL/CRE, or those requiring renal replacement therapy were excluded. Only patients with documented fosfomycin susceptible isolates in vitro were included. Eligible patients were divided into two groups: standard IV therapy (SDTx) or fosfomycin therapy (FOS). FOS group could receive ≤72 hours of other active antibiotics from urine culture collection (UTI onset) to the first dose of fosfomycin. Quick sequential organ failure assessment (qSOFA) scores were calculated at UTI onset. The primary endpoint was functional cure defined as resolution of symptoms without microbiological failure. Microbiological failure was defined as a positive urine culture within the index hospitalization or 30 days.

Results. There were 70 patients included: 31 treated with SDTx and 39 with FOS. ESBL E. coli was most common, accounting for 58% of UTIs in SDTx and 71.8% in FOS. ESBLs accounted for 71% (n = 22/31) of UTIs in SDTx and 89.7% (n = 35/39) in FOS. The overall qSOFA score was 0.7 (range, 0–3) with the majority of patients scoring < 2 (80.6% in SDTx vs. 92.3% in FOS; P = 0.29). There was no significant difference in functional cure rate (n = 30, 96.8% SDTx vs. n = 37, 94.9% FOS; P = 0.83). SDTx patients had a longer length of stay (15.3 days vs. 7.3 days with FOS; P = 0.04), duration of active therapy (7.6 days vs. 3 days with FOS; P < 0.0001), and time from UTI onset to discharge (10.3 days vs. 6.6 days with FOS; P = 0.002). There were no adverse drug events reported.

Conclusion. Oral fosfomycin was a safe and effective alternative to standard IV therapy for ESBL and CRE UTIs in this investigation and demonstrated similar functional cure rates. Additionally, patients treated with fosfomycin had shorter hospitalizations and durations of antibiotic therapy.

Disclosures. All authors: No reported disclosures.

2262. Ceftazidime–Avibactam vs. Polymyxin B in the Treatment of Infections Due to Carbapenem-Resistant Enterobacteriaceae

Jamie John, PharmD1; Brian Nelson, PharmD2; Nenad Macesic, FRACP, MBBS, MA3; New York-Presbyterian Hospital, Smithtown, New York; Columbia University Irving Medical Center, New York, New York

Session: 246. Clinical Outcomes of Infections with Resistant Organisms

Saturday, October 5, 2019: 12:15 PM

Background. Pharmacotherapy for carbapenem-resistant Enterobacteriaceae (CRE) infections is limited. There is a paucity of evidence to guide optimal management of CRE infections. Ceftazidime–avibactam, a novel cephalosporin/β-lactamase inhibitor, may be a reasonable alternative to colistin for CRE infections, but data on polymyxin B (PB) are lacking. Given the improved pharmacokinetic profile of PB compared with colistin, we sought to evaluate clinical and microbiological outcomes of patients treated with CAZ-AVI vs. PB for CRE infections.

Methods. We conducted retrospective cohort study in adult patients treated with CAZ-AVI or PB for a CRE infection between June 2010 and August 2018. The primary outcome was all-cause mortality at 30 days. Secondary outcomes included clinical cure, microbiological cure, and development of resistance. Endpoints were analyzed using standard statistical measures. The influence of clinical variables other than anti-microbial therapy was assessed in a multivariable regression analysis.

Results. The study included 117 patients, with 42 patients receiving CAZ-AVI and 75 receiving PB. Respiratory and urinary tract infections were most common, occurring in 37.6% and 20.5% of patients, respectively. Bloodstream infections occurred in 45 (35.9%) patients. In the CAZ-AVI group, there were 9 deaths (21.4%), compared with 19 deaths (25.3%) in the PB group (P = 0.653). No statistically significant differences were found in clinical cure or microbiologic cure between CAZ-AVI and PB. PB was associated with a higher incidence of nephrotoxicity (19% vs. 43%; P = 0.048). After adjustment for duration of therapy, combination therapy, and initial WBC, use of PB was not an independent predictor of mortality.

Conclusion. No statistically significant differences between CAZ-AVI and PB were found in clinical or microbiologic outcomes in this cohort of patients treated for CRE infection. Further studies are necessary to confirm these preliminary findings to optimize clinical practice.

Disclosures. All authors: No reported disclosures.

