

Phytocorrection of dysbiosis in patients with chronic nonspecific inflammatory diseases of the genitals

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SUMMARY

Purpose of the work: Evaluation of the effectiveness of low-dose phytotherapy in the complex treatment of patients with nonspecific inflammatory diseases of the genitals against the background of dysbiosis.

On the basis of clinical and laboratory data (complaints, registration of blood pressure, microscopy of a smear of vaginal contents, scatological examination), the effectiveness of the method of phytotherapy of small doses with rapidly dissolving water extracts of plants - herbal teas of the "Russian Natural Pharmacy" series in patients with nonspecific inflammatory diseases of the genitals against the background of dysbiosis was evaluated. During therapy, restoration of normal intestinal microflora and correction of blood pressure were noted.

Introduction

Nonspecific inflammatory diseases of the genitals develop in conditions of a decrease in immunological protection, the death of a permanent microflora.

The use of broad-spectrum antibiotics used to treat diseases of the urinary tract (cystitis, urethritis) and genitals (prostatitis, vulvovaginitis, adnexitis), lead to disruption of homeostasis and the development of intestinal dysbiosis [3].

Pronounced changes in the composition of the intestinal microflora can be accompanied by various clinical manifestations associated with the development of vitamin deficiency and disturbances in the natural process of detoxification. *E. coli* produces several vitamins (vit. B1, B2, B6, B12, K, PP, folic and pantothenic acids), participates in the metabolism of cholesterol, bilirubin, choline, bile and fatty acids, and also affects the absorption of iron and calcium. The intestinal microflora plays an important role in the formation of the immune system and protection of the body from diseases [1]. With dysbacteriosis, a decrease in the number of normal *Escherichia coli* and an increase in other conditionally pathogenic microorganisms were noted: enterobacteria, staphylococci, *Candida* fungi; the content of bifidobacteria and lactobacilli decreases by 1–2 orders of magnitude [3].

The increased adhesive capacity of the mucous membranes of the urethra, vagina and oral cavity in relation to *E. coli* contributes to the occurrence of infectious inflammatory processes of extraintestinal localization (urogenital system).

All local changes affect the general adaptation and lead to a decrease in general and special performance, contributing to the development of prenosological and pathological conditions [2]. Increased physical activity also contributes to the development of dysbiosis. IN AND. Saninsky [6] revealed an increase in nonspecific inflammatory diseases of the genitals in swimmers (in a number of sports teams - up to 95% of cases).

Therefore, it is very important to study the general manifestations of discomfort in local inflammatory processes, violations of the integrity of mucous membranes and their microflora as manifestations of one of the factors that reduce immunological protection and promptly correct them with non-drug means. The clinical picture of these conditions is multifaceted. Therefore, it is necessary to eliminate the symptoms of vitamin deficiency and mineral deficiency with the help of herbal preparations.

Herbal teas of the "Russian Natural Pharmacy" series have a versatile effect on the tissues and systems of the body, helping to restore their functional activity [4]. In addition, these phytocompositions replenish the daily requirement for chromium, which is necessary to restore the level of immunological protection and physical activity [5].

Materials and research methods

The study was conducted on 60 women aged 18 to 40 years. All patients had dysbiosis after prolonged exacerbations of nonspecific inflammatory processes in

genitals and their treatment. Complex treatment with the use of phytotherapy in low doses with rapidly dissolving herbal teas was carried out in 30 patients. The control group consisted of 30 women who received traditional treatment.

Group 1 included 20 patients with complaints of increased blood pressure, nausea, vomiting, dizziness, palpitations and sweating: 10 patients took the herbal tea "Aphrodite", 10 - made up the control group.

Group 2 included 20 patients with complaints of low blood pressure, headaches, dizziness, palpitations, sweating. Of these, 10 patients took herbal tea "Gusarsky", 10 - were included in the comparison group (control group).

Group 3 included 20 patients with complaints of abdominal pain, constipation, alternating with diarrhea, flatulence, poor appetite: 10 patients took herbal tea "Monomakh", and 10 patients made up the control group.

