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THE SPREAD OF UROGENITAL MYCOPLASMOSIS (MYCOPLASMA HOMINIS, UREAPLASMA UREALYTICUM) IN WOMEN

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Annotation

The article is devoted to the study of the spread of urogenital mycoplasmas (Mycoplasma hominis, Ureaplasma urealyticum) in women with and without sexually transmitted infections. These microorganisms were significantly more often detected in women with STIs. With syphilis, mycoplasmas were detected with a frequency of 41.9%, with trichomoniasis - 29.7%, with gonorrhea - 19.5%. The frequency of detection of urogenital mycoplasmas in all STIs was higher in the age group of 20-39 years. It was concluded that genital mycoplasmas were commensals of the urogenital tract. In association with other microorganisms (causative agents of STIs), they can cause inflammation of the urogenitals.

Key words: urogenital mycoplasmas, prevalence, sexually transmitted infections.

There are still discussions about the role of Mycoplasma hominis and Ureaplasma urealyticum in the development of inflammatory diseases of the genitourinary organs in both women and men. A number of researchers believe that these microorganisms can cause the development of

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inflammatory processes in the organs of the genitourinary system, causing vulvovaginitis, salpingitis, and other types of pathology in women [5]. At the same time, a number of authors express doubts about the role of mycoplasmas in the development of the pathological process of the urogenital tract and consider these microorganisms to be commensals.

Only with regard to Mycoplasma hominis is known that it is a pathogenic microorganism capable of causing urethritis in both sexes, as well as cervinitis in women. Other mycoplasmas (U.urealyticum, U. Parvum, M. homonis) are present on the mucous membranes and in the secretions of the urogenital tract in 40–80% of practically healthy individuals of reproductive age [1]. U.urealyticum is a conditionally pathogenic microorganism, the implementation of pathogenic properties of which occurs under certain conditions, capable of causing urethritis in men and cystitis in women.

In association with other pathogenic and / or conditionally pathogenic microorganisms, this type of ureaplasma can be involved in the development of various pathological conditions, including bacterial vaginosis, vaginitis, cervicitis, PID, pregnancy complications, postpartum and postabortion complications. The role of U. parvum in the etiopathogenesis of inflammatory diseases of the urogenital system has not yet been established. M. hominis is a conditionally pathogenic microorganism, the realization of pathogenic properties of which occurs under certain conditions [7].

Factors provoking the development or exacerbation of the infectious process during colonization with mycoplasmas and/or ureaplasmas can be an attached bacterial, chlamydial, viral infection, changes in the hormonal background, and the immune status of the body [6,10].

Today, there are no unified methods for identifying individual unified methods for identifying certain types of mycoplasmas, there is no comparative description of the diagnostic capabilities of existing methods, clear criteria for their use in the control of cure [2,11]. To date, there is no generally accepted concept of the pathogenesis of urogenital mycoplasmal infection, which largely explains the imperfection of methods for its treatment and prevention of recurrence of the disease [3,9].

The aim of our study was to study the spread of urogenital mycoplasmas in patients with and without sexually transmitted infections.

Material and methods

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The study was carried out from December 2022 to January 2023 at the Intermed Innovation clinic in Tashkent. We studied the frequency of detection of urogenital mycoplasmas in 114 women with various nosological forms of urogenital pathology and 36 practically healthy women (Table 1).

Table 1. Nosological forms of urogenital pathology in women. Examined for the presence of urogenital mycoplasmas

Nosological forms of urogenital pathology in women	Abs.number
STI, Including: - gonorrhea - syphilis Trichomoniasis	31 17 4 9
Various inflammatory diseases of the urinary tract, Including: - vulvovaginitis, salpingitis, cervical erosion - urethritis - pyelonephritis - cystitis - urolithiasis disease	83 61 8 7 4 3
Practically healthy women	4

The materials for the study were vaginal discharge, cervical canal, urethra in women, urethral discharge in men, as well as the first portion of freely released urine in women and men.

For the detection of Ureaplasma urealyticum and Mycoplasma hominis, enzyme-linked immunosorbent assay (ELISA) was used in combination for comparison with other assays. Mycoplasmas were tested using test systems Mycoplasma hominis IgG and Ureaplasma urealyticum IgG Vector Best (Novosibirsk, Russia), Mycoplasma hominis IgM and Ureaplasma urealyticum IgM Imbian (Russia) in combination with polymerase chain reaction (PCR) and microscopy.

