

Título: ANTIFUNGAL INTERFERENCE ON BIOFILM FORMATION OF *Candida albicans* OBTAINED FROM ORAL CAVITY OF AIDS AND IMMUNOCOMPETENT PATIENTS

Autores ROSA, F.C. ¹, SANTOS, C.I. ², AZEVEDO, C. M. P. e S. ³, ANDRADE-MONTEIRO, C. ^{2,4}

Instituição 1 Faculdade Estácio de Sá (R. Grande, 1455 - Centro, São Luís - MA), 2 Universidade CEUMA (Rua Josué Montello, nº 1, Renascença II São Luís – MA), 3 Universidade Federal do Maranhão (Av. dos Portugueses, 1966, Bacanga, São Luís – MA), 4 Instituto Federal do Maranhão (Avenida Getúlio Vargas, 04, Monte Castelo, São Luís – MA).

Resumo

Oropharyngeal candidiasis caused by *Candida* yeasts is the most common opportunistic fungal infection in immunocompromised patients, such as patients with AIDS. These infections, mainly caused by *Candida albicans* species, increase patient length of stay, and cause high mortality. It has been described that the pathogenic behavior of opportunistic fungi is directly associated with specific biological characteristics such as adhesion ability and biofilm formation. The aim of this study was to verify the interference of antifungal drugs in the formation of biofilms and in preformed biofilms of oral *C. albicans* isolated from AIDS patients and healthy individuals. The strains were obtained from the oral mucosa of 52 AIDS patients, treated at a hospital in Sao Luis - MA. Volunteers with no clinical evidence of immunosuppression and negative for HIV, attended the *Candida* spp collection of oral samples (control group). The samples were subjected to the biofilm test production and some were again tested for biofilm production in the presence of antifungal (nystatin, fluconazole and itraconazole) added just after the adhesion or after biofilm growth for 24 hours. Among the samples of the test group (n = 23), 20 were biofilm producers, while in the control group (n = 11) only 4 produced biofilm. Four samples (each group) positive for biofilm production were analyzed against the antifungal presence during the early growth of the biofilm and after 24 hours of their formation. When added soon after adhesion phase fluconazole, itraconazole and nystatin showed inhibitory action during biofilm formation for the test group, while the control group only Nystatin acted positively. Fluconazole did not inhibit the growth of pre-formed biofilm in any sample. The itraconazole action caused a marked decrease in cell density of biofilms of testing samples, but there was cell persistence; however the drug completely inhibited the biofilm of control samples. Nystatin interfered with the development of biofilms already formed by the samples of both the groups. Pre-formed biofilm by oral samples from both groups exhibited higher resistance to the tested drugs, however antifungal succeeded in preventing or reducing biofilm formation.

Key-words: *C. albicans*, biofilm, antifungals, resistance

Agência fomentadora: FAPEMA