Instant herbal teas of the Russian Natural Pharmacy series are a dry aqueous extract of motherwort, calendula, wild rose, string, chamomile, eucalyptus, tansy, Eleutherococcus, St. John's wort, bearberry, licorice root. Reception scheme: in the morning before meals for 10 days, 1.0 g in 100 ml of hot water.

In the clinic, the patients underwent a clinical examination, registration of blood pressure, microscopy of a smear of vaginal contents, a scatological examination and a general blood test. Complaints of patients about lethargy, drowsiness, dizziness, headache, sweating, palpitations and others were evaluated. The contents of the vagina were examined using a microscopic method. A smear taken from the posterior fornix of the vagina on a glass slide, after fixing it by the method of drying, was subjected to staining according to Romanovsky-Giemsa and microscopy, and the number of leukocytes was assessed.

Before the appointment of herbal tea and after a 10-day course of its use, the number of colony-forming units (CFU) of various microorganisms in 1 g of feces was calculated. The isolated microorganisms were identified using classical methods, as well as using the "Micro-test" test system ("Jachema", Czech Republic). The results obtained underwent a logarithmic transformation.

Research results

The intestinal microflora in patients with nonspecific inflammatory diseases of the genitals (NVZH) differs in patients with various complaints and the state of the autonomic nervous system. In patients with hypotension, the content of *Escherichia coli* with weakly expressed enzymatic properties is increased compared with patients presenting complaints from the gastrointestinal tract (where its content is 2 times lower). In patients with vegetative-vascular dystonia (VVD), the content of hemolyzing *E. coli* is 2 times higher in hypertensive and hypotonic type.

In the group of patients presenting complaints from the gastrointestinal tract, the content of staphylococcus is 2 times higher than in patients with VSD, and the content of candida fungus, on the contrary, is significantly lower than in patients with VSD. At the same time, they have a significant content of clostridia in coprocultures.

In patients with VVD according to the hypotonic type, the lowest indicators of the content of bifidobacteria were determined.

After the treatment of patients of the 1st group, a positive dynamics was noted in the correction of blood pressure and intestinal biosis. In patients with nonspecific vaginitis, taking herbal tea "Aphrodite" (table 1), positive dynamics in the correction of intestinal dysbiosis was noted in 9 (90%) patients of the main group. At the same time, in the comparison group, all patients showed violations according to different parameters of intestinal colonization resistance.

The content of bifidobacteria within the permissible norm ($\lg 8-9$ KOE / g) was noted in 8 (80%) and 3 (30%) cases, respectively, in the main and control groups. However, an increase (above $\lg 8-9$ KOE / g) was observed only in patients of the main group - 5 (50%), while this was not noted in the control group. It is important to note that in parallel, the level of lactobacilli and *E. coli* with full-fledged enzymatic properties increased in 8 (80%) and 7 (70%) patients, respectively. At the same time, in the control group, 3 (30%) patients showed a drop in *E. coli* below $\lg 7$ KOE / r, and in 6 (60%) patients below $\lg 5$ KOE / r. The degree of lactobacilli below $\lg 8$ KOE / r in the control group was determined in 7 (70%) patients and only in 3 (30%) patients the degree was $\lg 9$ KOE / r. Growth inhibition in comparison with the control group was noted in relation to hemolyzing *Escherichia coli* (HKC). HKP in the group receiving herbal tea did not exceed 10% in 2 (20%) patients. In the control group, it was determined in 6 (60%) cases, of which more than 10% in 3 (30%) patients, of which in 1 (10%) it was determined in 100%. *Staphylococcus aureus* (up to $\lg 4$ KOE / r) was detected in 5 (50%) patients of the main group, and in the comparison group it was not sown only in 2 (20%) patients, and of those in whom it was recorded - 3 (30%) cases was over $\lg 4$ KOE / r. Based on the degree of oppression

bifidobacteria (lg7 KOE / r), a compensated form of dysbiosis was detected in 7 (70%) patients, and with a positive tendency to recovery. The same form was given to 3 (30%) patients in the comparison group. The decompensated form of intestinal dysbiosis (the degree of bifidobacteria at the level of lg4-5 KOE / r) was established only in patients of the control group - 7 (70%) cases.

