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ADHESION AND ENZYMATIC ACTIVITY OF CO-CULTURES OF C. ALBICANS AND *C. PARAPSILOSIS* ORAL ISOLATES

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C. albicans accounts for most of the fungal diseases whereas *C. parapsilosis* is emerging as a pathogen in the oral cavity. The aim

of this study was to evaluate the adhesion and enzymatic activity of *C. albicans* and *C. parapsilosis* clinical oral isolates on mono- and dual-species cultures in the presence of artificial saliva. Four different strains were used, two isolated from the same patient (*C. albicans* AM and *C. parapsilosis* AM2) and two strains isolated from different patients (*C. albicans* AC and *C. parapsilosis* AD). A suspension of $1x10^7$ yeast cells/ml was placed on the wells of a plate pre-coated with artificial saliva and incubated at 37ºC for 2h. After, the number of adherent yeasts was assessed by counting CFUs. For each enzyme studied a specific culture medium was used (hemolysin - blood agar medium, phospholipase - egg yolk based medium, proteinase - BSA agar medium). *C. parapsilosis* AM2 adhered significantly more in the presence of *C. albicans* AM, with which it was co-isolated than when adhered alone. A similar behavior was observed when this strain was co-cultured with *C. albicans* AC and when the other *C. parapsilosis* strain (AD) was co-cultured with C. albicans AM. Moreover, the adhesion extension of C. albicans strains was also increased in the presence of both C. parapsilosis. These highlight the synergistic effect between *C. albicans* and *C. parapsilosis*.

In mono-species culture, the enzymatic activity of *C. parapsilosis* AM2 was higher in comparison to all other strains. In dual-species culture the enzymatic activity seems to be favored by the presence of *C. albicans* AC, since enzymatic activity was higher when *C. parapsilosis* strains adhered together with *C. albicans* AC than with *C. albicans* AM. When the species isolated in co-infection were separated and grown in mono-species culture, the expression of the virulence factors by *C. parapsilosis* AM2 seems to be influenced by the absence of molecular signals produced by *C. albicans* strain. On the other hand, *C. albicans* AM seems to have ability to adapt to new environments, even in dual-species cultures with other *C. parapsilosis* strain (isolated in single-infection).

These results showed that adhesion and enzymatic activity of *C. albicans* and *C. parapsilosis* are different from strain to strain and that they are influenced by the presence of other species in culture.

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