TITLE: Proanthocyanidin polymeric tannins from *Stryphnodendron adstringens* are effective against dispersion cells from biofilms of *Candida* spp.

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ABSTRACT:
Yeasts from *Candida* genus, human commensal microorganisms, are often associated with opportunistic infections in immunosuppressed patients. These species are know by their ability to form biofilms, communities of heterogeneous cells surrounded by extracellular matrix. In addition to the planktonic cells resistance described by many authors; some studies have shown that dispersion cells from biofilms, responsible for dissemination and chronic infection, have greater resistance to antifungal agents and higher adhesion capacity, and are more virulence. Considering the inconvenience associated to antifungal resistance and side effects of the commonly used antifungal agents, the search for new antifungal agents has increased in the last years. *Stryphnodendron adstringens*, the Brazilian plant popularly used as cicatrizing and anti-inflammatory agent has been studied in order to determine its antifungal potential. In this study, we studied the susceptibility of planktonic cells and dispersion cells from biofilms of FCZ sensitive and resistant *Candida* spp (*C. albicans, C. glabrata, C. parapsilosis, C. tropicalis and C. krusei)* to standard antifungal agents and proantocyanidins polymer tannins (presents into the fraction F2 and semi-purified subfraction F2.4) obtained from the stem bark of *S. adstringens* by broth microdilution assay. Our results show that both fraction F2 and subfraction F2.4 were more effective to inhibit fungal growth of dispersion cells that detached from pre-formed biofilms than planktonic cells for all *Candida* isolates tested, represented by the lower minimal inhibitory concentration on dispersion cells (<0.48 – 31.25 µg/mL) value compared with the minimal inhibitory concentration on planktonic cells (0.98 - 250 µg/mL). For the standard antifungals, the dispersion cells susceptibility was similar or higher to the planktonic cells of *Candida* spp. These results suggest that the inhibitory effects of both F2 and F2.4 could be important to control the dissemination and re-infection by dispersion cells from *Candida* spp. biofilms. Consequently, both F2 and F2.4 from *S. adstringens* may be an interesting alternative to control *Candida* infections related with biofilms and resistant isolates to current antifungals.

Keywords: *Candida spp*., Biofilm, *Stryphnodendron adstringens*, Dispersion cells

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