Tigecycline Activity Tested against Infrequently Recovered Clinical Species of Non-enteric Gram-negative Bacilli

**ABSTRACT**

Objective: To assess tigecycline activity and potency against non-Enterobacteriaceae Gram-negative bacilli (NEGNB) clinical isolates, which are infrequently isolated clinical pathogens of public health concern. These non-Enterobacteriaceae species are important pathogens in cystic fibrosis patients. Infections caused by NEGNB are known to result in hospitalization and significant morbidity and mortality. Little is known about the spectrum of activity of tigecycline against these unusual species of bacteria, which are responsible for nosocomial nosocomial infections caused by these organisms. Tigecycline has demonstrated a broad spectrum of activity against Gram-positive and -negative infections caused by these organisms. Tigecycline has demonstrated a broad spectrum of activity against Gram-positive and -negative infections caused by these organisms.

Materials and Methods: A total of 2,996 clinically-significant isolates of NEGNB (23% susceptible to ciprofloxacin) were collected from 142 hospitals in 32 countries as part of the SENTRIP Antimicrobial Surveillance Program over a seven year sampling period (2003-2009). Isolates were submitted to a coordinator laboratory where species identifications when available. Comparisons were made between the MIC endpoints of tigecycline and several pharmacologically-important comparator antimicrobial agents (e.g., polymyxin B, meropenem, and colistin) using validated broth microdilution panels manufactured by the CLSI (M07-A8, 2009). Susceptibility testing was performed according to CLSI (M100-S20, 2010) criteria, when available. Categorical interpretation of comparator MIC values were validated against the National Committee for Clinical Laboratory Standards (NCCLS) (S29-S37).

RESULTS

1. **Tigecycline Activity Tested against Infrequently Recovered Clinical Species of Non-enteric Gram-negative Bacilli clinical isolates collected as part of the SENTRIP Antimicrobial Surveillance Program over a seven year sampling period (2003-2009).**

<table>
<thead>
<tr>
<th>Species</th>
<th>Number of Isolates</th>
<th>Tigecycline MIC50/MIC90 (mg/L)</th>
<th>Comparator MIC50/MIC90 (mg/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Acinetobacter baumannii</em></td>
<td>2,158</td>
<td>0.12/0.5</td>
<td>0.12/0.5</td>
</tr>
<tr>
<td><em>Burkholderia cepacia</em></td>
<td>328</td>
<td>0.12/0.5</td>
<td>0.12/0.5</td>
</tr>
<tr>
<td><em>Achromobacter</em></td>
<td>123</td>
<td>0.12/0.5</td>
<td>0.12/0.5</td>
</tr>
<tr>
<td><em>Moraxella</em></td>
<td>17</td>
<td>0.12/0.5</td>
<td>0.12/0.5</td>
</tr>
</tbody>
</table>

**SELECTED REFERENCES**


**CONCLUSIONS**

- Tigecycline showed potent in vitro activity against many NEGNB species. There are many limited therapeutic options and susceptibility testing data to guide therapy.
- Against *S. maltophilia*, tigecycline activity was comparable to that of trimethoprim/sulfamethoxazole.

The results of this study indicated that tigecycline may have an important role in the treatment of infections caused by these NEGNB species.