



Sensitivity of Clinical Isolates of Candida Species to Antifungal Drugs

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Abstract

The incidence of fungal infections has increased dramatically over the past few decades. Newer antifungal agents have increased the therapeutic options thereby leading to the demand for in vitro determination of antifungal susceptibility. The sensitivity pattern of Candida species isolated from samples collected in a tertiary care hospital was studied. Isolates were tested against amphotericin B, clotrimazole, fluconazole and nystatin. The susceptibility pattern of these isolates revealed that most of the isolates were sensitive to amphotericin B, fluconazole and nystatin. Candida species were most sensitive to amphotericin B. Prevalence of resistance to amphotericin B was lowest followed by nystatin and azoles. Candida has shown high level of resistance to clotrimazole. Resistance has increased to these antifungal drugs as compared to earlier data. Fungal infections are often challenging to manage, caution has to be exercised in the use of antifungal drugs to arrest any further increase in the resistance.

Key words

Candida, Antifungal drugs, Resistance

Introduction

Fungi are opportunistic organisms, which are ubiquitous in nature. The last two decades have seen a steady increase in the incidence of systemic fungal infections especially due to opportunistic fungi. Prolonged antimicrobial therapy, invasive procedures, immunosuppressive therapy and the Acquired Immunodeficiency Syndrome (AIDS) pandemic have contributed to the rise in systemic fungal infections. The incidence of invasive fungal infections, particularly those caused by Candida species, Cryptococcus neoformans, and Aspergillus species has increased over the past few decades (1-2). These infections are major complications in immunocompromised patients and in patients with profound neutropenia due to hematological malignancies or chemotherapy. These infections are usually associated with a high attributable mortality (2-3). The available treatment of choice for infected patients includes amphotericin B, the antifungal azoles (fluconazole, itraconazole and voriconazole), polyene antifungals and

alternative agents with activities against these pathogens which have recently become available (4-5). Amphotericin B was considered the gold standard of antifungal therapy. However, it has serious side effects, and has to be administered intravenously. Lately, triazoles antifungal drugs with lesser toxicity have been introduced and are preferred for treatment. Failures of drug treatment in fungal infections combined with improvements in performances and standardization of antifungal susceptibility testing have drawn attention to the problem of antifungal resistance and its underlying mechanisms. Resistance to these antifungals has been reported worldwide and in India over the years with varying frequencies (6-7). Despite the well-founded enthusiasm for the new antifungal agents, it is important to continue to assess the activity of the older and newer agents.

Candida is currently one of the most frequent opportunistic fungal pathogen and the infections due to

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