

Studies on Adhesion Activity of *Candida albicans* to Human Buccal Epithelial Cells in Relation to Its Growth Phases

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ABSTRACT: Context and Aim: *C. albicans* is an important opportunistic pathogen in HIV infected patients, commonly causes oral candidiasis (OC). Adherence to the host cell is one of the important virulence factor most extensively studied. Both microbial and environmental factors influence the process of adherence of candida to host cells. In this work, we studied the adhesion activity of *C. albicans* at different growth phases. Isolates studied here were taken from HIV infected subjects with Oral Candidiasis (OC). Aim of the study was to evaluate the growth curve of *C. albicans* in specific growth condition and study the influence of growth phases on adhesion process using adhesion assay. **Settings and Design:** Two isolates of *C. albicans* from HIV infected patients with OC were randomly chosen for adhesion tests Methods and Material: **Growth curve experiment:** *C. albicans* was grown in Yeast Nitrogen Broth (YNB) with 500mM galactose/L at 35⁰ C, in a shaking incubator (150rpm). Growth curve was designed by calculating the viable count (pour plate method) and total count (counting on Neubauer chamber) in the samples taken at regular intervals. **Adhesion Experiment:** Candida cells from the broth were sampled at regular intervals of growth and tested for adhesion on HBEC from Healthy, non-HIV volunteers. Modification of Kimura and Pearsall method is used to perform this test. Adhesion pattern at each phase of growth is calculated. **Statistical analysis used:** Not applicable. **Results:** Both strains showed increased adherence at the end of log phase and stationary phase. Highest rate of HBEC adherence seen with 23 hrs old candida cells in isolate A. Isolate B, showed highest rate of adherence to HBEC with 20hrs old candida cells. **Conclusions:** Adhesion of *C. albicans* to host cells is greater with stationary phase cells according to previously done studies, which in accordance with results of our study. This may suggest that cell surface components that are responsible for mediating adherence accumulate over time during stationary phase.

KEY-WORDS:
Candida albicans,
Growth phase,
Adhesion