Abstract

For the treatment of superficial fungal infections (dermatophytosis) is available a wide spectrum of antifungals from various chemical groups. These antifungals are mainly focused on various steps of ergosterol synthesis, thereby disrupting the cell membrane (allylamine,azole and morpholine antifungals) and on microtubule function (benzofuran antifungals). Despite the fact that the treatment of dermatophytosis is often associated with long-term exposure of the fungus to antifungals (weeks or months), until recently antifungal resistance in dermatophytes has been considered rare. However, current studies have shown the incidence of chronic infections, reinfection and treatment failures due to emerging resistance to some commonly used antifungals. The most serious problem today is the spread of resistance to terbinafine where the molecular principles are founded in the structural changes in the squalene epoxidase enzyme (SQLE). The increase in the incidence of this and other resistances is currently alarming especially in India, while the situation in Europe and America is in terms of dermatophyte susceptibility still quite favorable. The aim of this thesis is to summarize our knowledge of antifungal resistance in dermatophytes and their molecular principles. The thesis further summarizes the epidemiological situation in terms of the occurrence and spread of the resistance in the world.

Key words: antifungal drugs, antifungal resistance, azole derivates, dermatophytes, griseofulvin, skin infections, terbinafine, Trichophyton