

# Retrospective Analysis of Culture Results of Cases with Acute Vulvovaginitis: University Experience

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**OBJECTIVE:** To analyse the results of the vaginal cultures and find out the prevalence of pathogens in patients with acute vulvovaginitis, retrospectively.

**STUDY DESIGN:** Vaginal cultures results of patients with the diagnosis of acute vulvovaginitis were analyzed retrospectively between June 2005 and January 2006.

**RESULTS:** Totally 241 patients were included in the study within 6 months time period. Mean age of patients was 30,63±6,87 changing between 19 and 57 years. While there was no pathogen detected in 18,3% (44/241) of vaginal cultures, various pathogens grew in 81,7% (197/241) of cultures. Normal vaginal flora was detected in 70,6% (139/197) of cultures with growth. The second most common pathogen was *Candida* subspecies with a rate of 14,2% (28/197). Other pathogens were *Candida albicans*, *E.coli*, *Gardnerella vaginalis*, *Klebsiella pneumoniae*, *Candida* subspecies and *Klebsiella*, *Candida albicans* and *Klebsiella*, *Candida albicans* and *Gardnerella vaginalis* with a rate of %7,1 (14/197), %4,1 (8/197), %2 (4/197), %0,5 (1/197), %0,5 (1/197), %0,5 (1/197) and %0,5 (1/197) respectively.

**CONCLUSION:** The most frequent pathogen detected in culture of patients with acute vulvovaginitis was *Candida* subspecies in our clinic.

**Key Words:** Vulvovaginitis, Vaginal culture, Pathogen

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## Introduction

Acute vulvovaginitis is a frequent morbidity of all women through out their lives. It is defined as the spectrum of conditions that cause vulvovaginal symptoms such as itching, burning, irritation and abnormal discharge. It has different etiologies in different geographic locations. In India, for the women in child bearing age, the most common diagnosis was found to be bacterial vaginosis with a rate of 19,1%.<sup>1</sup> In USA also the most common vaginitis in symptomatic patients was bacterial vaginosis (22-50%) followed by vulvovaginal candidiasis (17-39%) and trichomoniasis (4-35%).<sup>2</sup> In Greece the most common pathogen was *Candida albicans* (42,5%) followed by *Gardnerella vaginalis* (40%).<sup>3</sup> We aimed to analyse the results of the vaginal cultures and find out the prevalence of pathogens in patients with acute vulvovaginitis in Eastern part of Turkey.

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## Material and Method

This was a retrospective study of patients who had the diagnosis of acute vulvovaginitis between June 2005 and January 2006. We evaluated the age, gravity, marriage status, menopausal status, socioeconomic status, presenting symptoms, contraception use, preceding antibiotic use, presence of diabetes mellitus, presence of recurrent vaginitis, findings of speculum examination and the results of vaginal cultures. Microbiology laboratory culture results were reviewed for the vaginal culture results and the data were collected from patient files. Ages of patients were recorded from the microbiology files. All the data were noted and analyzed.

## Results

A total of 241 vaginal culture results were found from microbiology laboratory files within the 6 months period. We could reach only the 115 archived files out of 241 patients. The mean age of patients was 30,63±6,87 (19-57 years). The median gravity was 3 (0-12). Primigravity was 8,3% (20/113), multigravity was 45,1% (51/113), grand multigravity was 25,7% (29/113) and great grand multigravity was 4,4% (5/113). Ninety four point seven percent of patients (108/114) were married and 69,6% (80/115) of patients were belonging to low socioeconomic group. Only two out of 112 patients

(1,8%) were menopausal. Sixty-eight point seven percent of patients (79/115) were not using any contraception method, while 15,7% (18/115) were using coitus interruptus, 7% (8/115) were using condom, 4,3% (5/115) were using oral contraceptives, 3,5% (4/115) were using intrauterine device and 0,9% (1/115) was using tubal ligation as the contraceptive method. Thirty-four point five percent of patients (39/113) were symptomatic (discharge, odor and/or itching) at the time of admission, while 65,5% (74/113) of patients had no complaint and were diagnosed during speculum examination incidentally. Twenty-seven point eight percent of patients (32/115) had a history of diabetes mellitus, 9,6% had preceding antibiotic use and the 15,8% (18/114) had recurrent vaginitis. At the speculum examination candidial discharge was diagnosed in 38,9% (44/113) of patients, bacterial discharge was diagnosed in 31,9% (36/113) and mix bacterial and candidial discharge was diagnosed in 29,2% (33/113) of patients. There was no colonization in the vaginal culture in 18,3% of cases (44/241), while in 81,7% of cases (197/241) various microbiological pathogens were determined. In 70,6% of positive vaginal cultures (139/197) normal vaginal flora was diagnosed, while in 14,2% (28/197) *Candida* subspecies, in 7,1% (14/197) *Candida albicans*, in 4,1% (8/197) *Escherichia coli*, in 2% (4/197) *Gardnerella vaginalis*, in 0,5% (1/197) *Klebsiella pneumoniae*, in 0,5% (1/197) *Candida* subspecies and *Klebsiella*, in 0,5% (1/197) *Candida albicans* and *Klebsiella* and in 0,5% (1/197) *Candida albicans* and *Gardnerella vaginalis* was diagnosed. Totally in 21,3% of cases vulvovaginal candidiasis, in 6,6% bacterial vaginitis and in 1,5% mix vulvovaginitis were diagnosed.

