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2172 Biofilm-forming Ability of Candida albicans is Unlikely to Contribute to High Oral Yeast Carriage in Human Immunodeficiency Virus Infection

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Increased prevalence of candidal carriage and oral candidiasis is common in human immunodeficiency virus (HIV)-infection and reasons for this may include the enhanced ability of colonizing yeasts to produce biofilms on mucosal surfaces. Objective: The aim of this study therefore was to examine the differences, if any, in biofilm forming ability of 26 Candida albicans isolates from HIV-infected and 20 isolates from HIV-free individuals, as this attribute in yeast isolates from HIV disease has not been examined before. Methods: Biofilm formation in microtiter plate wells was quantitatively determined using both the 2,3-bis (2-methoxy-4-nitro-5-sulfophenyl)-5-[(phenylamino) carbonyl]-2H-tetrazolium hydroxide (XTT) reduction and, the crystal violet methods. Results: Although candidal biofilm formation could be quantitatively evaluated using either technique the better reproducibility of XTT reduction assay, compared with the crystal violet method led us to conclude that the former is more sensitive ($P < 0.05$). There was no significant quantitative difference between biofilm formation in Candida albicans isolates from HIV-infected patients and HIV-free individuals over a period of 66 hours of in vitro incubation in a multiwell culture system ($P > 0.05$). Several host factors in HIV-infected group were found to have an effect on candidal biofilm formation: yeasts isolated from older individuals and, from those who were on antibacterials demonstrated decreased biofilm formation while yeasts from individuals on antifungals, and zidovudine showed increased biofilm formation (all $P<0.05$). Conclusion: Our data indicate that attributes other than biofilm formation may contribute to the increased oral yeast carriage in HIV infection. This work was supported by the CERG grant (a/c 10202943.21900.08009.324.01) of the Research Grant Council of Hong Kong and CRC grant (a/c 10203775) of the University of Hong Kong.

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