

**REVISED ABSTRACT**

**INTRODUCTION**

Omadacycline is a tetracycline-based antibiotic, a semisynthetic tetracycline derivative of the semisynthetic family in the drug development lifecycle of antibiotics and represents a novel anti-infective agent for community-acquired bacterial pneumonia (CABP) and acute bacterial skin and skin structure infections (ABSSSI).

- This study evaluated the in vitro antibacterial activity of omadacycline and comparator antimicrobial agents against gram-negative isolates from patients with multiple infection types in European medical centers participating in the 2016 SENTRY Antimicrobial Surveillance Program.

**MATERIALS AND METHODS**

- Assay of 468 gram-negative bacterial isolates comprised of 215 Acinetobacter spp., 42 Enterobacteriaceae, 38 Haemophilus influenzae, 52 Moraxella catarrhalis, and 64 other (intravenous and oral formulations). Omadacycline has shown potent activity against acute bacterial skin and skin structure infections (≥90% of isolates were inhibited by ≤0.12 mg/L).

**RESULTS**

- Gram-negative isolates were collected from bloodstream infections (60%), pneumonia in hospital patients (34%), urinary tract infections (UTIs; 15%), and other (1%). Overall, 15.7% of Enterobacteriaceae spp. (130) were ESBL or AmpC producers (153), and 4% of isolates were Pseudomonas aeruginosa.

**CONCLUSIONS**

- Omadacycline demonstrated in vitro activity against Enterobacteriaceae isolates (MIC90 ≤ 4 mg/L), ≥71% of isolates were ≤0.06 mg/L, and ≥94% of isolates were ≤ 0.12 mg/L. The results of this surveillance study support the continued development of omadacycline as a novel anti-infective agent with a broad spectrum of activity against gram-negative and group A streptococcal isolates.