POSTER ABSTRACTS

247. Antimicrobial Activity of Ceftolozane/Tazobactam Tested against Gram-negative Bacterial Isolates from Hospitalized Patients with Pneumonia in United States Hospitals (2013)

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Background. Ceftolozane/tazobactam (TOL/TAZ) is a novel antibacterial with activity against *P. aeruginosa* (PSA) and other common Gram-negative pathogens (GN). TOL/TAZ is currently under clinical development for the treatment of nosocomial pneumonia, complicated intra-abdominal infections and complicated UTIs. The in vitro activity of TOL/TAZ was tested against GN in patients hospitalized with pneumonia in USA hospitals.

Methods. 1458 isolates were consecutively collected in 29 USA hospitals from patients with pneumonia in 2013. Susceptibility (S) testing was performed by CLSI broth microdilution methods (TOL/TAZ at a fixed 4 μg/mL of TAZ).

Results. PSA was the most common pathogen (39.8%) and TOL/TAZ was the most active β-lactam tested against PSA (97.6% inhibited at ≤8 μg/mL). PSA exhibited moderate S to meropenem (MEM, 78.1%), ceftazidime (CAZ; 83.0%), cefepime (FEP, 81.2%), piperacillin/TAZ (PIP/TAZ; 75.7%), levofloxacin (LVX; 72.6%), and gentamicin (GEN; 86.0%). TOL/TAZ exhibited activity against CAZ-non-S, MER-non-S PSA, and MDR PSA isolates (Figure). TOL/TAZ was active against *K. pneumoniae* (KPN; $MIC_{50/90}$, 0.5/ > 32 μg/mL) but activity was lower ($MIC_{50/90}$, 32/ > 32 μg/mL) against ESBL-phenotype KPN (31.2%); similar to all β-lactams [including MER (32.2% S)] and LEV (18.6% S) and GEN (57.6% S). TOL/TAZ inhibited 84.2% of MEM-S-ESBL-KPN at ≤8 μg/mL. TOL/TAZ was active against *E. coli* (MIC_{90}, 0.5 μg/mL), including ESBL-phenotype isolates (MIC_{90}, 1 μg/mL). TOL/TAZ inhibited 93.4 and 96.2% *Enterobacter* spp. (ESP) and *Serratia* spp., respectively, at ≤8 μg/mL, and demonstrated activity against CAZ-non-S ESP (70.3% inhibited at ≤8 μg/mL). TOL/TAZ was active against *P. mirabilis* (MIC_{90}, 0.5 μg/mL), *Citrobacter* spp. (MIC_{90}, 4 μg/mL) and indole (+) *Proteae* (MIC_{90}, 1 μg/mL). All β-lactams had limited activity against *Acinetobacter* spp.

Conclusion. In GN isolates from hospitalized patients with pneumoniae in USA hospitals, TOL/TAZ demonstrated greater in vitro activity than currently available cephalosporins, carbapenems, and P/T when tested against PSA, including MDR strains. Additionally, TOL/TAZ demonstrated greater activity than currently available cephalosporins and PIP/TAZ against Enterobacteriaceae from pneumonia specimens.

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