2263. Fosfomycin Trometol Use for Complicated UTIs Including Pyelonephritis, a 1-year Review of Outcomes and Prescribing Habits

Timothy J. Hatlen, MD1; Richard Flor, PharmD2; Megan Nguyen, PharmD3; Loren G. Miller, MD, MPH1; Harbor-UCLA Medical Center, Torrance, California; Western University of Health Sciences College of Pharmacy, Pomona, California; Western University of Health Sciences, College of Pharmacy, Pomona, California

Session: 246. Clinical Outcomes of Infections with Resistant Organisms

Saturday, October 5, 2019: 12:15 PM

Background. Treatment of complicated urinary tract infections (UTI) caused by multidrug-resistant organisms (MDROs) is increasingly problematic given limited oral antibiotic options. In these situations, fosfomycin is increasingly used. However, there are limited outcome and pharmacokinetic data to support fosfomycin use for complicated UTIs (cUTI), especially in the upper tract. We describe fosfomycin use for complicated cUTI in our healthcare system.

Methods. We performed a retrospective review of all fosfomycin prescriptions between 1/1-December 31/17 in the Los Angeles Department of Health Service system, which consists of 4 medical centers and 19 clinics that provide care to >600,000 patients annually. In our system, fosfomycin use requires ID approval. We collected demographics, clinical characteristics, adverse effects, and 30-day success
rates. Subsequent urine cultures up to December 31/18 were examined for fosfomycin susceptibility.

Results. A total of 156 patients received fosfomycin; 21 (13%) had lower UTI, 39 (25%) had lower tract cUTI, 24 (15%) had upper tract not pyelonephritis, and 37 (24%) had pyelonephritis. The majority (n = 98, 63%) were female, 82 (53%) had urological or functional abnormalities, 67 (43%) had diabetes, 26 (17%) were immunocompromised and most (n = 135, 87%) presented from the community. E.coli was the predominant pathogen (n = 123, 79%), 112 (91%) of these produced ESBL. For cUTI (n = 100), dosing interval was q24h (3%), q48h (51%) and q72h (46%). Among patients with 30-day outcomes (n = 100, 64%), success was seen in 84 (84%) and was 79% (14/64) among those with cUTI. Failure was associated with male gender (p = 0.005), urogenital abnormalities (p = 0.004) and non-E. coli UTIs (p = 0.03). Only 1 adverse effect at 30 days was described. Fosfomycin-resistant E. coli were found in 96/14 (6%) of patients with follow-up urine cultures >30 days after initial treatment (mean 5.7 ± 4.33 mn).

Conclusion. Despite the lack of data supporting its use, we found that most patients receiving fosfomycin for complicated upper UTIs had clinical success. However, emergence of subsequent resistance warrants caution. Further studies should be done to better understand optimal use of fosfomycin for complicated UTIs.

Disclosures. All authors: No reported disclosures.

2246. An Evaluation of Empiric Treatment Patterns for Adult Patients with Community-Onset (CO) "Low-Risk" (LR) Complicated Intra-Abdominal Infections (cIAI) Across US Hospitals

Thomas Lodise, PharmD, PhD1; Sergey Izmailyan, BS2; Melanie Oleisky, PhD2; Kenneth Lawrence, PharmD2; Larry Tsai, MD3; Albany College of Pharmacy and Health Sciences, Albany, New York; 4Tetraphase Pharmaceuticals, Watertown, Massachusetts

Session: 246. Clinical Outcomes of Infections with Resistant Organisms
Saturday, October 5, 2019: 12:15 PM

Background. Current cIAI guidelines recommend that broad-spectrum antibiotics (abs) like anti-pseudomonal β-lactams should be reserved for “high-risk” CO cIAI patients. Fluoroquinolone (FQ) use is also discouraged in geographic areas with a high prevalence of resistance. The current study evaluated empiric treatment patterns for patients with CO cIAI patients. Fluoroquinolone (FQ) use is also discouraged in geographic areas with a high prevalence of resistance. The current study evaluated empiric treatment patterns for patients with CO cIAI and assess compliance with cIAI guideline recommendations.

Methods. A retrospective multi-center study using data from the Premier Research Database (October 2015 - December 2017) was performed. Inclusion criteria: age ≥ 18 years; hospitalized; primary cIAI diagnosis and a cIAI surgical procedure or outpatients with ≥ 30-day follow-up; only the first cIAI was considered. Abs was classified as high-risk (HR) if they were receiving a non-MERO-based therapy. Overall 30-day all-cause mortality was 20/85 (23.5%); mortality in blood culture positive patients was 11/37 (30%). Cystic fibrosis patients were included. All combinations thereof were analyzed. No cystic fibrosis patients were included. All combinations thereof were evaluated. The primary outcomes were 30-day mortality and 30-day infection-related mortality. Secondary outcomes included sterilization of cultures, isolation of a non-susceptible isolate within 3 days of therapy, hospital and intensive care unit (ICU) length of stay, and adverse drug effects (ADE) of therapy including: hyperkalemia, acute kidney injury (AKI), transaminisits, and QTc prolongation.

