ABSTRACT

Background: Dalbavancin (DAL) is a new lipoglypopeptide with activity against Gram-positive pathogens. The purpose of this study was to assess the activity of DAL, linezolid (LZD) and vancomycin (VAN) against Gram-positive pathogens isolated from Canadian hospitals.

Methods: CANWARD is an ongoing (2007-present) national surveillance study involving tertiary care hospitals representing 8 of 10 provinces within Canada. A total of 7955 Gram-positive pathogens were collected from all hospital wards.

Susceptibility testing was performed using CLSI broth microdilution methods.

Results: The activity (MIC50 and MIC90 (μg/ml)) of DAL, LZD and VAN against select pathogens is described below:

<table>
<thead>
<tr>
<th>Organism</th>
<th>MIC50</th>
<th>MIC90</th>
</tr>
</thead>
<tbody>
<tr>
<td>S. epidermidis</td>
<td>6.3</td>
<td>12.5</td>
</tr>
<tr>
<td>E. faecalis</td>
<td>0.03</td>
<td>0.12</td>
</tr>
<tr>
<td>Enterococcus</td>
<td>0.03</td>
<td>0.12</td>
</tr>
<tr>
<td>MSSA</td>
<td>0.03</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Dalbavancin is more active than linezolid and vancomycin versus S. pneumoniae, MRSA, MSSA, MRSE, MRSE and Enterococcus spp.

MATERIALS & METHODS

Bacterial isolates

From 2007 to 2009, each participating Canadian hospital submitted consecutive weekly isolates collected from four specimen sources: lower respiratory tract wounds and blood cultures. Each site submitted 730, 740 and 765 isolates per year respectively. Total isolates received each year were 7941, 8622 and 8775 (overall total 18,538).

Antimicrobial Susceptibilities

A custom microbe panel was prepared in accordance with Clinical and Laboratory Standards Institute (CLSI) guidelines. Polymyxin B (0.0025–1024 μg/ml) was added to both the stock solution of dalbavancin and linezolid for each panel.

The following interpretive breakpoints (μg/ml) were used for tigecycline (μg/ml): MSSA and MRSA = 0.5 (S); Enterococcus faecalis = 0.25 (S); Streptococcus pneumoniae = 0.06 (S). MIC interpretive standards for the remaining antimicrobial agents were defined according to CLSI breakpoints (M100-19, 2009).

CONCLUSIONS

Dalbavancin is more active than comparators against both methicillin-susceptible and resistant strains of S. aureus, including community-associated and hospital-associated strains.

Dalbavancin is more active than comparators against both methicillin-susceptible and resistant strains of S. pneumoniae.

Dalbavancin is more active than comparators against E. faecalis, E. faecium, and non-susceptible Enterococcus.

ACKNOWLEDGMENTS

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REFERENCES