

# Preface

The incidence of fungal infections continues to increase in hospitalized patients. *Candida* spp. have become a significant cause of bloodstream infections (BSIs) in immunocompromised and immunocompetent patients. *Candida albicans* no longer is the cause of all of these fungemia cases, but rather only about 50% of BSIs are caused by *C. albicans*; the remainder are caused by other species of *Candida* to include *C. glabrata*, *C. tropicalis*, *C. parapsilosis*, and others. Not all of these yeast responsible for fungemia have a 100% predictable response to antifungal agents. *Candida* spp. in addition can be involved in a wide spectrum of infections from candidal vulvovaginitis to postsurgical wound infections, endophthalmitis, keratitis, endocarditis, and a host of other infections. Molds like *Aspergillus* spp., *Fusarium* spp., and *Pseudallescheria boydii* are responsible for pulmonary infections in immunocompromised hosts, including transplant patients, diabetics, and patients on long-term steroids. Dermatophyte infections remain one of the most communicable infectious diseases in the world.

The number of antifungal agents has increased so that there are choices and one drug does not have to be used for all fungal infections. There is a variable response of each yeast or mold to the antifungal agents. Some are always susceptible; others are intrinsically resistant. As more of these newer agents are used, resistance has begun to emerge just as it has for bacteria. To accommodate these changes, in vitro fungal susceptibility testing is being requested more and more. The manufacturing of manual and automated methods for performing an in vitro susceptibility test has increased, and more laboratories are performing yeast susceptibilities in house, rather than sending these out to reference laboratories. Even performance of in vitro mold susceptibilities are not as uncommonly done as was once the case.

This text has been designed to cover the topic of antifungal agents and resistance detection in fungal organisms, both yeasts and molds. One chapter is devoted to a description of the most used antifungal agents, including those that are given systemically, orally, and topically. Three chapters give information on the methods that

can be used for performing in vitro susceptibility tests for yeasts and molds, and the dermatophytes. The clinical utility of these in vitro tests is well described in one chapter of this text. A chapter on the usual patterns of susceptibility for common yeasts and molds is included as a reference tool for the laboratorian and the clinician. The authors hope that you will find this text useful in determining when and how in vitro testing might be done and instances where it need not be performed due to intrinsic resistances among the fungi.

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