**Background**

Eravacycline (ERV) is a novel fluorocycline antibiotic in phase 3 clinical trials for complicated intra-abdominal (cIA) and urinary tract infections (cUTIs). To evaluate its potential effectiveness against various Gram-negative (GN) isolates, ERV was tested in minimal inhibitory concentration (MIC) assays against third-generation cephalosporin-resistant (3GC-R) Enterobacteriaceae and carbapenem-resistant (CR) Acinetobacter baumannii and K. pneumoniae. This study aimed to characterize the potency of eravacycline against carbapenem-resistant Enterobacteriaceae (CPE) and isolates resistant to 3rd generation cephalosporins (3GC-R).

**Methods and References**

- **Methods**
  - Isolates were obtained from ATCC (Manassas, VA), IHMA (Chicago, IL), Eurofins (Chantilly, VA), or Walter Reed Hospital (Bethesda, MD). Susceptibility testing was performed according to CLSI methodology4. Time-kill assays were performed as described by CLSI guidelines5, with the following modifications: five milliliter cultures inoculated to a final starting density of ~1 x 10^6 CFU/mL and shaken vigorously at 280 ± 10 rpm in 50 milliliter polystyrene conical cultures. Cultures were harvested at various time points, serially diluted and plated on tryptic soy agar for CFU counts. For 3GC-R isolates, no more than 10^6 CFUs/mL were transferred to 30 mL of tryptic soy broth (TSB) containing 2% glycine and 0.5% NaCl to maintain a final starting density of -3.0 log colony forming units (CFUs). Time-kill assays were done in duplicates and 2, 4, and 6 MICs separately as per CLSI guidelines with the following modifications: starting cultures of 1 x 10^8 to 1 x 10^9 colony forming units (CFUs) in 5 mL, were shaken at 300 rpm at 37°C for 24 h. Time-kill cultures were serially diluted and plated on tryptic soy agar for CFU counts. Per organism, 12 to 13 clinical isolates were tested in 2/4 µg/mL, against isolates of CP-R AB (n=76), KP (n=83), 5/13 KP (n=204), ECl (n=133).

- **Reference**

**Results**

**Background**

- **Table 1.** Eravacycline is potent against carbapenem-resistant Enterobacteriaceae (CPE) and isolates resistant to 3rd generation cephalosporins

<table>
<thead>
<tr>
<th>Organism</th>
<th>ERV1,2</th>
<th>CP</th>
<th>TIG</th>
<th>3rd GC</th>
<th>FQ</th>
<th>AG</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>0.06/1</td>
<td>0.125</td>
<td>0.5</td>
<td>0.5/16</td>
<td>4/8</td>
<td>8/16</td>
</tr>
<tr>
<td>KP</td>
<td>0.06/1</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5/16</td>
<td>2/8</td>
<td>8/16</td>
</tr>
<tr>
<td>ECl</td>
<td>0.125</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5/16</td>
<td>2/8</td>
<td>8/16</td>
</tr>
</tbody>
</table>

**Conclusions**

- **Figure 1. Structure of Eravacycline**

- **Table 2. Susceptibility profiles of isolates tested in bactericidal assays**

<table>
<thead>
<tr>
<th>Infection Site</th>
<th>Sampling Site</th>
<th>Antibiotic</th>
<th>Org</th>
<th>Genotype</th>
<th>MIC (µg/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTI</td>
<td>TIG</td>
<td>3GC-R</td>
<td>CP-R</td>
<td>tet(M), SHV1</td>
<td>0.0312</td>
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**References**


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