

## INFLAMMATORY DISEASES OF THE PELVIC WOMEN ORGANS

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<https://doi.org/10.5281/zenodo.10210722>

**Abstract.** *In the structure of gynecological morbidity, the number of patients with infectious and inflammatory diseases of the genitals ranks first, accounting for 60.4-65.0% worldwide.*

**Keywords:** *neisseria gonorrhoeae, chlamydia trachomatis, mycoplasma genitalium, trichomonas vaginalis.*

Inflammatory diseases of the pelvic organs, women are increasingly acquiring polymicrobial etiology, including not only sexually transmitted infections (*Neisseria gonorrhoeae*, *Chlamydia trachomatis*, *Mycoplasma genitalium*, *Trichomonas vaginalis*), but also opportunistic microorganisms [2]. Infectious and inflammatory diseases of the genitals are inextricably linked with a violation of the biocenosis of the vagina[3]. Among the dysbiotic diseases of the vagina, the most common nosological forms are nonspecific vaginitis, bacterial vaginosis, cervicitis and mixed infections. These diseases are dangerous in the form of independent units, and can also serve as a basis for the formation of such pathological conditions as pyelonephritis, asymptomatic bacteriuria, postcoital cystitis, infectious complications of surgical interventions[4]. Of course, the observed growth of mixed infections characterized by the predominance of conditionally pathogenic microorganisms and the erased clinical picture of the disease, the formation of biofilms and the appearance of antibiotic-resistant microbes or superbugs pose a serious threat to the human population[5]. The strategy of prevention and treatment of these diseases provides for the use of combined antibacterial and antiprotozoal drugs that have a certain effectiveness against the main groups of pathogens. At the moment, most drugs have an extended spectrum of action, which is convenient in the treatment of mixed and severe gynecological infections[4]. In recent years of the development of medicine, the interest of drug manufacturers lies in the creation of drugs containing two or more active substances in one dosage form. Most studies show the advantage of a combination of drugs compared to monopreparations. The use of etiotropic drugs that are effective against one group of microorganisms can cause the development of superinfection due to drug correction, competitive relationships or the development of drug resistance. Combined medicines are characterized by greater effectiveness of action, rapid onset of the desired effect, absence of obvious side effects and better tolerability of the components. In addition, these drugs are characterized by simplification of the reception scheme and ease of use [4, 6]. One of these drugs — Symprazole — is a combined antimicrobial and antiprotozoal spectrum drug. The main components are ornidazole and ciprofloxacin. Indications for the use of this drug are mixed bacterial infections caused by sensitive gram-positive and gram-negative microorganisms in combination with anaerobic microorganisms and / or protozoa; infectious and inflammatory diseases of the pelvic organs. Ciprofloxacin, which is part of the drug, is a synthetic broad-

spectrum antibacterial drug from the group of fluoroquinolones. Its bactericidal effect is due to the inhibition of DNA hydase of microorganisms, as a result of which the synthesis of bacterial DNA is inhibited. Since the effect of ciprofloxacin does not extend to the simplest microorganisms, it was necessary to supplement the spectrum of action of this drug with an antiprotozoal drug. Ornidazole is an active derivative of 5-nitroimidazole and has high efficacy against *Trichomonas vaginalis*, *Entamoeba histolytica*, *Giardia lamblia*, as well as some anaerobic bacteria such as *Bacteroides* spp., *Clostridium* spp., *Fusobacterium* spp., and anaerobic cocci *Peptostreptococcus* spp. and *Peptococcus* spp.[7] . According to the latest clinical recommendations of the Russian Society of Obstetricians and Gynecologists, as well as the US Centers for Disease Control and Prevention, fluoroquinolone preparations are recommended as monotherapy for the treatment of chlamydia infection orally according to the scheme: levofloxacin 500 mg once a day for 7 days or ofloxacin 400 mg twice a day orally for 7 days days [8, 9]. For the treatment of infections caused by *M. genitalium*, oral administration of moxifloxacin at a dose of 400 mg once a day for 7-10 days is recommended[10]. Derivatives of 5-nitroimidazole with oral administration according to the scheme: metronidazole 500 mg 2 times a day for 7 days are the first line of therapy for bacterial vaginosis and urogenital trichomoniasis [11]. T. Inceboz et al. compared the effectiveness of ornidazole, metronidazole and ciprofloxacin against *Trichomonas vaginalis* trophozoites in vitro and found that ornidazole is the most effective drug in terms of minimal inhibitory concentrations. Ciprofloxacin has also demonstrated its efficacy and cytotoxic effect on *T. vaginalis* trophozoites, but to a lesser extent[12]. The appearance of a combined drug in medicine made it possible to successfully compare the effect of the two above-mentioned dosage forms, which led to an improvement in the effectiveness of treatment of urogenital infections of various etiologies. So, the combination of ciprofloxacin (500 mg) + ornidazole (500 mg) is actively used for the treatment of uncomplicated salpingoophoritis and chronic forms of inflammation of the uterine appendages [4, 13]. The choice in favor of combined antibacterial and antiprotozoal drugs is also due to the growth of mixed infections. According to the Clinical Recommendations of 2021 for the treatment of Inflammatory diseases of the pelvic organs, it is recommended to conduct therapy with antibacterial drugs empirically covering the entire spectrum of probable pathogens with a preliminary cultural study for subsequent correction (if treatment is ineffective)[14]. Recommendations on antibiotic therapy regimens for Inflammatory diseases of the pelvic organs vary in different countries, but the basic principles of treatment are generally accepted. It is necessary to ensure the elimination of the entire spectrum of possible pathogens (gonococci, chlamydia, genital mycoplasma, gram-negative intestinal microflora, gram-positive aerobes, anaerobes, etc.) [8, 15]. The use of a combined drug in this case is considered pathogenetically justified in the fight against mixed infectious and inflammatory diseases. According to the results of clinical studies, the effectiveness of the combination of ciprofloxacin 500 mg + ornidazole 500 mg was established in 34 patients (19 men and 15 women) aged 19-53 years (on average 38.0 ± 3.4 years) with urogenital chlamydia. The clinical manifestations of chlamydia in women were unpleasant sensations in the vagina: itching, burning — in 6 (40%) patients, mucopurulent discharge - in 4 (26.7%), dysuric disorders during urination — in 2 (13.3%), pain in the lower abdomen, in the lower back — in 3 (20%). During the examination, chlamydia infection was detected in 5 patients; 7 patients have an association of chlamydia with ureaplasmas, of which 3 patients have an association with trichomonas and 2 patients with gonococci; 13 have an association of chlamydia with mycoplasmas, of which 4 have an association of chlamydia with

