Antimicrobial Activity of Ceftobiprole When Tested against Gram-Positive Cocci Causing Serious Infections (2016–2017): Endocarditis, Diabetic Foot, and Bone/Joint Infections

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Introduction

- Ceftobiprole is a potent advanced-generation cephalosporin that is active against a wide range of Gram-positive pathogens.
- Ceftobiprole exhibits excellent in vitro activity against methicillin-resistant and methicillin-sensitive S. aureus, Enterococcus faecalis, and penicillin-resistant Staphylococcus pneumoniae.
- Against Enterococcus faecalis and Penicillin-susceptible enterococci, ceftobiprole displays potent in vitro activity that is similar to other advanced-generation oxacephem-type cephalosporins.

Materials and Methods

- Bacterial isolates: A total of 209 clinical isolates, comprising 159 S. aureus (39.4% methicillin-resistant; 25 coagulase-negative staphylococci [CoNS]), 76.0% Enterococcus spp, and 39.4% S. pneumoniae, were collected from patients in US medical centers.

Results

- The ceftobiprole MIC90 values against S. aureus were ≤0.015 mg/L (99.4% susceptible; Tables 1 and 2).
- The MIC90 values for MRSA and MSSA were 0.12 mg/L and 0.06 mg/L, respectively (Table 1).
- Ceftobiprole and ceftriaxone were the most potent oxacephem-type tested against the 94 MSSA isolates and were 98.4% and 98.1% susceptible, respectively.

Conclusions

- Ceftobiprole exhibited potent activity against contemporary clinically relevant Gram-positive isolates causing serious infections, including endocarditis, diabetic foot infections, and bone/joint infections, among hospitalized patients in US medical centers.
- The MIC50 and MIC90 values of the S. aureus isolates (99.4% MRSA) were susceptible to ceftobiprole (2018).
- These in vitro susceptibility data indicate that ceftobiprole may be an attractive option for treating serious infections caused by Gram-positive pathogens including MRSA.

Table 2: Activity of ceftobiprole and comparator antimicrobial agents against Gram-positive cocci

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