Results

As a result of the study, it was revealed that the prevalence of some STIs among men and women who turned to gynecologists, dermatovenereologists and urologists in Tashkent is as follows: trichomoniasis 27.1%, chlamydia

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24.3%, gonorrhea 8.2%. As for mycoplasmas, among these patients they were detected with a frequency of 17.5%. Figure 1 shows the structure of STIs in Tashkent.

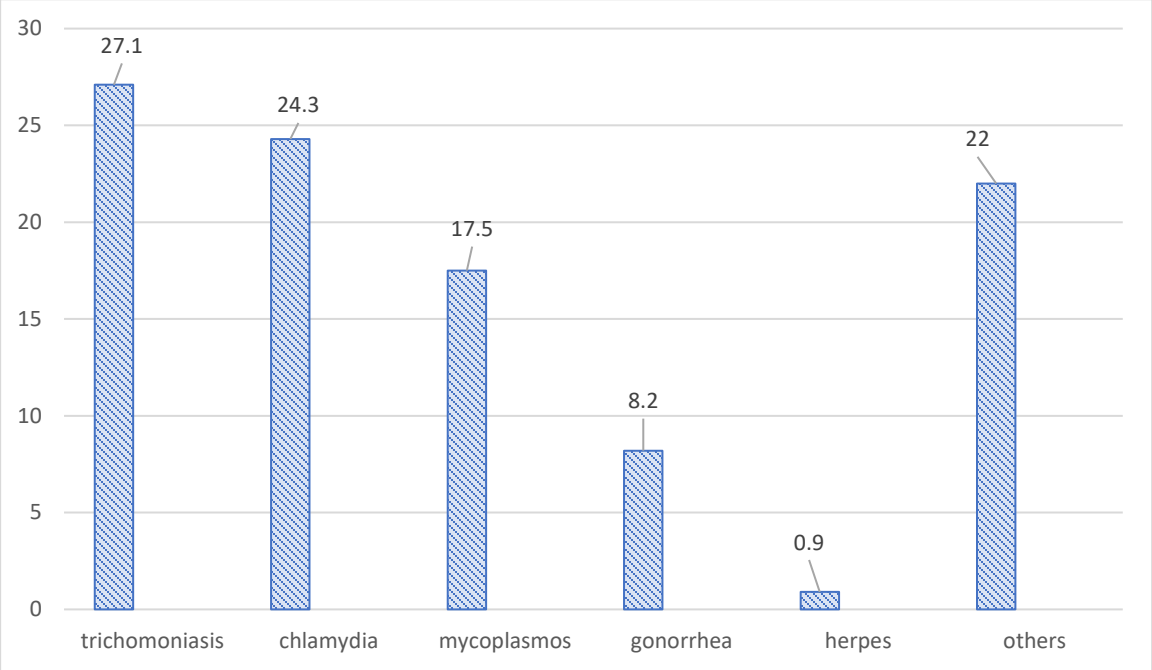

Figure 1. Structure of STIs in Tashkent

In healthy women, chlamydia was isolated in 1.9% of cases, with various urogenital pathologies in 29.6-43.8% of cases.

In 308 patients with STIs, we studied the frequency of detection of urogenital mycoplasmas and ureaplasmas, depending on the nosological form of the disease. The frequency of detection of mycoplasmas was 25.6 ± 2.4% (79 out of 308). When comparing the frequency of detection of mycoplasmas from the urogenital tract of patients with STIs and without STIs, it was found that these microorganisms were detected significantly more often in patients with STIs.

The frequency of isolation of urogenital mycoplasmas in patients with non-gonococcal urethritis was 37.2±6.8% (19 out of 51), in the presence of inflammatory diseases of the genitourinary tract - 24.6±5.0% (18 out of 73).

It should be noted that especially often urogenital mycoplasmas were detected in patients with HIV/AIDS - 73.7±10.1% (14 out of 19). In these patients, mycoplasmas and/or ureaplasmas were detected 3.89 times more often than in gonorrhea.

Considering the fact that mycoplasmas were more often detected in the age group of 20–39 years, we compared the ratio of the number of patients

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not infected with mycoplasmas and / or ureaplasmas to 1 infected, depending on age among 166 who consulted a doctor (Fig. 2). in total there were 54 infected with mycoplasmas and 112 uninfected (ratio 2.07). In the age group of 16–19 years, there were 43 people not infected with mycoplasmas and/or ureaplasmas, and 18 people were infected, the ratio was 2.38.