trichomonas; 9 have an association of chlamydia with gardnerella, of which 2 have an association with trichomonas and ureaplasmas. During treatment, the drug provided a rapid clinical effect. Pain decreased in 4 (80.0%) examined on the 6th-7th day of treatment, dysuric phenomena disappeared in 6 (85.7%) patients, discharge from the urethra by the 7th day of treatment was eliminated in 8 (80.0%) patients. Out of 10 patients who had burning or itching in the urethra and vagina before treatment, by the 5th-7th day after taking the drug, these symptoms disappeared in 9 (90.0%) patients. Hyperemia of the external opening of the urethra of varying severity disappeared after 3 days in 1 (50%) patient, after 7 days — in 2 (100%) [16]. The effectiveness of the combination of ornidazole and ciprofloxacin has been evaluated in numerous studies that analyzed the role of combined drugs in the treatment of infectious and inflammatory diseases in gynecological practice. B.G. Kogan et al. 50 patients with different localization of the inflammatory process in the female genital organs were examined and treated: with chronic endocervicitis in the acute stage (n = 27), chronic adnexitis in the acute stage (n = 23). Associations of pathogens were found in all patients: mixed bacterial (in various combinations) — in 21 (42.0%), chlamydia-bacterial — in 6 (12.0%), mycoplasma and bacteria — in 18 (36.0%), chlamydia, mycoplasma and bacteria — in 2 (4.0%), trichomonas and bacteria — in 2 (4.0%), trichomonas, chlamydia and bacteria — in 1 (2%). Treatment was carried out with a combined antibacterial drug containing ciprofloxacin (582 mg) and ornidazole (500 mg) according to the scheme: 1 tablet 2 times a day every 12 hours. After clinical improvement, treatment according to this scheme lasted at least 2-3 days. The frequency of clinical recovery in the study group was 100%, the frequency of elimination of identified pathogens (associations of chlamydia, mycoplasma, trichomonas, saprophytic flora) in control studies was 92.0% [15].

In the study of V.F. Refugee et al. a comparative analysis of the treatment of vaginal dysbiotic diseases with a combined drug containing ciprofloxacin (500 mg) and ornidazole (500 mg) with a combination of monopreparations in a similar dosage was carried out. The study included 64 patients with diagnoses of bacterial vaginosis, nonspecific vaginitis or "decompensated mixed vaginal dysbiosis". Patients of group 1 (n = 32) took a combined drug, group 2 (n = 32) - ciprofloxacin and ornidazole with two monopreparations. In both groups, there was an improvement in clinical symptoms: discomfort, itching, burning, dyspareunia, mucosal hyperemia against the background of normalization of laboratory parameters of the state of vaginal microbiocenosis, while the results were higher in group 1. After 12-19 days from the start of treatment, group 2 showed the persistence of symptoms relative to group 1, which demonstrates the greater therapeutic effectiveness of the combined drug compared with the use of tablet forms of ciprofloxacin and ornidazole in monorode in similar dosages. There were no adverse drug reactions to taking drugs [4].

Thus, the use of drugs containing a combination of ciprofloxacin and ornidazole shows its success in the treatment of Inflammatory diseases of the pelvic organs, dysbiotic diseases of the vagina and has a high percentage of elimination of pathogens. The course of treatment with Symprazole for various urogenital infections is 5-7 days. If the infection has taken a chronic form, treatment continues for 10-14 days. The dosage is 1 tablet 2 times a day. The study of the use of ornidazole and ciprofloxacin and their combination in the treatment of Inflammatory diseases of the pelvic organs showed their high effectiveness in the prevention of purulent-inflammatory processes of the preoperative period and complications of the postoperative period. The wide

spectrum of action of the combined drug makes it possible to use it effectively for empirical therapy[17].

### **Conclusion.**

Symprazole demonstrates therapeutic efficacy against a large number of urogenital gynecological diseases. It is advisable to use it in the case of mixed infections, vaginitis of various etiologies, Inflammatory diseases of the pelvic organs, as well as for the prevention of complications in the postoperative period. Based on the above, the use of combined medications in practical gynecology is extremely effective and relevant. With the indispensable consideration of all the nuances of their chemotherapeutic action and interaction with other drugs, the likelihood of possible side effects, as well as with careful attention to the assessment of the benefit–risk ratio, treatment is very effective.

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