Results. There were 90 unique patients who were included in 212 (92%) with 30+ positive blood cultures; 54 patients with 87 positive pulmonary cultures). Overall mortality trends improved with combination therapy in blood culture positive patients and with monotherapy patients in pulmonary cultures. These findings are influenced by the limited number of patients available, and the medical complexity of these patients. In lung patients there were significantly fewer ADE associated with monotherapy as opposed to combination therapy.

Disclosures. All authors: No reported disclosures.

2266. Management of Ertapenem-Resistant, Meropenem-Susceptible Enterobacteriaceae

Pavithra Srinivas, PharmD, BCPS, BCIDP, AAIHVIP1; Janet Wu, PharmD, BCIDP2; Elizabeth A. Neuner, PharmD, BCPS, BCIDP3; Andrea Pallotta, PharmD4; Sanda S. Richter, MD5; Constantin Tigges, MD2; 6Cleveland Clinic Foundation, Cleveland, Ohio; 2Cleveland Clinic, Cleveland, Ohio

Session: 246. Clinical Outcomes of Infections with Resistant Organisms
Saturday, October 5, 2019: 12:15 PM

Background. Carbapenemases are the most frequent mechanism of carbapenem resistance in Enterobacteriaceae. However, alternative mechanisms such as loss of function of the MBLs or over-expression of off-pathway carbapenemases can cause multi-drug resistant Enterobacteriaceae. Clinical failure occurred in 21/43 (49%) patients – 8/43 (19%) were receiving MERO-based therapy, 13/43 (30%) were receiving MERO and tigecycline were used in 4 (9%) patients each. Combination therapy was used in 8 (40%) with MERO, 14/43 (33%) with fluoroquinolones. Ceftazidime/avibactam and meropenem were the most frequently used antibiotics for treatment of CDE infections.

Disclosures. All authors: No reported disclosures.

2265. Clinical Outcomes with Single vs. Combination Antibiotic Therapy in the Treatment of Burkholderia cepacia complex Bacteria and Pneumonia

G. Taylor A. George, MD1; Kurt Stevenson, MD, MPH2; Joan-Miquel Balada-Llasat, PharmD/PhD3; Kelic E. Coo, MPH4; 1The Ohio State University, Columbus, Ohio; 2The Ohio State University College of Medicine and College of Public Health, Columbus, Ohio; 3The Ohio State University Wexner Medical Center, Columbus, Ohio; 4The Ohio State University Wexner Medical Center, Columbus, Ohio

Session: 246. Clinical Outcomes of Infections with Resistant Organisms
Saturday, October 5, 2019: 12:15 PM

Background. Burkholderia cepacia complex (Burkholderia cenocepacia and Burkholderia multivorans) (BCC) are uncommon, yet serious often drug-resistant organisms. These patients, especially in lung transplants, pre-operative infection/colonization is seen as a contraindication to transplant. Optimal treatment for these difficult infections is not known. We examined impact of single vs. combination therapy on patient outcomes.

Methods. All cases of BCC positive pulmonary or blood cultures at The Ohio State University Wexner Medical Center between January 1, 2016 and June 30, 2018 were analyzed. No cystic fibrosis patients were included. All combinations thereof were evaluated. The primary outcomes were 30 all-cause mortality and 30-day infection-related mortality. Secondary outcomes included sterilization of cultures, isolation of a non-susceptible isolate within 30 days of therapy, hospital and intensive care unit (ICU) length of stay, and adverse drug effects (ADE) of therapy including: hyperkalemia, acute kidney injury (AKI), transaminisits, and QTc prolongation.

Results. There were 90 unique patients who were included in 212 (92%) with 30+ positive blood cultures; 54 patients with 87 positive pulmonary cultures). Overall mortality trends improved with combination therapy in blood culture positive patients and with monotherapy patients in pulmonary cultures. These findings are influenced by the limited number of patients available, and the medical complexity of these patients. In lung patients there were significantly fewer ADE associated with monotherapy as opposed to combination therapy.

Disclosures. All authors: No reported disclosures.