**Activity of Telavancin against a Contemporary Collection of Staphylococcus aureus Clinical Isolates from All 9 US Census Bureau Divisions**

**INTRODUCTION**
- Telavancin is a once-daily parenteral bactericidal glycopeptide antimicrobial agent.
- Telavancin exhibits a dual mechanism of action that involves inhibition of bacterial cell wall sis functions.
- Telavancin is approved in the United States for the treatment of adults with complicated skin and skin structure infections (cSSSIs) and hospital-acquired and ventilator-associated bacterial pneumonia (HAP/VAP) caused by susceptible isolates of Staphylococcus aureus when alternative treatments are not available.
- Telavancin exhibited efficacy comparable to vancomycin in a limited number of patients with either cSSSIs or HAP/VAP and resistant S. aureus bacteremia.
- This study evaluated the activity of telavancin and comparators against a current collection of S. aureus isolates including multidrug-resistant (MDR) methicillin-resistant S. aureus (MRSA) collected from United States (US) hospitals in 2017.

**MATERIALS AND METHODS**
- **Bacterial strain collection**
  - A total of 3,511 S. aureus isolates were collected in 2017 from 34 US sites located on 9 census divisions.
  - Isolates were principally from cSSSIs (48.0%), pneumonia in hospitalized patients (24.7%), and bloodstream infections (21.7%).
- **Antimicrobial susceptibility test methods and MDR definition**
  - Isolates were tested for susceptibility by current Clinical and Laboratory Standards Institute (CLSI) methods, and MIC interpretations used current CLSI and European Committee on Antimicrobial Susceptibility Testing (EUCAST) criteria.
  - Telavancin broth microdilution MIC testing followed the CLSI-approved method, which includes supplementation with 0.02% polysorbate 80.
  - The MIC range for telavancin was set at ≤0.008 to ≥8 µg/mL.
- **Clinical isolates**
  - Clinical isolates were monitored by color-coding.
  - MIC values were validated by concurrently tested CLSI-recommended quality control reference strains.

**Table 1. Antimicrobial activity for telavancin and comparators tested against 414 MDR MRSA isolates from the United States (2017)**

<table>
<thead>
<tr>
<th>Antimicrobial agent</th>
<th>MIC range (µg/mL)</th>
<th>MSSA (n = 1,994)</th>
<th>MDR MRSA (n = 414)</th>
<th>%R</th>
<th>%S</th>
<th>%I</th>
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<tbody>
<tr>
<td>Telavancin</td>
<td>≤0.008 to &gt;8</td>
<td>100.0</td>
<td>17 (100.0)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ceftaroline</td>
<td>≤0.008 to &gt;8</td>
<td>76.8</td>
<td>8 (100.0)</td>
<td>0</td>
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<td>Ceftazidime</td>
<td>≤0.008 to &gt;8</td>
<td>11.4</td>
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<td>Teicoplanin</td>
<td>≤0.008 to &gt;8</td>
<td>0.06</td>
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<tr>
<td>Vancomycin</td>
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<tr>
<td>Daptomycin</td>
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**Figure 1. Infection types of S. aureus isolates**

- **Figure 2. Prevalence of MSSA and MDR MRSA isolates by US Census Bureau Division**

**Figure 3. Telavancin activity against all S. aureus isolates stratified by vancomycin MIC**

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**CONCLUSIONS**
- Telavancin exhibited activity in vitro against a contemporary collection of S. aureus clinical isolates from 2017, including MDR MRSA.
- The prevalence of telavancin was 4- to 8-fold greater than tested comparators.
- These data indicate that telavancin has potent in vitro activity against S. aureus isolated from cSSSIs, pneumonia, and bloodstream infections, regardless of the resistance phenotype.

**ACKNOWLEDGEMENTS**

**REFERENCES**

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**Poster #Friday-416**

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