



Symposium 8.1

Detecting Antifungal Resistance

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Over the past decade the incidence of fungal infections has continued to increase, commensurate with the rising number of immuno-compromised patients. Fortunately, a number of new antifungal compounds have also become available during this period.

Unlike antibiotics and bacteria, acquired resistance of fungi to antifungal drugs remains limited. In the limited number of resistant fungal strains studied, genetic mechanisms have been infrequently elucidated, and to date, have not related to acquired genetic elements and are not transferable. Therefore, at the present, test methods for susceptibility testing of antifungal agents have focused on phenotypic and not genotypic methods. Commonly used antifungal drugs comprise five general categories: Polyenes (amphotericin B); Pyrimidines (flucytosine), Allylamines (terbinafine), Azoles (fluconazole, itraconazole, ketoconazole, voriconazole and posaconazole) and Echinocandins (anidulafungin, caspofungin, and micafungin). Guidelines for fungal susceptibility test methods have recently been provided by the Clinical Laboratory Standards Institute (CLSI, formerly National Committee for Clinical Laboratory Standards or NCCLS) for a more commonly encountered drug: bug combinations. These include M27-A (broth dilution for yeasts), M44-A (disk diffusion for yeasts), and M38-A (broth dilution for filamentous fungi).

This lecture will review currently available antifungal drugs, modes of action and resistance, and currently available phenotypic susceptibility testing methods.