



# TO STUDY SENSITIVITY OF CONDITIONALLY PATHOGENIC VAGINAL MICROFLORA IN WOMEN WITH ASSOCIATED CHLAMYDIA-TRICHOMONADE INFECTION TO ANTIBIOTICS OF DIFFERENT GROUPS

**Zhanabayeva Aziza Kuuanysbbaevna**

Master of the 2nd Course in Microbiology

**Kurbanova Sanobar Yuldashevna**

Ph.D. Associate Professor, Department of Microbiology and Pharmacology Tashkent State Dental Institute

**Absattarova Venera Koshkarbaevna**

Ph.D. Heads of the department, Department of Epidemiology and Infectious Diseases, Medical Institute of Karakalpakstan

## ANNOTATION

*The microecological state of the reproductive tract of women with associated chlamydial-Trichomonas infection was studied. In sick women there was an increase in the frequency of isolation of opportunistic microorganisms with pronounced persistent properties from 8.7% in women in the comparison group to 38.8%, chlamydia 67.3% and in patients with mixed infection 59.1%. At the same time, the percentage of women with lactoflora deficiency among patients with chlamydia (24.1%) and patients with trichomoniasis in combination with chlamydia (9.1%) was lower than the percentage of women with lactoflora deficiency in the comparison group (34.8%).*

**KEY WORDS:** bacterial vaginosis; vaginal microbiota; anaerobic microflora; diagnostics.

## INTRODUCTION

Bacterial vaginosis is a polymicrobial clinical non-inflammatory syndrome resulting from the replacement of normal vaginal microflora (Lactobacillus spp.) With anaerobic flora in high concentrations (Bacteroides / Prevotella spp., Mobiluncus spp., Veillonella spp., Gardnerella vaginalis) vaginalis It should be noted that more than 200 types of microorganisms can be associated with the development of bacterial vaginosis, and therefore the identification of all possible bacteria is not possible. Moreover, a number of studies have shown that the species composition of the microflora is unique in each patient with bacterial vaginosis.

## THE AIM OF THE STUDY

To determine the microecological state of the reproductive tract of women with associated chlamydial-Trichomonas infection.

## MATERIALS AND RESEARCH METHODS

To solve the set tasks, 72 women of reproductive age were examined, of which 20 women made up the comparison group, 30 women were patients with chlamydia (mono-infection) and 22 women were patients with trichomoniasis in combination with urogenital chlamydia. The material for the study was vaginal discharge, which was taken from the posterior fornix of the vagina, then the material was immersed in a liquid transport medium, then serial dilutions were prepared from it at a rate of



10: 1 (volume / weight) and 0.1 ml was sown on selective nutrient media.

When growth appeared, the total number of colonies and microbes of each species was counted separately, expressing the degree of colonization in CFU / ml. The isolated bacterial cultures were identified based on the study of morphological, tinctorial, and biochemical properties. The species identification of the isolated pure cultures of bacteria was carried out according to generally accepted methods using the Burgey nomenclature and information summarized in the guidelines on clinical microbiology. To isolate the spectrum of facultative anaerobic microorganisms and determine their quantitative characteristics, agar was used with the addition of 5% donor blood. To isolate staphylococci, a nutrient medium - yolk-salt agar was used, which allows more clearly than blood agar to differentiate pathogenic and non-pathogenic strains of staphylococcus. To isolate lactobacilli, the MRS medium was used. The incubation was carried out in an anaerostat with a gas mixture at a temperature of +37 °C for 48 hours.

## RESEARCH RESULTS AND THEIR DISCUSSION

Studies of the species composition of the vaginal microflora revealed that Chlamydia-Trichomonas infection is characterized by changes in the microbiocenosis, accompanied by an increase in species diversity, the appearance or increase in the proportion of microorganisms unusual for the vaginal biotope, and the elimination or decrease in the proportion of the autochthonous component of the microbiota. Thus, the proportion of lactobacilli in the spectrum of aerobic microflora decreased from 38.5% in healthy people to 33.2%, with chlamydial infection 25.2% and in women with combined chlamydial-Trichomonas infection 24.2%. The content of corynebacteria also decreased and amounted to 8.5% in the group with combined chlamydia-Trichomonas infection, 9.2% in chlamydia compared with 15.4% of strains isolated from healthy ones. At the same time, there was an increase in the proportion of enterobacteria and coagulase-positive staphylococci in women with chlamydial infection to 13.5% and 5.7%, in women with mixed infections up to 10.1% and 6.7% compared with healthy women in whom the proportion of these microorganisms accounted for 3.1% and 1.5%. There was an increase in the proportion of enterococci in women (14.3%), compared with healthy (7.7%).

