**Sulopenem Activity against Enterobacteriaceae Isolates from Patients with Urinary Tract Infection**

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**ABSTRACT**

Background: Sulopenem is a thienamem antibiotic with an oral and parenteral formulation being developed for the treatment of urinary tract infection (UTI) and complicated intra-abdominal infection. The activity of sulopenem aligns with the most urgent drug-resistant antimicrobial threats defined by the CDC, including ESBL-producing strains of Escherichia coli and Klebsiella species. We evaluated the in vitro antimicrobial activity of sulopenem against 324 contemporary clinical Enterobacteriaceae isolates from patients with a hospital acquired or community acquired UTI.

**Materials/methods:** Sulopenem and other antimicrobial agents were tested for in vitro activity against 324 recent (2015-2016) Enterobacteriaceae isolates collected through the SENTRY Antimicrobial Surveillance Program in patients in Europe and North America with UTI. Reference broth microdilution susceptibility testing was conducted for sulopenem and comparator agents per Clinical and Laboratory Standards Institute (CLSI) guidelines using cation-adjusted Mueller-Hinton broth. Sensitivity data for comparator agents was provided from the SENTRY surveillance database.

**Results:** The sulopenem MIC<sub>50</sub> values for Enterobacteriaceae were ≤0.06/≤0.25 µg/mL. For E. coli isolates, whereas MIC<sub>90</sub> ≤0.12/≤0.5 µg/mL. Sulopenem demonstrated potent in-vitro activity against Enterobacteriaceae isolates – Collected through the SENTRY Antimicrobial Surveillance Program – Patients in Europe and North America with UTI – Reference broth microdilution susceptibility testing was conducted – Clinical and laboratory standards institute (CLSI) guidelines – Cation-adjusted Mueller-Hinton broth – Quality control ranges for bacterial reference strains and interpretive criteria for the comparator compounds tested, as published in CLSI M100-S27 (2017)

**Sulopenem Activity against Key Urinary Pathogens by Geographic Location**

**RESULTS**

**Conclusions:** Sulopenem demonstrated potent in-vitro activity against organisms commonly implicated in urinary tract and intra-abdominal infections. Sulopenem may represent a valuable treatment option for Gram-negative infections, including those caused by ESBL-producing Enterobacteriaceae.