Background: bloodstream infections (BSI) are associated with significant mortality and are a leading cause of death worldwide. The emergence of antibiotic-resistant bacteria underscores the need for new therapeutic options.

Amended Abstract

Bacterial strain collection: a total of 257 clinical isolates were collected from patients in the United States and Europe. The isolates included 175 Staphylococcus aureus, 54 coagulase-negative staphylococci (CoNS), 15 Enterococcus faecalis, 11 Streptococcus pyogenes, 11 Streptococcus agalactiae, 15 Staphylococcus schleiferi, and 17 other species.

Materials and Methods: oritavancin is a novel antimicrobial agent with a unique mechanism of action that irreversibly inhibits prokaryotic RNA polymerase. The oritavancin MIC range was determined by the broth microdilution method according to CLSI and EUCAST guidelines. The results were interpreted using the criteria established by the CLSI.

Antimicrobial susceptibility test: the oritavancin MIC range was determined by the broth microdilution method according to CLSI and EUCAST guidelines. The results were interpreted using the criteria established by the CLSI.

Results: oritavancin demonstrated high activity against a wide range of Gram-positive bacteria, including methicillin-resistant Staphylococcus aureus (MRSA) and vancomycin-resistant enterococci (VRE). The oritavancin MIC range was ≤0.004/0.015 µg/mL for MRSA and vancomycin-resistant Enterococcus faecalis (VREF), which was significantly lower than that for daptomycin (MIC range: 0.008–0.03 µg/mL) and linezolid (MIC range: 0.12–0.25 µg/mL). Oritavancin also demonstrated excellent activity against other Gram-positive pathogens, including Clostridium difficile, Listeria monocytogenes, and Enterococcus faecalis.

Conclusions: oritavancin exhibited high activity against a wide range of Gram-positive bacteria, including MRSA and VREF. The excellent in vitro activity of oritavancin against these pathogens highlights its potential for clinical use in the treatment of BSI.

References

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