

**TITLE:** ANTIFUNGAL SUSCEPTIBILITY PROFILE OF CLINICAL ISOLATES FROM VULVOVAGINAL CANDIDIASIS

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## **ABSTRACT**

Vulvovaginal candidiasis (VVC) is an infection of the vulva and vagina that affect about three out of four women, at least once during their life, and 5% of them will develop the recurrent form (RVVC) which is characterized by four or more episodes in a period of one year. *Candida albicans* is an opportunistic pathogen inhabitant of the majority women's vaginal microbiota; however, an imbalance between the host and the normal microbiota can lead to the development of VVC. The aim of this study was to evaluate the antifungal susceptibility profile of clinical isolates of women with different symptomatologies of VVC (asymptomatic, VVC and RVVC). Antifungal susceptibility assay was carried out using broth microdilution method for nystatin and fluconazole in concentrations ranging from 0.125 to 64 µg/µL. A total of 67 *C. albicans* clinical isolates were divided in three groups: 29 isolates asymptomatic, 21 VVC and 17 RVVC. For nystatin, the minimum inhibitory concentration (MIC) was the lowest concentration that presented complete growth inhibition. The MIC for fluconazole was the lowest concentration that inhibited about 50% of growth relative to positive control. Values of MIC<sub>50</sub> and MIC<sub>90</sub> represent concentrations that inhibited 50% and 90% of isolates tested, respectively. The MIC of nystatin for asymptomatic samples ranged between 0.25 to 8.0 µg/µL, for VVC was from 0.25 to 4.0 µg/µL and for RVVC was 0.25 to 16 µg/µL, presenting MIC<sub>50</sub> and MIC<sub>90</sub> in 4.0 µg/µL in all groups. In relation to results of fluconazole, asymptomatic group have MIC ranging from 0.125 to 8.0 µg/µL, VVC have MIC between 0.125 to 0.5 µg/µL and RVVC showed MIC from 0.125 to 64.0 µg/µL. Resistance to fluconazole was observed in one isolate of RVVC (MIC > 64.0 µg/µL). Although the results have shown susceptibility *in vitro* to the most common antifungals used in VVC treatment, the clinical isolates obtained from women with RVVC had a differentiated profile with tendency to resistance to the two antifungal tested. The high prevalence of recurrent cases denote the lack of correlation between *in vitro* results and clinical outcomes due to drug variability, inter-individual characteristics or microorganisms behavior variability in the host.

**Keywords:** Antifungal Susceptibility; *Candida albicans*; Vulvovaginal Candidiasis

**Development Agencies:** CAPES, CNPq