Molecular identification of *Candida species* associated with Vulvovaginal Candidiasis by using DNA sequencing technique in Mashhad, Iran

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**ARTICLE INFO**

**ABSTRACT**

**Keywords:**
Candida
Candidal vulvovaginitis
*Candida albicans*

**Introduction:** Fungal infections are expanding because of increase in patients with immunodeficiency and vast using of antibiotics and corticosteroids. Probably 75 percent of women with vaginal candidiasis are experiencing at least once in their lifetime. The vaginal candidiasis is the second most common infection of the vagina. Vulvovaginal Candida species such as *C. albicans*, *C. glabrata*, *C. krusei*, *C. tropicalis*, and *C. parapsilosis* is created, but 75 to 90% of vaginal *Candida* infection is *Candida albicans*. Since the number of Candida spp. have inherent resistance to some antifungal drugs, accurate identification of Candida species is necessary in patients with vaginal candidiasis.

**Materials and Methods:** Two hundred fifty specimens of vaginal swabs obtained of the patients suspected to vaginal candidiasis. All specimens were cultured on Sabouraud dextrose agar and then put in 35°C incubator for 48-72 h. One hundred thirty three samples using direct examination and culture test were positive and then germ tube test, CHROMagar *Candida* species and ability to produce chlamydoconidia were identified. Some of the colonies (1 cm²) in 1/5 ml tubes containing distilled water were placed and then DNA was extracted by phenol-chloroform. ITS-rDNA all samples using primers ITS1 and ITS2, PCR and were sequenced.

**Results:** Of 250 specimens of suspected to vaginal candidiasis clinically, 133 cases had positive culture. Fifty two cultures were lost due to contamination to examine by PCR. 81 samples were sequenced that their results are as follows: *candida albicans* (80.2%), *candida tropicalis* (13/6%), *candida glabrata* (2.5%), *candida parapsilosis* (3.7%).

**Conclusion:** In all research conducted on vaginal candidiasis, *Candida albicans* is the most common cause of illness have been reported in this study, like other studies of pathogenic *Candida albicans* was the predominant species.