

TITLE: PROFILE OF ANTIFUNGAL SUSCEPTIBILITY OF AGENTS OF EXTERNAL OTITE FUNGIC IN FRONT OF AZOLIC

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ABSTRACT:

Fungal external otitis is an infection that mainly affects the external auditory canal (EAC) up to the tympanic membrane, which can cause irreversible damage in the middle and inner ear regions, especially in immunosuppressed patients. It is estimated that this mycosis is associated in up to 25% of infectious otitis, most frequently caused by *Aspergillus* species responsible for recurrent otitis. Generally, the use of a topical antifungal is sufficient for treatment of this mycosis, with azoles being the topical drugs available. However, there are reports of resistance to this group of drugs. Thus, the objective of this work was to evaluate the antifungal activity of azole against etiological agents obtained from clinical samples from CAE of patients with otomycosis. Fourteen strains of the genus *Aspergillus*: *A. awamori*, *A. flavus*, *A. fumigatus*, *A. niger*, *A. parasiticus*, *A. sydowii*, *A. tamarii* isolated from CAE from otomycosis patients were used. In vitro antifungal activity was determined by the microdilution method in broth M38-A2, according to the Clinical and Laboratory Standards Institute using fluconazole (FLU), ketoconazole (KET) and itraconazole (ITR) tested against *Aspergillus*. The drugs were distributed in 96-well flat bottom microtiter plates in the concentration range from 64 to 0.125 µg/mL (FLU) and 16 to 0.03 µg/mL (KET and ITR). The fungal suspensions were prepared with seven days of growth at 35°C in Potato Dextrose Agar culture medium. The inoculum was obtained in RPMI 1640 medium, in which the density of the suspension was adjusted by spectrophotometer at 530nm to obtain an optical density of 0.09 to 0.13. MIC was determined in the wells, which showed inhibition of fungal growth. The species *Aspergillus fumigatus*, *A. parasiticus*, *A. niger* and *A. awamori* were resistant to fluconazole, with MIC > 64 µg/mL, but it was effective against other species with MIC of 16 µg/mL. In contrast to KET, the CIM ranged from 0.05 to 8 µg/mL, with *A. awamori* and *A. niger* being less susceptible, presenting a MIC of 8 µg/mL. ITZ demonstrated great efficacy when tested against pathogens with 0.03 MIC at 0.5 µg/mL. The increase in the incidence of cases of fungal otitis has been accompanied by the phenomenon of resistance to antifungals. Therefore, antifungal drug susceptibility testing has become essential, in particular, to observe resistance to available drugs and to define new antifungal agents for effective treatment in cases of fungal external otitis.

Keywords: *Aspergillus*, otomycosis, treatment

Development Agency: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq)