

Título: CELLULAR AND MOLECULAR ASPECTS OF ADHESION IN CLINICAL ISOLATES OF *Candida* spp

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Resumo:

The different *Candida* species are capable of expressing different gene products for adaptation and growth in a variety of extreme physiological conditions, providing infections. Many are the factors responsible for the virulence as lipases, proteases, and adhesins. Adhesion is initial critical factor in the process of infection being essential for both colonization and subsequent induction of mucosal disease. This study was performed with four *Candida* species (*C. albicans*, *C. glabrata*, *C. parapsilosis* and *C. tropicalis*) being evaluated: 1 - adherence to inert materials (glass, stainless steel and silicone) and cells (HEp-2); 2 - The influence of carbohydrates (glucose, mannose, raffinose, galactose, and lactose) in glass adhesion process; 3 - the presence of the ALS gene family and its correlation with adhesive properties in *C. albicans*. Adherence patterns to cover slips were also evaluated. The adhesion to glass coverslips were observed in 66.67% of the *C. albicans* isolates, the lower the number obtained for *C. parapsilosis* (75%) and *C. tropicalis* (83.33%). *C. parapsilosis* showed better performance for adhesion to silicone with higher positivity (90%) and a higher number of isolates classified as very strong adherents (15%). *C. albicans* and *C. glabrata* adhered to the stainless 100% of the isolates tested while *C. parapsilosis* and *C. tropicalis* were positive in 95 and 94.44% respectively. *C. glabrata* and *C. albicans* had higher adhesiveness to HEp-2 cells (76.47 and 70.83% respectively) followed by *C. tropicalis* (66.67%). Mannose inhibited adhesion of *C. albicans*, *C. tropicalis*, and *C. parapsilosis*. Raffinose have intensified the process in *C. tropicalis* and more intensely in *C. glabrata*. Galactose served also increasing adhesion in *C. glabrata* and *C. albicans*. In general, the ALS6 gene was most prevalent (82.51%). The ALS3 and ALS5 genes were detected in 31.82% of the isolates. The remaining genes were detected in frequency did not exceed 20%. Positive correlation was found among the presence of ALS1 and patterns of diffuse aggregative adhesion. ALS3 and ALS5 showed a negative correlation with the cover slip grip. The samples studied have strong affinity with inert surfaces and HEP-2 cells. In addition it was observed the influence of carbohydrates in the adhesion process of decreasing or increasing this property.

Palavras-chave: adhesion, ALS, *Candida* spp, virulence

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