The negative dynamics in the composition of the intestinal microflora in these patients is probably associated with an uncompensated side effect of specific therapy and the absorption of toxic substances into the bloodstream, the death of microorganisms that exert a load on the detoxification function of the liver. This is manifested, first of all, by an exacerbation, as well as a protracted and chronic course of the inflammatory process itself.

Table 1

The quantitative composition (lg CFU / g) of intestinal biocenosis in the groups of examined women before and after taking various types of herbal tea in comparison with the standard indicators.

| Микроорганизмы | Группы обследованных и периоды исследования | | | | | | | | | Норма |
|---|---|---|--------------------|----------------------|--|--------------------|----------------------|--|--------------------|---------|
| | До лечения N = 20 | После лечения фиточаем «Афродита» | | До лечения N = 20 | После лечения фиточаем «Гусарский» | | До лечения N = 20 | После лечения фиточаем «Мономах» | | |
| | | N = 10 основная | N = 10 контроль | | N = 10 основная | N = 10 контроль | | N = 10 основная | N = 10 контроль | |
| Общее количество кишечной палочки E.coli | 7±0,33* | 7,5±0,17* | 6,7±0,2 | 6,27±0,09 | 7,5±0,36 | 6,8±0,3 | 6,8±0,18 | 8,8±0,1** | 6,8±0,3 | lg7-8 |
| E.coli со слабо выражен. ферм. свойствами | 10,4±6,07* | 6,0±0,32** | 13±1,06 | 15,9±2,21 | 12±0,9 | 15±0,7 | 4,15±0,84 | 1,6±1,02 | 0,3±0,3 | До 10% |
| Условно-патогенные энтеробактерии | 4,86±1,16* | 0,3±0,31* | 2,9±1,29 | 3,75±0,24 | 1,9±0,94 | 2,1±1,04 | 4,35±0,46 | 0,5±0,5 | 0,9±0,6 | lg4 - 5 |
| Гемолизирующая E.coli | 15,7±1,52* | 5±0,6** | 23,6±11,96 | 14,5±1,7 | 7,1±3,02 | 25,9±13,2 | 7,25±1,38 | 5,3±2,7 | 7,7±602 | До 10% |
| Энтерококк | - | - | - | 5,71±0,17 | 3,7±0,83 | 4,9±1,1 | 5,7±0,53 | 2,3±0,9 | 5,4±1,1 | lg6-7 |
| Стафилококк | 2,14±0,64 | 1,4±0,5 | 2±0,54 | 2,83±0,18 | 3,3±0,41 | 2,5±0,67 | 5,7±0,53 | 2,3±0,9 | 5,4±1,1 | До lg4 |
| Бифидобактерии | 7,14±0,28 | 8,4±0,3 | 7,8±0,37 | 6,6±0,05 | 7,1±0,42 | 6,7±0,38 | 7,85±0,3 | 8,9±0,1* | 7,1±0,4 | >lg8 |
| Грибы рода кандида | 3±0,67 | 2,1±0,9 | 2,9±0,5 | 4,3±0,72 | 2,92±0,21 | 4,4±0,39 | 0,8±0,6 | 0,35±0,31* | 3,2±0,5 | До lg4 |
| Лактобактерии | 6,71±0,39 | 7,3±0,38 | 6,7±0,35 | 6,89±0,08 | 7,2±0,37 | 6,9±0,45 | 7,15±0,24 | 8,3±0,3* | 6,8±0,4 | lg8-9 |
| Клостридии | - | - | - | 1±0,14 | - | 0,2±0,21 | 4,4±0,86 | - | 0,2±0,2 | До lg5 |
| Протей | - | - | - | 0,39±0,08 | 0,2±0,21 | - | - | - | 0,4±0,3 | До lg3 |

Примечание: * - p > 0,05

Table 2 shows that systolic blood pressure in patients of the main group, compared with the control group, after taking herbal tea "Aphrodite" significantly decreased (p < 0.05), and diastolic blood pressure practically did not change (p > 0.05). After treatment, all patients noted an improvement in their general condition, normalization of blood pressure and the disappearance of complaints of nausea, vomiting, dizziness, palpitations and sweating, which proves the possibility of using this herbal tea to alleviate the general condition of patients and correct blood pressure in hypertensive VVD.