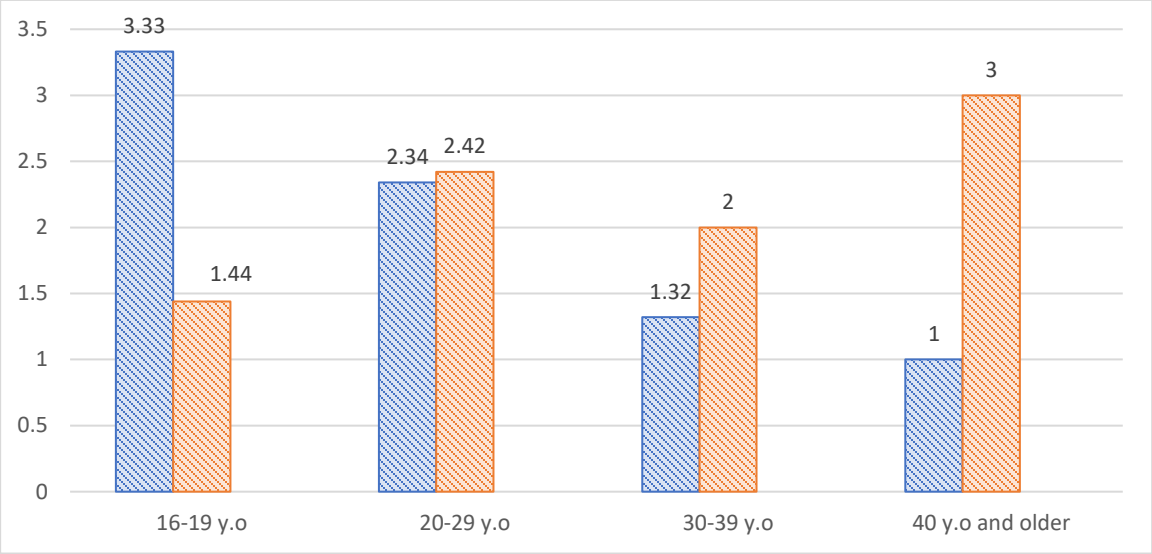

Figure. 2. 1-pillar. (blue) The ratio of non-infected to mycoplasma-infected patients in different age groups with STIs.

2-pillar (orange) The ratio of non-infected to mycoplasma-infected patients suffering from non-specific inflammatory diseases of the urogenitals in different age groups.

At the age of 20–29 years, there were 42 uninfected, 19 infected, the ratio was 2.21. In the age group of 30-39 years, respectively, 20 and 13 people, the ratio was 1.54, and in the age group of 40 years and older - 7 and 4, and the ratio was 1.75. Thus, among patients suffering from pathology of the urogenital system, most often mycoplasmas were detected in the age group of 30-39 years.

On fig. 3 shows the ratio of non-infected to mycoplasma-infected patients in different age groups among women with STIs. at the age of 16–19 years, this ratio was 3.33. With age, this coefficient decreases, that is, the number of women infected with mycoplasmas increases.

A different picture was found in women with nonspecific inflammatory diseases of the urogenitals. Thus, mycoplasmas and / or ureaplasmas among patients with inflammatory diseases of the genitals (vulvovaginitis, cervinitis), as well as bacterial vaginosis, were more common

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in the age group of 16–19 years. The ratio of patients in whom mycoplasma or ureoplasma were detected and not detected is 1:1.4; while in the age group of 40 years this ratio was 1:3 (Fig. 3).

