INCIDENCE OF BACTERIAL FLORA IN VULVOVAGINITIS

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Summary

Vulvovaginitis is the vagina and vulva inflammation caused by: sexually transmitted pathogenic species, species belonging to the commensal flora, chemical, mechanical, hormonal factors, intimate hygiene deficiencies. This study was conducted on 300 women aged between 16 and 60 years, who had clinical symptoms of vulvovaginitis. Vaginal smears were made, were stained using the Pick-Jacobson method, and were examined under a microscope to determine and identify potential pathogens involved in vulvovaginitis. Based on the analysis of the blades bacterial flora of grade IV form the genus Candida and Trichomonas was identified. Increased incidence of bacterial flora of the fourth degree, genus Candida and Trichomonas was found in age limits of 20-40 years age. Possible causes could be: sexually active life, the presence of many partners, failure to follow intimate hygiene rules, not using protection methods against sexually transmitted diseases. Few patients with ages under 20 and patients of 50-60 years old presented the bacterial flora of grade IV, Candida albicans and Trichomonas vaginalis, which may be due to the following reasons: not an active sex life, a stable partner, barrier contraceptive methods in order to protect from sexually transmitted disease, a well - developed immune system to women under 20 years old. Incidence of pathogens in subjects analyzed was: grade IV bacterial flora in 57.30% of cases, followed by representatives of the genus Candida in 28.13% of cases, like Trichomonas in 14.30% of cases. From the studied patients, 21% had double contamination, 6.7% had the bacterial flora of grade IV and Candida albicans, 14.3% had bacterial flora of grade IV and Trichomonas vaginalis.

Key words: vulvovaginitis, bacterial flora, incidence

Introduction

Vulvovaginitis means mucosal inflammation of the vagina, which is due to sexually transmitted pathogens or agents of the opportunistic flora (commensals). But it is also due to chemical, mechanical, allergic, hormonal factors or intimate hygiene deficiencies. Usually, women go to see a gynecologist because of vulvovaginitis - 1/3 of the patients present symptoms related to vulvovaginitis infections (Ciuc, 1986). Incriminated pathogens are varied. They may be microbial, fungal or parasitic. A mixed etiology may also be found frequently.

Vulvovaginitis caused by Trichomonas vaginalis is a venerian disease, diagnosed mainly in urban areas. However, the fact that virgins are also diagnosed with this disease, does not mean that it should be considered only a venerian disease. The main symptom is white vaginal liquid (Wilson et al., 2003).

Resistance to treatment with metronidazole, in the case of pathogen agent, Trichomonas vaginalis, may be established at a relatively low number of patients who suffer from this disease. Patients resistant to Trichomonas vaginalis should be diagnosed by viewing the pathogen in the saliva or urine. If case of
any resistance, it is recommended to change the medicine and take tinidazol and a cream with paramomicina (Nyirjesy, 1999).

Comparative studies on genotoxic effects of metronidazole and nalidixic acid in the treatment of vaginal infections with *Trichomonas vaginalis* were performed on 20 patients who had vulvovaginitis. The conclusion was that, although it is frequently suggested for genital infections with *Trichomonas vaginalis*, nalidixic acid has a potential genotoxic effect. Therefore, the administration of it should be limited when it comes to pregnant women (Akyol et al., 2000).

The hemolytic activity of *Trichomonas vaginalis* was also tested in order to determine the effect it produces on the infected body. It has been established that it is an effective way to obtain nutrients for the pathogen, but it's also a way to allow investigation of the method used by *Trichomonas vaginalis*, on how it destroys the cell membranes (Rosset et al., 2002).

There is an association between sexually transmitted infections in young women with vulvovaginitis and lower abdominal pain, abnormally colored vaginal discharge, a positive urine culture, and an abdominal ultrasonographic evidence compatible with pelvic inflammatory disease (Velarde-Jurado et al., 2002; Velarde-Jurado et al., 2003).

To conclude, VVC caused by *C. albicans* as well as nonalbicans species of *Candida* is quite prevalent in women of childbearing age of our region. Its significant association with certain epidemiological factors underscores the need for educating women regarding genital hygiene, use of well ventilated cotton underclothing and importance of accurate diagnosis and prompt treatment. There is also need for constant surveillance studies so that the incidence of infections caused by nonalbicans species of *Candida* could be kept under check (Jindal et al., 2007).

