Multi-Site Evaluation of Meropenem/Vaborbactam MIC Test Strip (MTS) Compared To Broth Microdilution MICs

L. Koeth, A. Windau, D. Hardy, J. Mortensen, O. Lomovskaya

Abstract:
Background: MIC Test Strips (MTS) is a bench top method for determining minimum inhibitory concentrations (MIC) for antibiotics.

Methods:
All clinical isolates were collected within one year of enrollment from three sites: Cincinnati Children’s Hospital, University of Rochester Medical Center and Laboratory Specialists, Inc. The Meropenem/Vaborbactam MTS were compared to reference broth microdilution (BMD) MIC tests according to CLSI (1) at SENTRY, Inc. (Wayne, PA). A total of 150 evaluable results were performed at SENTRY, Inc. (Wayne, PA).

Results:
Figure 1: 97% of consolidated isolate and site M/V MTS MICs were within +/-1 doubling dilution of modal MIC.

Table 2: Comparison of the MIC Test Strip (MTS) to the reference broth microdilution (BMD) MIC test. All site reproducibility is within 7 days of collection.

Conclusions:
The Meropenem/Vaborbactam MTS against Enterobacteriaceae performed similar to BMD testing. The essential agreement for meropenem/vaborbactam against P. aeruginosa was well above the 90% acceptance criteria (96%), however, overall there was trend for higher MTS results. There was a tendency for a single dilution higher meropenem/vaborbactam MIC results compared to BMD results, particularly for Enterobacteriaceae with BMD MIC results of ≤0.016 μg/mL, and within the major error rate. The MTS endpoints were easily determined; the testing sites reported no reading issues.

The Meropenem/Vaborbactam MTS was cleared for in vitro diagnostic use by the FDA.