Changes were also revealed in the anaerobic component of the microbiocenosis. Thus, the proportion of eubacteria and bifidobacteria in the norm was 50.0% and 15.0%; in patients, elimination of bifidobacteria was noted, and a decrease in the proportion of eubacteria to 22.8%, 44.8% and 5.6%, respectively. In the spectrum of anaerobic microflora in

women with associated chlamydial-Trichomonas infection, peptococci 3.6%, 3.5% and peptostreptococci - 13.6%, 6.9% were noted. Bacteroids in the structure of anaerobic microorganisms of the vaginal biotope occupied a significant proportion, which was 25.0% in women in the comparison group, and 34.4% in patients. The share of fusobacteria was the highest in women with chlamydia (13.6%) and in women with Trichomonas infection in combination with chlamydia (11.1%), in healthy people this figure was 10.0%.

Thus, the species composition of the vaginal microbiocenosis in women with microecological disorders of chlamydial infection compared with healthy women was characterized by a decrease in the frequency of isolation of lactobacilli and corynebacteria, an increase in the number of isolated coagulase-positive staphylococci and, to a large extent, enterobacteria. In the species structure of anaerobic vaginal microflora, changes were associated with the elimination of bifidobacteria and a decrease in the number of eubacteria. The frequency of isolation of fusobacteria increased, and the appearance of anaerobic cocci (peptococci and peptostreptococci) among the isolates was also observed.

From the presented data, it follows that chlamydial infection such as vaginitis and inflammatory diseases of the uterine appendages and chlamydia-trichomoniasis in combination with inflammatory diseases of the uterine appendages were accompanied by a significant decrease in the incidence of the normal state of microbiocenosis to 13.0%, 7.7% and 4.5% respectively, compared with 50.0% in healthy people.

At the same time, there was an increase in the frequency of isolation of opportunistic microorganisms with pronounced persistent properties from 8.7% in women in the comparison group to 38.8%, chlamydia 67.3% and in patients with mixed infection 59.1%. At the same time, the percentage of women with lactoflora deficiency among patients with chlamydia (24.1%) and patients with trichomoniasis in combination with chlamydia (9.1%) was lower than the percentage of women with lactoflora deficiency in the comparison group (34.8%).

The next stage of research was to study the sensitivity to modern antibacterial drugs of opportunistic microorganisms sown from patients.

The sensitivity of opportunistic microorganisms was studied using media prepared on the basis of the Muller-Hinton medium. The results obtained showed that there was a significant difference in the diameters of the growth inhibition zones on the specified medium.

We studied the sensitivity of isolated microorganisms to eleven antibiotics most widely used in practical healthcare (erythromycin, azithromycin, rifampicin, cefazolin, ceftriaxone, gentamicin, ofloxacin, pefloxacin, ciprofloxacin, levofloxacin,



sparfloxacin). The strains were resistant to 1st generation cephalosporins; to gentamicin - 4.4%, sensitive to ceftriaxone -79.2%). There was no increase in the number of strains resistant to ciprofloxacin, pefloxacin, ofloxacin, and azithromycins. An increase in erythromycin resistant (10.9%), moderately resistant to

rifampicin was revealed. Obligate anaerobic strains (peptococci, peptostreptococci and bacteroids) were resistant to 1st generation cephalosporins, highly sensitive to other cephalosporins, levofloxacin and sparfloxacin.

Evaluating the results of the work performed, it can be assumed that chlamydial infection is characterized by a change in the associative symbiosis of the reproductive tract of women, manifested by a deficiency of the dominant microflora, microecological changes in the vaginal biotope in combination with mixed infections are factors of recurrence of inflammatory diseases of the uterine appendages.

## CONCLUSIONS

1. Patients with chlamydia in the vaginal biotope showed a decrease in the proportion of lactobacilli, bifidobacteria and eubacteria, an increase in the proportion or appearance of enterobacteria, streptococci, enterococci, peptostreptococci, peptococci.
2. Mixed infection in the vaginal biotope is a factor in the recurrence of inflammatory diseases of the uterine appendages.
3. Opportunistic pathogenic strains isolated from sick women were resistant to 1st generation cephalosporins; to gentamicin - 4.4%, sensitive to ceftriaxone -79.2%). Anaerobic strains (peptococci, peptostreptococci and bacteroids) were resistant to 1st generation cephalosporins, highly sensitive to other cephalosporins, levofloxacin and sparfloxacin.

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