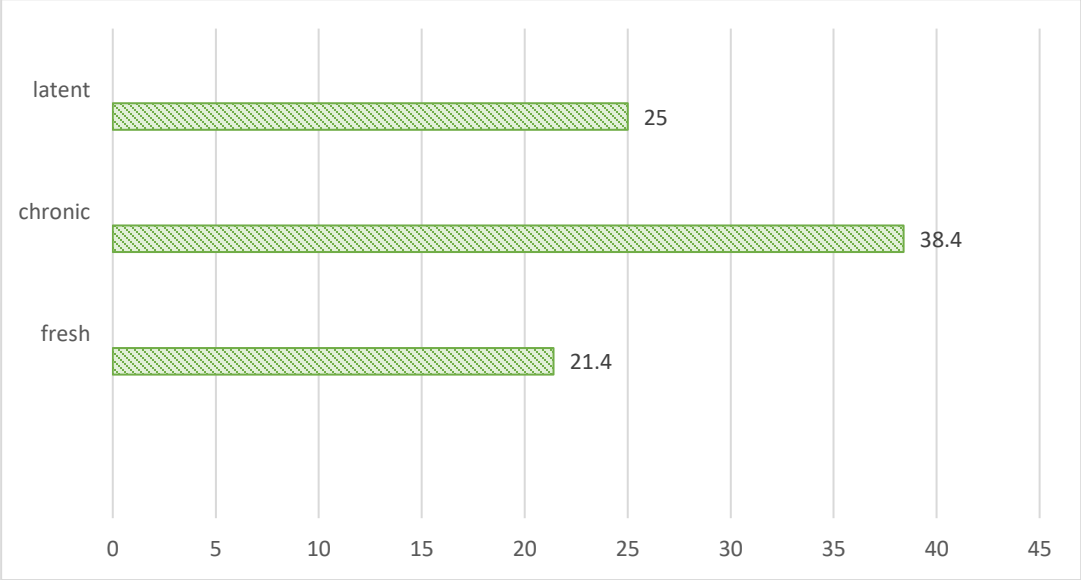

Fig. 3. Detection of mycoplasmas in various forms of gonorrhea (%).

In 74 women with gonorrhea (56 fresh, 14 chronic and 4 latent), we studied the frequency of detection of mycoplasmas and/or ureplasms, depending on the form of the disease and the effect of antigonorrhea therapy. At the same time, mycoplasmas were found in 24.3±5.0% (18 out of 74). With fresh gonorrhea, mycoplasmas were detected with a frequency of 21.4±5.5% (5 out of 14) and with latent gonorrhea - 25.0±21.6% (1 out of 4) (Fig. 5).

Of the 74 patients with gonorrhea observed by us, 49 women (14 of whom were simultaneously diagnosed with mycoplasmas or ureaplasmas) underwent standard treatment for gonorrhea with the use of penicillin antibiotics and cephalosporins, followed by examination for mycoplasmas. It was found that the treatment of gonorrhea did not affect the frequency of detection of mycoplasmas after treatment. Moreover, before treatment, out of 49 patients, mycoplasmas were detected in 14 patients (28.6±6.4%), and after treatment of gonorrhea, in 16 patients (32.6±6.7%), i.e. in addition, mycoplasmas were detected in 2 women.

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Discussion and Conclusion

Summing up the above, it should be emphasized once again that genital mycoplasmas are commensals of the urogenital tract. They are able only under certain conditions to cause inflammation of the urogenitals, most often in association with other pathogenic and opportunistic microorganisms. Such associates may be the causative agents of sexually transmitted infections.

Thus, according to studies conducted in Tashkent, mycoplasmal urogenital infection is quite common in patients with sexually transmitted infections. Almost every fourth woman in the presence of STIs was colonized by mycoplasmas 25.6±1.8%. And most often the detection of mycoplasmas was combined with HIV infection, syphilis, less often with gonorrhea and trichomoniasis

Despite the fact that the diagnoses of mycoplasmosis and ureaplasmosis in most cases do not correspond to the essence of pathological processes and should be used with great care, we used the term "mycoplasmal infection", because most of the examined women had signs of inflammatory diseases of the genitals. Although in the majority of observations, the causative agents of STIs could also be caused by the clinical picture of an inflammatory disease of the genitals.

The frequency of detection of urogenital mycoplasmas in all STIs was higher in the age group of 20-39 years. This is not surprising, since this age is sexually active.

In conclusion, it should be emphasized that conditionally pathogenic mycoplasmas, which include Ureaplasma urealyticum and Mycoplasma hominis, may be present in the genital organs of healthy women. Like other microorganisms, they can be transmitted to sexual partners. We should agree with the opinion of most authors that today, when opportunistic mycoplasmas, such as Ureaplasma urealyticum and Mycoplasma hominis, are detected, it is necessary to make a diagnosis in accordance with the ICD-X. In this case, a topical diagnosis is indicated with a specification of the identified infectious agent (for example, urethritis (pervicitis, vagnitis) caused by Ureaplasma urealyticum). Treatment should be prescribed if other pathogens, except for mycoplasmas, are not detected in the presence of clinical and laboratory signs of an inflammatory process of the genitourinary system or with upcoming surgical or other invasive treatment and diagnostic manipulations in the genitourinary organs.

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Urogenital mycoplasmas (mycoplasma hominis, ureaplasma urealyticum) in women sexually transmitted infection.

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