Plazomicin Versus Meropenem for Complicated Urinary Tract Infection and Acute Pyelonephritis: Diagnosis-specific Results From the Phase 3 EPIC Study

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INTRODUCTION
• Increasing antibiotic resistance among gram-negative pathogens is a global public health concern that limits treatment options for common bacterial infections, such as complicated urinary tract infection (cUTI) and acute pyelonephritis (AP).1
• Plazomicin is a new, oral, aminoglycoside with in vitro activity against multidrug-resistant (MDR) Enterobacteriaceae, including strains producing extended-spectrum β-lactamases (ESBL) and those that are resistant to carbapenem and currently unavailable aminoglycosides.2

OBJECTIVE
• To evaluate the safety and efficacy profiles of plazomicin and meropenem in cUTI or AP requiring at least 4 days of IV antibiotic therapy; and diagnosis (cUTI or AP).
• To compare the microbiological modified intent-to-treat (mMITT) population of patients with cUTI, including end-of-IV therapy (EOIV, days 4-7) and TOC (days 15-19).
• To evaluate baseline characteristics and efficacy and safety outcomes by diagnosis in patients with cUTI or AP in the EPIC study.

METHODS
• A multinational, randomized, double-blind, phase 3 clinical study (NCT02498967).
• Hospitalized patients with cUTI or AP were randomized 1:1 to intravenous (IV) plazomicin (15 mg/kg daily) or IV meropenem (≥105 colony forming units [CFU]/mL in urine) that was 100% susceptible to meropenem (minimum inhibitory concentration [MIC] of ≤1 µg/mL, per 2015 Clinical and Laboratory Standards Institute [CLSI] susceptibility criteria) and a plasmid MIC of ≤5 µg/mL.

RESULTS
• The incidence of adverse events (AEs), serious AEs, and AEs leading to discontinuation of IV study drug was comparable between treatment arms and was similar between AP and cUTI patients.

CONCLUSIONS
• Plazomicin was well tolerated in patients with cUTI or AP, and demonstrated higher microbiological eradication rates for both diagnoses of the TOC visit compared with meropenem, a preferred agent for treatment of infections that are susceptible to MDR Enterobacteriaceae.

DISCLOSURES
• DJC, ASK, DSC, TRK, KMK, and LEC are employees of and stockholders of Achaogen.
• DJC has consulted for Actaegen, Achaogen, Amgen, Astellas, AstraZeneca, BioNTech, Bionorica, Bode, Cubist/MSD, Janssen, Leo-Pharma, Marpinion, MerLion, Merck, Pfizer, Postgraduate Medicine, Proctor & Gamble, Proacta, Profectis, pilea, Postgrad Med, Paeger, Paeger and Research, Plzen, Roche, Roche Pharma, and research funds from Janssen (hematological/oncological and infectious diseases) and Postgraduate Medicine (infectious diseases).

REFERENCES

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