

## The effect of antifungal compounds on cell surface hydrophobicity and adhesion of *Candida albicans* to buccal epithelial cells

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**Background and Aims:** Adherence of *Candida albicans* has been implicated as the first step in the pathogenesis of oral candidiasis and its relative cell surface hydrophobicity is a contributory physical force. The intra-oral concentration of the retained mouthwashes fluctuates considerably due to the dilution effect of saliva and the cleansing effect of the oral musculature. Hence the objective of the present study was to investigate the effect of brief exposure to therapeutic concentrations of these compounds on the cell surface hydrophobicity and adherence of *C. albicans* cells.

**Methods:** Chlorhexidine gluconate (0.2%) and cetyl pyridinium chloride (2.5%) solutions were used in this study. Minimum inhibition concentrations (MICs) of the antifungal compounds against *C. albicans* ATCC 10231 were determined by microdilution method. The cell surface hydrophobicity of the fungal strain was assessed by a biphasic aqueous hydrophobicity assay using Xylene. The adherence of *C. albicans* to epithelial cells after exposure to antifungal compounds was investigated by Gram staining.

**Results:** MICs of Chlorhexidine gluconate and cetyl pyridinium chloride against *C. albicans* were recorded as 0.0312 mg/ml and 0.312 mg/ml, respectively. The results of exposure of *C. albicans* cells to chlorhexidine gluconate and cetyl pyridinium chloride showed a relative high reduction in cell surface hydrophobicity of *C. albicans*, which had a direct correlation with lower epithelial cell adherence of test strain.

**Conclusions:** The current study reveals that exposure to therapeutic concentrations of these commonly used antiseptics; reduced *C. albicans* cell surface hydrophobicity and adherence to buccal epithelial cells which would contribute to exert an antifungal effect.

**Keywords:** *Candida albicans*; Cell surface hydrophobicity; Adhesion; Antifungal compound