

## Prevalence and antibiotic resistance pattern of *Candida* spp collected from, pregnant women admitted to health centers in Ardabil, Iran

### Abstract

#### Background and Objectives

Candidiasis is a fungal infection which is caused by genus *Candida* spp. *Candida albicans* is the most common agent of candidiasis. Vulvovaginal candidiasis is a common infection and about 75% of women have experienced it at least once during their lives and up to 5% of these women have had recurrent vulvovaginitis. Vulvovaginal candidiasis in pregnant women is 30% more than non-pregnant women. This illness may cause various side effects during pregnancy among which the most serious one is prematurity, chorioamnionitis, candidal pneumonia, and systemic candidiasis of infants. Due to increasing the resistance in *Candida* spp, continuous epidemiologic studies is necessary in every society. This research was conducted for determining the Prevalence and antibiotic resistance pattern of *Candida* spp collected from, pregnant women admitted to health centers in Ardabil, Iran

#### Materials and Methods

In total, 408 subjects were included in this study. Demographic data and risk factors were recorded using a questionnaire. Two swab samples were taken from vulvovaginal mucus. One swab was used for preparing smear and direct microscopic examination and the second one was used for cultivating of the specimen. *Candida albicans* was identified by germ tube assay and chlamidoconidia production test and other species were identified using Chromagar medium. Antimicrobial resistance pattern was determined by disk diffusion method against fluconazole, ketoconazole, clotrimazole, nystatin and amphotericin B. Results were interoperated according to CLSI guidelines. The data were analyzed by Chi2 and t-test using SPSS 19.

**Results:** Out of 408 subjects, 143 cases (35%) were positive for candida spp. The *Candida albicans* with 119 (83.2%) cases was the most prevalent species followed by *Candida glabrata* 11 (7.7%), *Candida krusei* 7 (4.9%), *Candida parpsilosis* 3 (2.1%), *Candida tropicalis* 2 (1.4%) and 1 (0.7%) specimen was included more than one species.

According to disk diffusion test, overall 116 (81.1%) isolates were resistant to fluconazole, 100(69.9%) to ketoconazole, 67 (46.9%) to clotrimazole, 25 (17.5%) to amphotericin B. Majority of the candida spp 118 (82.5%) were sensitive to nystatin. For *Candida albicans* 97(81.5%) isolates were resistant to fluconazole and 99(83.2%) sensitive to nystatin. For *Candida glabrata* 10 (90.9%) were resistant to fluconazole, and 9(81.8%) sensitive to

nystatin.

**Conclusion:**

According to the results of this study vulvovaginal candidiasis is prevalent among pregnant women in Ardabil and isolates were significantly resistant against commonly used antibiotics. As antibiogram for fungal agents is not routinely performed, the result of this study could be used to choosing appropriate antibiotics in empiric therapy of vulvovaginal candidiasis.

**Keywords:** Candidiasis, Vulvovaginitis, pregnant women, Ardabil