Study of the effect of caspofungin against *Candida* species isolated from *Candida* vaginitis

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**ABSTRACT**

**Introduction:** Vulvovaginal candidiasis (VVC) is a common fungal infection among women during reproductive age with worldwide distribution. *Candida albicans* was accounted as the first agent of VVC followed by *C. glabrata*, *C. tropicalis*, and *C. krusei*. Clotrimazole and fluconazole are two azoles usually prescribed for *Candida* vaginitis. Although, fluconazole was routinely used for the treatment of vaginal candidiasis, the rate of resistance varies in different study, 94%, 76% and 11.8%. Caspofungin is a new echinocandin that used during last two decades for therapy of invasive fungal infections and few reports are available associated to its resistance. The aim of the present study was to evaluate the antifungal effect of caspofungin compared with fluconazole and clotrimazole against VVC agents in vitro.

**Materials and Methods:** The antifungal susceptibility tests with caspofungin, fluconazole and clotrimazole were applied using microdilution and Resazurin dye methods against 34 *Candida* strains including *C. albicans* (30; 88.2%), *C. glabrata* (3; 8.8%) and *C. kefyr* (1; 2.9%) isolated from women suspected with vaginitis.

**Results:** Our study showed that only one isolate of *C. albicans* was resistant to caspofungin at the concentration of 2 µg/mL after 24h incubation and increases to 2 isolates after 48h incubation. MICs50 and MICs90 for all isolates, were found at 1µg/mL. All isolates were sensitive to fluconazole at the MIC ranges 1-0.25 µg/mL. The 88.2% of isolates were inhibited at 0.25 µg/mL of clotrimazole, whereas three isolates were dose dependent and only one isolate resistant to clotrimazole.

**Conclusion:** given to the low frequency of resistance to caspofungin, this echinocandin can potentially be used as the first line therapy for *Candida* vaginitis.