2406. "Real-world" Treatment of Multidrug-Resistant (MDR) or Extensively Drug-Resistant (XDR) P. aeruginosa Infections With Ceftolozane/Tazobactam (C/T) vs. Polymyxin and Aminoglycoside (Poly/AG)-based Regimen: A Multicenter Comparative Effectiveness Study

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Background. The emergence of MDR/XDR P. aeruginosa has led to a reliance on suboptimal agents (Poly/AG) for the management of infections due to this pathogen. C/T is a novel agent with excellent in vitro activity against resistant P. aeruginosa that is indicated for cUTI and cIAI and being reviewed for VABP; however real-world comparative data for invasive infections are lacking. The purpose of this study was to assess comparative rates of clinical cure, mortality, and acute kidney injury (AKI) among patients treated with C/T vs. a Poly/AG-based regimen for P. aeruginosa infections.

Methods. This was a retrospective, multi-site cohort of adult inpatients from January 1, 2012 to February 28, 2018 with infections due to MDR or XDR P. aeruginosa. Patients treated for ≥48 hours with C/T or a Poly/AG-based regimen were eligible for inclusion. Patients with a creatinine clearance <20 mL/minute, or those requiring renal replacement therapy at baseline were excluded.

Results. A total of 117 (57 C/T, 60 Poly/AG) patients were included. Baseline characteristics, infection source, severity of illness, and time to appropriate therapy were similar between the treatment groups. Mean age was 58.6 ± 15.1 years, and 70% were male. Common comorbidities included diabetes (35%) and CHF (28%), and the median (IQR) Charlson Comorbidity Index was 3 (1–4). 42% of the population presented with severe sepsis or septic shock, and 68% were in the ICU at the onset of the infection. The most common infections were nosocomial infections (46%) and hospital acquired (17%) pneumonia. Combination therapy was more frequently used in the Poly/AG group (72% vs. 12%; P < 0.001) Treatment with C/T was associated with a higher rate of clinical cure (79% vs. 62%; P = 0.046) and a lower incidence of AKI (7% vs. 33%; P < 0.001) compared with Poly/AG based therapy. In hospital mortality rates were similar (28% vs. 37%; P = 0.33). No patients receiving C/T had hypersensitivity reactions, neurological adverse events, or C. difficile infections.

Conclusion. This multi-center retrospective analysis provides real-world data supporting improved outcomes with C/T compared with Poly/AG-based regimens for invasive infections due to MDR/XDR P. aeruginosa.

Disclosures. All authors: No reported disclosures.

2408. Delayed Appropriate Antimicrobial Therapy Does Not Affect the Clinical Outcome of Patients With Acute Pyelonephritis by Extended-Spectrum β-Lactamase-Producing Enterobacteriaceae

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Background. Extended spectrum β-lactamase-producing Enterobacteriaceae (ESBL-PE) is related to inappropriate empirical therapy for acute pyelonephritis. The aim of this study was to investigate whether the delay in appropriate antimicrobial therapy of APN caused by ESBL-PE was associated with patient`s poor outcome or not.

Methods. A retrospective cohort study was performed at a tertiary-care hospital from January 2014 through December 2016. Patients who had APN caused by ESBL-PEs and were treated with appropriate definite antibiotics for at least 7 days were enrolled. The delay in appropriate antimicrobial therapy was defined as patients who had received appropriate antibiotics 48 hour or later after diagnosis of APN. Primary endpoint was treatment failure defined as clinical and/or microbiological failure. Secondary endpoint was length of hospital stay and recurrence of febrile urinary tract infection by ESBL-PE within 1 year. The propensity score matching and multivariable Cox proportional hazard modeling were used to adjust heterogeneity of each group.

Results. A total of 175 eligible cases were collected. Escherichia coli (144/175, 82.3%) was the most common pathogen, followed by Klebsiella pneumonia (29/175, 16.7%) and Citrobacter freundii (2/175, 1.1%). No significant difference was found between the groups in terms of the primary endpoint (9.6% vs. 12.8%, P = 0.58) and the secondary endpoint (9.6% vs. 12.8%, P = 0.82).

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2049. Drug-Induced Liver Injury (DILI) in a National Cohort of Hospitalized Patients Treated With Aztreonam and Ceftazidime
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**Methods.** A retrospective study was conducted to compare clinical outcomes in adult patients with documented CRE infections between January 2009 and December 2017 and received either ceftazidime–avibactam (CAZ-AVI) or best available therapy (BAT). Best available therapy was defined as antimicrobials with susceptibility to the causative pathogen according to CLSI breakpoints. The following clinical outcomes were assessed: clinical cure, total length of stay (LOS), 30-day mortality, and infection-related mortality.

**Results.** Infections caused by carbapenem-resistant Enterobacteriaceae (CRE) have been designated an urgent level threat to public health. With the advent of novel β-lactam/β-lactamase inhibitor combinations, the armamentarium against CRE is expanding. Our study aims to evaluate clinical outcomes in patients with CRE infections.

**Conclusion.** In this national cohort of hospitalized patients treated with ATM or CAZ, the overall rate of DILI was significantly higher in patients treated with ATM than in those treated with CAZ. However, there is a similarly low rate of moderate/severe DILI. Although further analyses are required to better understand causal mechanisms and clinical risks of DILI in patients receiving ATM or CAZ, these data from a large national cohort provide a useful benchmark of drug safety.

**Disclosures.** T. Lodise, parake: Consultant and Scientific Advisor, Consulting fee.

**2410. Clinical Outcomes Associated With Various Treatment Options for Infections Caused by Carbapenem-Resistant Enterobacteriaceae**
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**Background.** CRE is expanding. Our study aims to evaluate clinical outcomes in patients with CRE infections.

**Methods.** A retrospective study was conducted to compare clinical outcomes in adult patients with documented CRE infections between January 2009 and December 2017 and received either ceftazidime–avibactam (CAZ-AVI) or best available therapy (BAT). Best available therapy was defined as antimicrobials with susceptibility to the causative pathogen according to CLSI breakpoints. The following clinical outcomes were assessed: clinical cure, total length of stay (LOS), 30-day mortality, and infection-related mortality.

**Results.** One hundred and fifty patients met criteria for inclusion; 25 in the CAZ-AVI group and 125 in the BAT group. The median Charlson Comorbidity Index (CCI) was 6 in both cohorts, indicating a low baseline probability for survival. The most common primary sites of infection for the CAZ-AVI and BAT cohorts, respectively, were the following: blood (24% vs. 18%, P = 0.580), urine (36% vs. 23%, P = 0.209), intraabdominal (16% vs. 14%, P = 0.754), and lung (12% vs. 27%, P = 0.132). Combination therapy was utilized in 8% of patients in the CAZ-AVI group compared with 42% in the BAT group. Combinations in the BAT group consisted of colistin-based (68%), tigecycline-based (13%), and aminoglycoside-based (13%) regimens. Although clinical cure rates were similar between both groups (80% vs. 72%, P = 0.469), there was a proportion of the ATM DILI cases (37%) than the CAZ DILI cases (25%) and the cholestatic pattern comprising a smaller proportion (48% vs. 61%) (Figure 2).

**Conclusion.** In this national cohort of hospitalized patients treated with ATM or CAZ, the overall rate of DILI was significantly higher in patients treated with ATM than in those treated with CAZ. However, there is a similarly low rate of moderate/severe DILI. Although further analyses are required to better understand causal mechanisms and clinical risks of DILI in patients receiving ATM or CAZ, these data from a large national cohort provide a useful benchmark of drug safety.