table 2

Change in blood pressure after taking the drug collection Aphrodite

| Основная группа | | Достоверность различий | Контрольная группа | | Достоверность различий |
|-----------------|-----------|------------------------|--------------------|-------------|------------------------|
| 119 ± 8,27 | 69 ± 2,45 | p < 0,05 | 131 ± 9,74 | 74,5 ± 3,37 | p > 0,05 |

An individual assessment of the blood count in the studied patients showed that after treatment with herbal tea "Aphrodite" the phenomena of inflammation and intoxication were removed, a correlative relationship was found between the indicators of intestinal dysbiosis and blood leukocytes. The less pronounced

intestinal dysbiosis, the better leukocyte counts, ESR, the content of segmented and stab forms, which indicates the normalization of the protective function of blood cells, in particular, their detoxification and antimicrobial function.

After the treatment of patients of the 2nd group with herbal tea "Gusarskiy", there was a positive dynamics in the correction of blood pressure and intestinal biosis (Table 3). Positive dynamics in the correction of intestinal dysbiosis was noted in 8 (80%) patients of the main group. At the same time, in the comparison group, all patients showed violations according to different parameters of intestinal colonization resistance. The content of bifidobacteria within the permissible norm (lg89 KOE / r) was canceled in 9 (90%) and 5 (50%) cases, respectively, in the main and control groups. However, the increase (above lg8-9 KOE / r) was observed only in patients of the main group - 6 (60%). While in the control group this was not noted. It is important to note that in parallel, the level of lactobacilli and E. coli with full-fledged enzymatic properties increased in 7 (70%) and 7 (70%) patients, respectively. At the same time, in the control group, 4 (40%) patients showed a drop in E. coli below lg7 KOE / r, and in 6 (60%) patients below lg5 KOE / r. The degree of lactobacilli below lg8 KOE / r in the control group was determined in 6 (60%) patients and only in 4 (30%) patients, the degree was lg9 KOE / r.

Growth inhibition in comparison with the control group was noted in relation to hemolyzing Escherichia coli (HKC). HCP in the group receiving herbal tea did not exceed 10% in 2 (20%) patients, in the control group it was determined in 5 (50%) cases, of which more than 10% in 3 (30%) patients, of which 2 (20%)) was determined at 100%. Staphylococcus aureus (up to lg4 KOE / r) was detected in 6 (60%) patients of the main group, and in the comparison group it was not sown only in 2 (20%) patients, of those in whom it was recorded in 3 (30%) cases over lg4 CFU / g. Based on the degree of inhibition of bifidobacteria (lg7 KOE / r), a compensated form of dysbiosis was detected in 4 (40%) patients, with a positive tendency towards recovery. The decompensated form of intestinal dysbiosis (the degree of bifidobacteria at the level of lg4-5KOE / r) was established only in patients of the control group - 9 (90%) cases.

In the course of treatment in patients of the main group, the intensity of intestinal colonization by enterobacteria decreased significantly. A pronounced inhibition of growth was noted in relation to hemolytic E. coli. In parallel, the level of E. coli with full-fledged enzymatic properties and lactic acid bacteria increased. The effect of herbal tea "Gusarskiy" on the correction of intestinal microflora was observed in patients with dysbiosis at the stage of decompensation (bifidobacteria below lg 7 KOE / r) and compensation (lg7 KOE / r), and with a positive tendency to recovery.

Table 3 shows that the blood pressure in the patients of the main group after taking herbal tea "Gusarskiy" reached standard values, which was clinically confirmed by the disappearance of complaints of headaches, dizziness, palpitations, sweating. The results obtained proved the effectiveness of this herbal tea in the complex therapy of patients with hypotension.

