Multicenter Evaluation of Meropenem/Vaborbactam MIC Results for Enterobacteriaceae Using MicroScan Dried Gram Negative MIC Panels

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ABSTRACT

Background: A multicenter study was performed to evaluate the accuracy of meropenem/vaborbactam on a MicroScan Dried Gram Negative MIC panels when compared to frozen CLSI broth microdilution reference panels.

METHODS: For efficacy, an evaluation was conducted at three sites by comparing MICs obtained using the MSDGN panel to MICs using a CLSI broth microdilution reference panel. A total of 670 Enterobacteriaceae clinical isolates were tested using the turbidity and Prompt® methods of inoculation. All frozen reference panels were incubated at 35 ± 2°C and read visually. Read times for the MSDGN panels were at 16-20 hours. Frozen reference panels, prepared according to ISO/CLSI methodology, were inoculated using the turbidity and Prompt® method. All frozen reference panels were incubated at 35 ± 2°C and read visually. Frozen reference panels were read at 16-18 hours. CLSI breakpoints (μg/mL) used for interpretation of MIC results were: Enterobacteriaceae 4/8 S, 8/16 I, ≥ 16/64 R.

RESULTS: When compared to frozen reference panel results, essential and categorical agreements for all clinical isolates are tested as follows:

INTRODUCTION

A multicenter study was performed to evaluate the performance of a MicroScan Dried Gram Negative MIC panel with meropenem/vaborbactam using Enterobacteriaceae isolates with CLSI interpretive breakpoints.

METHODS

Study Design: MicroScan Dried Gram Negative MIC panels were tested concurrently with a CLSI frozen broth microdilution reference panel at three sites using both the turbidity and Prompt Inoculation methods. A total of 670 Enterobacteriaceae clinical isolates were tested among the three sites.

Quality Control Expected Results, CLSI M100-ED29

<table>
<thead>
<tr>
<th>Organism Group</th>
<th>Susceptible</th>
<th>Intermediate</th>
<th>Resistant</th>
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</thead>
<tbody>
<tr>
<td>Enterobacteriaceae</td>
<td>≤0.03/8</td>
<td>0.06/8</td>
<td>≥0.12/8</td>
</tr>
</tbody>
</table>

- Major Errors = Frozen Reference MIC is S and MSDGN panel MIC is R; calculated for susceptible strains only.
- % Major Errors = Total No. S Isolates tested X 100
- % Very Major Errors = No. Very Major Errors X 100

Efficacy and interpretive agreement were determined for the Prompt Inoculation method and were outside of essential agreement compared to the reference method and should be used using the turbidity inoculation method.

CONCLUSION

This multicenter study showed that meropenem/vaborbactam MIC results for Enterobacteriaceae obtained with the MSDGN panel correlate well with MICs obtained using frozen reference panels using CLSI interpretive criteria.

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