Comparative pathogenicity traits of Candida spp. in pregnant and non-pregnant women with vulvovaginal candidiasis

CARLOS HENRIQUE LOPES ROCHA[1], FLAVIANE MARIA GALVÃO ROCHA[2], GERALDO DUARTE[1], PATRÍCIA PEREIRA DOS SANTOS MELLI[1], GABRIELA SOARES DOS SANTOS[3], MARCIA REGINA VON ZESKA KRESS[2], SILVANA MARIA QUINTANA[1]

[1.] DEPARTMENT OF GYNECOLOGY AND OBSTETRICS, SCHOOL OF MEDICINE OF RIBEIRÃO PRETO, UNIVERSITY OF SÃO PAULO, SÃO PAULO, RIBEIRÃO PRETO, BRASIL
[2.] DEPARTMENT OF CLINICAL ANALYSIS, TOXICOLOGY, AND FOOD SCIENCESSCHOOL OF PHARMACEUTICAL SCIENCES OF RIBEIRÃO PRETO, UNIVERSITY OF SÃO PAULO, SÃO PAULO, RIBEIRÃO PRETO, BRASIL
[3.] RIBEIRÃO PRETO COLLEGE OF NURSING, UNIVERSITY OF SÃO PAULO, SÃO PAULO, RIBEIRÃO PRETO, BRASIL

Vulvovaginal candidiasis (VVC) is highly prevalent among women of reproductive age and is associated with significant clinical discomfort, representing an important public health problem. The high incidence and recurrence of VVC, coupled with antifungal resistance and therapeutic constraints during pregnancy, underscore the need for deeper microbiological investigation. We hypothesize that *Candida* species and their biofilms differ between pregnant and non-pregnant women in virulence and antifungal susceptibility, reflecting adaptive responses. In this study aimed to identify the predominant *Candida* species causing VVC in clinical samples and to compare their antifungal resistance and virulence profiles between pregnant and non-pregnant women. *Candida* spp. isolates were obtained from three groups: pregnant women with VVC (G1), non-pregnant women with VVC (G2), and non-pregnant women with recurrent VVC (G3). Species identification was performed using MALDI-TOF mass spectrometry. Antifungal susceptibility was determined through standardized susceptibility testing, and biofilm formation was assessed by *in vitro* assays. A total of 25 isolates were recovered, with a predominance of *Candida albicans*, followed by *Candida glabrata*, *Candida parapsilosis*, and *Candida tropicalis*. The frequency of VVC was greater among pregnant women than among non-pregnant individuals. Most isolates exhibited reduced susceptibility to one or more antifungal agents, particularly azoles, and these profiles were frequently associated with high biofilm biomass production and moderate to high metabolic activity. These phenotypes were more pronounced among isolates recovered from G3. Hormonal changes during pregnancy, together with prior exposure to antifungal agents, particularly fluconazole, may contribute to the observed resistance and virulence patterns. Taken together, these findings indicate that VVC is predominantly caused by *C. albicans*, including in recurrent and pregnant cases, with isolates exhibiting reduced susceptibility especially to azoles, alongside variable biofilm formation and emerging broader resistance and virulence patterns, reflecting a complex clinical microbiological scenario.

Agradecimentos: CAPES—Finance Code 001, FAEPA and FAPESP.