## Discussion

There are differences in the etiology of vaginitis based on the geographic location of the study due to various factors, such as personal hygiene, sexual behaviour, use of different contraceptive methods, and religious or ethical cultures. In our retrospective study of cases with acute vulvovaginitis either symptomatic or not, the most common pathogen was yeasts with a rate of 21,3 (candida subspecies: 14,2%, candida albicans: 7,1%). Bacterial vaginosis rated second in alignment having the most common pathogen *Escherichia coli* (4,1%) followed by *Gardnerella vaginalis* (2%).

In a study conducted in Turkey by Açıkgöz et al<sup>4</sup> most isolated pathogens were *Candida* spp, *Gardnerella vaginalis*, *Trichomonas vaginalis*, Group B *Streptococcus* spp and Gram-negative bacilli counted as 26,8%, 13,8%, 2,2%, 2% and 6,5% respectively.

Lavazzo et al<sup>3</sup> conducted a retrospective study for the analysis of isolates from patients with vaginitis in Greece which is a neighborhood country of Turkey. The most frequently isolated pathogens were yeasts, especially *Candida* al-

bicans (42,5%), followed by anaerobes, mainly *Gardnerella vaginalis* (40%). The third most frequent pathogen was *Trichomonas vaginalis* (8%).

Our results were similar with the studies conducted in mediterenian region in that, the most frequent pathogen causing vaginitis was yeasts. This can be explained by climatic conditions of the region, overuse of antibiotics (9,6%) and presence of comorbidities such as diabetes mellitus (27.8%). However although most of the patients belonged to low socioeconomic status (69,6) the rate of *Gardnerella vaginalis* was lower than the both studies and although only 7% of patients used barrier methods in contraception and 68,5% used no contraceptive methods, we didn't isolate *trichomonas vaginalis* in cultures. In this study we didn't evaluate the personal hygiene habits and sexual behavior, but social characteristics of population in Turkey being muslim and monogamism may explain these findings.

The most frequent pathogen detected in culture of patients with acute vulvovaginitis was candida subspecies in Eastern region of Turkey.

## Akut Vulvovajinitli Hastalarda Vajinal Kültür Sonuçlarının Retrospektif Analizi: Üniversite Deneyimi

Akut vulvovajinit tanısı almış hastalarda vajen kültür sonuçlarını ve etkenlerin görülme sıklığını retrospektif olarak incelemek. Haziran 2005-Ocak 2006 tarihleri arasında akut vulvovajinit tanısı konulan hastalardan alınan vajen kültür sonuçları retrospektif olarak incelendi.

Altı aylık süre içerisinde toplam 241 hasta çalışmaya dahil edildi. Hastaların ortalama yaşı 30,63±6,87 idi ve 19 ile 57 arasında değişmekte idi. Alınan vajen kültürlerinin %18,3'ünde (44/241) üreme olmaz iken % 81,7'sinde (197/241) üreme tespit edildi. Üreme olan vajen kültürlerinin %70,6'sında (139/197) normal vajen florası üredi. İkinci sıklıkta %14,2 (28/197) oranında *Candida* subspecies ürediği görüldü. Üreyen diğer etkenler sırası ile %7,1 (14/197) *Candida albicans*, %4,1 (8/197) *E.coli*, %2 (4/197) *Gardnerella vaginalis*, %0,5 (1/197) *Klebsiella pneumoniae*, %0,5 (1/197) *Candida* subspecies ve *Klebsiella*, %0,5 (1/197) *Candida albicans* ve *Klebsiella* ve %0,5 (1/197) *Candida albicans* ve *Gardnerella vaginalis* idi.

Kliniğimizde akut vulvovajinit tanısı alan olgularda, vajen kültüründe en sık *Candida* alt türleri üremiştir.

**Anahtar Kelimeler:** Vulvovajinit, Vajinal kültür, Patojen

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