1621. Novel Beta-lactam Beta-lactamase Inhibitors Against Alternative Antibiotics for the Treatment of Complicated Urinary Tract Infections and Pyelonephritis Caused by Carbapenem-resistant Enterobacteriaceae

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Background. There is little data on the comparative efficacy or safety of carbapenem-targeted beta-lactam beta-lactamase inhibitors (BL-BLI), including ceftazidime/avibactam (CZA) and meropenem/vaborbactam (MVB), versus alternative antibiotics for the treatment of CRE complicated urinary tract infections/acute pyelonephritis (cUTI/AP). The objective of this study was to evaluate rates of clinical failure in patients with CRE cUTI/AP treated with CRE-targeted BL-BLI vs. alternative regimens.

Methods. This was a multicenter, retrospective cohort study of adults admitted with a CRE cUTI/AP treated with CRE-active antibiotic(s), including combination therapy, for at least 48 hours between January 2012 and June 2019. Exclusion criteria included CRE colonization, non-urinary source co-infection, non-Enterobacteriaceae cUTI/AP, or mortality within 48 hours of index culture. The primary outcome was clinical failure, defined as continued symptoms or recurrence at 30 days from index culture. Secondary outcomes included 90-day recurrence and 30-day readmission.

Safety outcomes included treatment-limiting adverse effects, non-treatment limiting nephrotoxicity, and C. difficile infection.

Results. A total of 47 patients were included (BL-BLI, n=16; alternative, n=31). Alternative regimens included aminoglycosides, carbapenems, polymyxins, and tigecycline and utilized combination therapy more often (32.3% vs. 6.3%, p=0.046). Clinical failure occurred in 12.5% of patients in the BL-BLI group vs. 38.7% in the alternative group (p=0.063). Higher rates of 90-day recurrence (25.8% vs. 18.8%) and 30-day readmissions (51.6% vs. 31.3%) occurred in the alternative group vs. the BL-BLI group (p=0.017).

Conclusion. In this retrospective study, no difference in clinical failure resulted among groups; however, there was significantly more treatment-limiting adverse effects in the alternative group compared to the BL-BLI-based regimens, driven by nephrotoxicity.

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outcomes with this new dosing strategy. The purpose of this study was to investigate the outcomes of the new NBW dosing strategy in comparison to the previously used weight-based (WB) dosing strategy.

**Methods.** A retrospective study was conducted at our quaternary care hospital between January 2016 and April 2020. Adults (≥ 18 years), who received intravenous (IV) colistin for ≥ 72 hours were included. Documented clinical diabetes was the primary endpoint, which was defined as having at least two of the following: normalization of white blood cell count or ≥ 25% reduction, defervescence, hemo-dynamic stability, normalization of inflammatory markers (C-reactive protein and procalcitonin values) or ≥ 25% reduction of the resolution of signs and symptoms of infection by the end of the therapy. Secondary outcomes were microbiological cure, incidence of acute kidney injury (AKI), time to AKI, outcomes of AKI, time to AKI recovery, new infection while on IV colistin, recurrence of infection, and all-cause mortality.

**Results.** A total of 104 primarily male (57.7%) patients with a mean age of 63 ± 20.23 years and weight of 70.24 ± 19.46 kg met the inclusion criteria. At baseline for both groups, the estimated creatinine clearance was 74.23 ± 79.66 ml/min and renal replacement therapy was observed in 34.62%. There was no statistically significant difference observed in clinical cure rate in the WB was 77.03% while 83.33% in the NBW (p-value 0.48). However, a higher rate of AKI was observed in NBW was 84.21% while 53.33% in WB (p-value 0.02). Amongst those who had AKI, NBW had better AKI recovery status with 60.00% while 17.95% in NBW (p-value 0.00). A higher all-cause mortality rate was observed in the WB group with 55.41% while 20.00% in NBW (p-value 0.02).

**Conclusion.** The study showed no statistical difference in the primary outcome between the two groups, however, higher AKI rates, AKI recovery and all-cause mortality was observed in non-weight-based dosing when compared to the weight-based dosing. Our data needs to be validated in a larger study.

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**Conclusion:** Despite receiving a microbiologic active agent within ≤ 2 days of their PSA HAP/VAP, pts with PSA that were resistant to ≥ 1 ASPB had worse outcomes relative to those that had no ASPB resistance. Further study is needed, but these findings suggest that the full ASPB susceptibility profile needs to be considered when selecting therapy for pts with PSA HAP/VAP. More studies are also needed to determine if alternative or combination therapies may be needed to maximize outcomes in PSA infection when there is resistance ≥ 1 ASPB.

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**Conclusion:** Methicillin-resistant Staphylococcus aureus (MRSA) bacteremia is associated with significant mortality rates up to 30%. Guideline-recommended first-line therapy includes monotherapy with either vancomycin or DAP. Alternative regimens are recommended for persistent MRSA bacteremia of ≥ 7 days or earlier if evident clinical deterioration. The combination of DAP plus CPT has been investigated as salvage therapy due to its synergistic mechanism potential, but real-world data with the combination therapy is limited. The aim of this study was to evaluate the efficacy of DAP plus CPT combination therapy for the treatment of MRSA bacteremia and identify independent predictors of 30-day mortality.

**Methods.** This was a single center retrospective study of patients receiving DAP-CPT at any point in therapy for the treatment of MRSA bacteremia. Univariable and multivariable analyses were performed to identify independent predictors of 30-day mortality.

**Results.** Sixty-five unique patients received DAP-CPT with a median time to combination therapy of 7 days. There were no significant independent predictors of 30-day mortality. The most common reason for combination therapy was persistent...