ABSTRACT

Background: Caspofungin (Menk & Co, Raynham, New Jersey) is an echinocandin that is currently approved for use in the treatment of fungal infections and invasive aspergillosis. A multi-site evaluation was undertaken to determine the performance of the Sensititre YeastOne susceptometer (TREK Diagnostic Systems, Cleveland, OH) with Caspofungin (CAS) against Candida species.

Materials and Methods: 300 clinical (100 per site) and 100 challenge isolates along with 25 reproducibility isolates of Candida spp. were tested at 3 sites and compared to the CLSI BMD for Antifungal Susceptibility Testing (AST) of C. albicans. Results: Quality control minimal inhibitory concentration (MIC) limits for Broth Microdilution and MIC (μg/mL) provided by the CAS manufacturer were (0.008-16). The MIC results for the yeastOne plate were read after 24 hours of incubation at 35°C and was compared to the CLSI BMD. The range tested for CAS was (0.008-16 μg/mL) and results were within the CLSI expected QC ranges.

RESULTS

- Each isolate was tested using the Sensititre YeastOne Susceptibility System (TREK Diagnostic Systems, Cleveland, OH). The plates were set up according to manufacturer’s instructions.
- The CLSI BMD reference plate (TREK Diagnostic Systems, Lab, Cleveland, OH) was tested according to the CLSI standard.
- The MIC for the YeastOne plate was read after 24 hours of incubation at 35°C and was determined by observing the lowest antifungal concentration showing inhibition of growth (evidenced by no color change from blue to pink (positive)) to blue (negative). MIC’s are interpreted as the lowest concentration of antifungal solution remaining blue in color.

CONCLUSION

The high level of inter-laboratory agreement observed in the comparative CLSI broth microdilution broth microdilution and caspofungin MIC testing for CAS suggested the potential value of YeastOne as a susceptibility test method. The reproducibility of YeastOne susceptibility testing with caspofungin was equivalent to the CLSI M27 BMD and is a potential method for susceptibility testing of CAS.

REFERENCES