Introduction

- Murepavadin (formerly, PDQ789) is a Human-elicited cyclic peptide for intravenous administration that represents the first member of a novel class of outer membrane protein-targeting antibiotics (OMPTA).
- Murepavadin displays a novel mode of action that targets the lipopolysaccharide (LPS) outer membrane protein complex of Gram-negative bacteria.
- Given the pathogen-specific nature of murepavadin, it is unlikely to generate resistance to it, or to negatively impact the patient's normal flora, which are unintended sequelae of treatment with broad-spectrum antibiotics.

This novel agent is being developed for the treatment of infections caused by Pseudomonas aeruginosa susceptible or caused by Pseudomonas aeruginosa that is resistant to, or negatively impacts, the patient's native bacterial flora.

Materials and Methods

Organisms collection

• Organisms were collected from the SENTRY Antimicrobial Surveillance Program.
• A total of 785 isolates (1 patient episode) were consecutively collected in North America (n=546) and 179 from 75 medical centers located in 21 European nations (n=353).

Sites of infection from which isolates were obtained included pneumonia (40%), bloodstream infections (15%), and severely intravenous (IV) and other bloodstream infections (2%).

Susceptibility testing

• Isolates were evaluated against murepavadin and comparator agents by the CLSI reference broth microdilution method using cation-adjusted Mueller-Hinton II agar.
• Isolates were tested against murepavadin and comparator agents by the CLSI reference broth microdilution method using cation-adjusted Mueller-Hinton II agar.

Table 1

<table>
<thead>
<tr>
<th>Organism</th>
<th>Resistance to Murepavadin</th>
<th>Resistance to Comparator Agents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td>MIC</td>
<td>MIC</td>
</tr>
<tr>
<td>Enterobacteriaceae</td>
<td>0.25/0.25 - 16/32 mg/L</td>
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</tr>
<tr>
<td>Pseudomonas aeruginosa</td>
<td>0.25 - 16/32 mg/L</td>
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</tbody>
</table>

Table 2

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Results

- Murepavadin was active against isolates susceptible to colistin (Table 1, 2).
- Resistance to murepavadin was seen in 99.6% of isolates from Europe and North America.
- Resistance to murepavadin was seen in 98.0% of isolates from Europe and North America.

Conclusions

- Murepavadin was well tolerated in a large collection of clinical isolates from Europe and North America.
- Resistance to murepavadin was seen in 99.6% of isolates from Europe and North America.

Acknowledgements

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References