

**P2014 Higher risk of acute kidney injury with piperacillin/tazobactam versus cefepime or meropenem in adult cystic fibrosis patients treated with vancomycin and tobramycin**

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**Background:** Piperacillin/tazobactam (TZP) is associated with more acute kidney injury (AKI) than comparator beta-lactams when used in combination with vancomycin (VAN) in the general patient population; however, this phenomenon has not been described in adults with cystic fibrosis (CF). The purpose of this investigation was to compare the frequency of AKI associated with TZP to cefepime and/or meropenem (FEP/MEM) when used in combination with VAN and tobramycin (TOB) in adults with CF.

**Materials/methods:** This was a single-center, retrospective, cohort study of adult CF patients treated with TZP or FEP/MEM in combination with VAN and TOB between July 2006 and April 2018. Only the first encounter meeting enrollment criteria per patient was eligible for inclusion. Patients were excluded for the following reasons: i) stage 4 or 5 chronic kidney disease at baseline, ii) greater than 7 days between initiation of study antibiotics, iii) less than 48 hours of antibiotic therapy, iv) administration of both TZP and FEP/MEM during the index encounter, and v) fewer than 3 serum creatinine values obtained during the index encounter. The primary outcome was the frequency of AKI defined using the Risk, Injury, Failure, Loss, End-stage (RIFLE) criteria. Secondary outcomes included peak serum creatinine, improvement in AKI by hospital discharge, and resolution of AKI by hospital discharge.

**Results:** A total of 48 patients met enrollment criteria, 16 treated with TZP and 32 with FEP/MEM. Demographic and clinical baseline criteria were well balanced between groups. Acute kidney injury occurred more frequently with TZP than FEP/MEM (25% vs 3.1%,  $p = 0.04$ ) when used in combination with VAN and TOB. Median peak serum creatinine was similar between treatments, and there were no statistically significant differences in the frequency of patients with renal improvement or recovery by hospital discharge.

**Conclusions:** Piperacillin/tazobactam may be associated with higher rates of kidney injury than comparator beta-lactams when used in combination with VAN and TOB in adults with CF. This association warrants further investigation in larger, multi-center studies in this patient population.