Prevalence of *Candida albicans* and bacterial vaginosis in our study compared favorably with a lot of studies from some other western countries, but differed from some of the reports from the underdeveloped/developing countries where high rates prevail. Prevalence of *Candida albicans* and bacteria vaginosis among asymptomatic pregnant women was 12.5 and 3.54%, respectively (Akerere et al., 2002; Akinbiyi et al., 2008).

With the results obtained Souza et al. (2009) it was noticed that the socio-economical level does not seem to influence the epidemiology of the *Candida* sp. and pointed to a balance in terms of numbers of this agent in Maringá, Paraná, Brazil.

The purpose of this study is to identify the following pathogens: the IV - th level bacterial flora, *Trichomonas vaginalis* and *Candida albicans*, vaginal secretions collected from 300 female patients and to establish the incidence of these pathogens at women who were diagnosed with vulvovaginitis.

**Material and methods**

The study has been conducted on 300 female patients. Vaginal smears were made. Patients were under the following age limit: under 20 years, 20-30 years, 30-40 years, 40-50 years and 50-60 years old. Vaginal secretion has been taken from them by a doctor, specialist in ginecology. The vaginal smears has been made. After drying, the obtained vaginal smears were subjected to the Pick-Jacobson staining method (by this coloring technique all pathogens turn into a blue-violet hue). Vaginal smears coloured through the Pick-Jacobson method were examined on the microscope, in order to determine the potential pathogen agents responsible for vulvovaginitis and to establish a proper diagnosis from the gynecological tests.

The coloured smear examination is very important, because it allows to determine: whether the fluid is the result of an inflammatory polinuclear process, in order to diagnose Trichomonase, Candidose, bacterial flora, etc..
The candidose diagnosis is based on the existence of levuriform cells, ovoid or spherical, pseudomicelian and polinuclear forms (Schäffler and Altekrüger, 1994), (Negrut and Rusu, 1981). In case of a vulvovaginitis Trichomonas diagnosis, we can observe the parasite's flagellate cells and the corrugated membranes (Schäffler and Altekrüger, 1994; Buiuc et al., 1999; Carpenter and Plum, 1999). The bacterial flora of grade IV is diagnosed by the presence of a large number of coccus, more than they usually are, causing a local infection (Ciuc, 1986; Buiuc et al., 1999).

**Results and discussions**

Analyzing values obtained for the pathogen types present in the vaginal lining, causing vulvovaginitis, we established that the IV th level bacterial flora is the most dangerous (57.30%), followed by the *Candida albicans* (28.13%) and *Trichomonas vaginalis* (14.30%) (fig.1). Few patients with ages under 20 and patients of 50-60 years old presented the bacterial flora of grade IV, *Candida albicans* and *Trichomonas vaginalis*, which may be due to the following reasons: not an active sex life, a stable partner, barrier contraceptive methods in order to protect from sexually transmitted disease, a well-developed immune system to women under 20 years old.

According to a possible association between specific pathogen agents of vulvovaginitis, we discovered that certain patients had a double contamination. The most common association is between fourth level bacterial flora and *Candida albicans* and between the bacterial flora of grade IV and *Trichomonas vaginalis*. From the studied patients, 63 had double contamination (21%), 6.7% had the bacterial flora of grade IV and *Candida albicans*, 14.3% had bacterial flora of grade IV and *Trichomonas vaginalis* (fig. 2). Laboratory analysis of vaginal secretions have an important role in the early detection of vulvovaginitis. It also has an important role when it comes to the appropriate recommendation by the gynecologist. Identification and treatment of these pathogens is important for reducing the risks during pregnancy and to prevent infertility.

**Conclusions**

The incidence of pathogens at studied patients is the following: bacterial flora of grade IV in 57.30% of cases, followed by representatives of the *Candida albicans* with 28.13% and those of the *Trichomonas vaginalis* with 14.30%. Vaginal infections caused by the fourth level bacterial flora are often associated
with other pathogenic species, namely 15% with *Trichomonas vaginalis*, and 6.33% with *Candida albicans*. Microorganisms who belong to the fourth level bacterial flora, to the *Candida albicans* and *Trichomonas vaginalis* may cause vaginal inflammation. Untreated at certain patients it led to difficulties of pregnancy and infertility.

**References**


