BACKGROUND: Invasive fungal infections (IFIs) have emerged as major causes of morbidity and mortality in immunocompromised or hospitalized with serious underlying diseases. The most common pathogenic fungi include yeasts and filamentous fungi. Antifungal agents were tested using CLSI reference broth microdilution methods. In vitro susceptibility testing of yeasts and moulds was performed using CLSI BMD as described in the CLSI reference method.

METHODS: 1,486 Candida spp., 107 Aspergillus spp., 34 non-Candida yeasts. 52 Cryptococcus neoformans strains were tested for in vitro susceptibility testing of C. neoformans (SC) and C. dubliniensis (HS1) and C. glabrata (274) were tested for in vitro susceptibility testing of C. glabrata strains. The breakpoints were determined as described in the CLSI reference method. MICs were determined as the lowest concentration of the antifungal drug that inhibited growth of Candida sp. or another resistance to the antifungal agents.

RESULTS: Concurrent with increasing numbers of IFI, surveillance programs have become important in identifying the geographic distribution and evaluate outcomes with specific responsible pathogen and that are providing information for appropriate antifungal drug selection and adjustment, although recent mortality rates and resource utilization significantly increases when therapy is delayed or inadequate (Table 1). Further understanding of the importance of epidemiological data.

In the present study, we used the Clinical and Laboratory Standards Institute (CLSI) broth microdilution (BMD) methods and newly developed clinical breakpoints (CBP) for the echinocandins, caspofungin,voriconazole and caspofungin in the USA, China, Germany, Belgium and Tartar. Voriconazole was active against all Candida spp. inhibiting 95.9, 99.6 and 100.0% of these isolates, respectively, at 2/88.6, 0.5/100.0 and 1/98.8 µg/ml, respectively. All 245 C. parapsilosis strains (100.0% susceptible). One isolate resistant to anidulafungin (68 isolates) had MIC values below the ECV for fluconazole and 96.2 and 99.9% of the isolates were resistant to fluconazole.

ANALYTICAL ABSTRACT

INTRODUCTION

Antifungal susceptibility testing

All yeast isolates were tested for in vitro susceptibility testing of the echinocandins (anidulafungin, caspofungin, micafungin) and the triazoles (itraconazole, posaconazole, voriconazole) using CLSI BMD according to the CLSI document M27-A3. Reference MICs were determined as described in the CLSI reference method. MICs were determined as the lowest concentration of the antifungal drug that inhibited growth of Candida sp. or another resistance to the antifungal agents.

RESULTS

C. albicans (714) were very similar in their antifungal susceptibility profiles, whereas C. glabrata (274) were tested for in vitro susceptibility testing of C. glabrata strains. The breakpoints were determined as described in the CLSI reference method.

CONCLUSION

Previous clinical breakpoints for C. parapsilosis were accepted for use in clinical practice, but the CBP was not accepted for C. glabrata, C. krusei and C. tropicalis. The MICs were determined as the lowest concentration of the antifungal drug that inhibited growth of Candida sp. or another resistance to the antifungal agents.

The MICs of echinocandins were the most sensitive to C. neoformans and C. glabrata. The CBP were determined as described in the CLSI document M27-A3. The triazoles MICs and echinocandin minimum effective concentration (MEC) were determined as described in the CLSI reference method.

REFERENCES


