

TITLE: HYDROFOBICITY CELL ANALYSIS AND THE CAPACITY OF CLINICAL ISOLATES ACCESSION OF CANDIDA SSP IN EPITHELIAL CELLS

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ABSTRACT:

The adhesion of *C. albicans* to epithelial cells is an initial critical factor in the infection process being essential for colonization and induction of subsequent mucosal disease. The adherence of *Candida* to biological and inanimate surfaces is conditioned by several factors, as well as hydrophobicity. Determining the hydrophobicity of surfaces is an important measure because, between two hydrophobic surfaces, adhesion may be thermodynamically favorable. This study aims to verify the cellular hydrophobicity and to correlate it with the adhesion capacity of different *Candida* species to epithelial cells. Four different species of *Candida* (*C. albicans*, *C. tropicalis*, *C. parapsilosis* and *C. glabrata*) were isolated, totalizing 79 clinical samples from several sites of origin for hydrophobicity test and adhesion to HEp-2 cells. The hydrophobicity of *Candida ssp* was evaluated in increasing concentrations of ammonium sulphate, according to the agglutination of the yeasts. Suspensions of *Candida ssp* yeast were added to the HEp-2 cells to test the adhesion capacity. The adhesion to HEp-2 cells was also analyzed for the following adherence patterns: aggregative, diffuse, localized and pseudo-hyphal. The present study showed that *C. parapsilosis* was the least efficient species in adherence to HEp-2 cells with 55% of positive samples. *C. glabrata* and *C. albicans* were the species with the highest capacity of adherence to the tested cells (76.47 and 70.83%, respectively) followed by *C. tropicalis* (66.67%). As regards to the adherence patterns to HEp-2 cells, it was observed that the diffuse pattern was the most common among the analyzed samples, being present in 90.91% of the isolates of *C. parapsilosis*, 41.18% of the isolates of *C. albicans*, 25% of the isolates of *C. tropicalis* and 23.08% of those of *C. glabrata*. It was also observed that the aggregative pattern was the most common in isolates of *C. tropicalis* (58.33%). The localized type pattern was the most common in samples of *C. glabrata* (53.85%). *C. albicans* was the most hydrophobic species among the tested species, showing agglutination from the lowest concentrations of ammonium sulphate, evidencing that the hydrophobicity is not a decisive factor in the adhesion process.

Keywords: *Candida*, adhesion, hydrophobicity, epithelial cells

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