Table 3

Change in blood pressure after taking the drug Gusarskiy.

| Основная группа | | Достоверность различий | Контрольная группа | | Достоверность различий |
|-----------------|--------|------------------------|--------------------|-----------|------------------------|
| 92,5±1,96 | 72±2,1 | p<0,001 | 106±2,19 | 76,5±2,22 | p>0,05 |

After the treatment of patients of the 3rd group with herbal tea "Monomakh", intestinal dysbiosis was observed in 4 (40%) patients of the main group. At the same time, in the comparison group, all patients showed violations according to different parameters of intestinal colonization resistance. The content of bifidobacteria within the permissible norm (lg8-9 KOE / r) was noted in 7 (70%) and 4 (40%) cases, respectively, in the main and control groups. However, an increase (above lg8-9 KOE / r) was observed only in patients of the main group, while in the control group this was not observed.

It is important to note that the level of lactobacilli and E. coli with full-fledged enzymatic properties increased in parallel, respectively, in 9 (90%) and 6 (60%) patients. At the same time, in the control group, 9 (90%) patients showed a drop in E. coli below lg7 CFU / r, and 1 (10%) below lg5 CFU / r. The degree of lactobacilli below lg8 KOE / r in the control group was determined in 4 (40%) patients and only in 3 (30%) patients the degree was lg8 KOE / r. Growth inhibition in comparison with the control group was noted in relation to hemolyzing Escherichia coli (HCP). HKP was absent in 2 (20%) patients in the group receiving herbal tea, and in 4 (40%) patients it did not exceed 10%. In the control group, it was determined in 5 (50%) cases, of which more than 10% in 3 (30%) patients, of which in 2 (20%) it was determined in 100%. Based on the degree of inhibition of bifidobacteria (lg7 KOE / r), a compensated form of dysbiosis was found in 2 (20%) patients, with a positive tendency towards recovery. The same form was given to 7 (70%) patients in the comparison group. Decompensated form of intestinal dysbiosis (degree of bifidobacteria on

the level of Ig4-5 KOE / r was established only in patients of the control group). The effect of herbal tea "Monomakh" is manifested to one degree or another depending on the state of the intestinal wall, namely Peyer's patches, their reserve capabilities. That is, in the treatment of patients with nonspecific vaginitis, as can be seen from the above, you can use the herbal tea "Monomakh". Patients of the main group, after a 10-day intake, noted the disappearance of the symptoms of dyspeptic syndrome.

As a result of treatment, the duration of clinical symptoms such as weakness, abdominal pain, flatulence, fever is reduced and the stool is normalized, in comparison with patients who did not receive this herbal tea. Carrying out a course of treatment for 10 days allows you to achieve a decrease in the coprogram of plant and muscle fibers, and the normalization of the intestinal flora. These changes are accompanied by a decrease in leukocytosis, a shift to the left in the leukocyte count, ESR and an increase in hemoglobin content.

Table 4 shows that the specific microbial landscape of the vagina after taking herbal tea "Gusarsky" in the studied groups is different, which confirms the content of leukocytes in the smear. After taking herbal tea "Aphrodite" and "Monomakh", the disappearance or decrease in the content of leukocytes in the preparation was noted. These data indicate an increase in the resistance of the vaginal eco-colony and confirm the indirect effect of herbal teas on the vaginal flora through the intestinal econiche and immunity.

Table 4

Changes in the number of leukocytes in a vaginal smear (%) in the examined patients after the therapeutic use of various herbal teas

| Число лейкоцитов | Группы обследованных и период исследования | | | | | |
|------------------|--|--------------------|------------------------------------|--------------------|----------------------------------|--------------------|
| | После лечения фиточаем «Афродита» | | После лечения фиточаем «Гусарский» | | После лечения фиточаем «Мономах» | |
| | основная группа | контрольная группа | основная группа | контрольная группа | основная группа | контрольная группа |
| 15–25 | 5 (50%) | 5 (50%) | 4 (40%) | 7 (70%) | 6 (60%) | 4 (40%) |
| 25–35 | 3 (30%) | 2 (20%) | 2 (20%) | 1 (10%) | 2 (20%) | 4 (40%) |
| 35–45 | 2 (20%) | 2 (20%) | 3 (30%) | 1 (10%) | 1 (10%) | 1 (10%) |
| Более 50 | 0 (0%) | 1 (10%) | 0 (0%) | 1 (10%) | 1 (10%) | 1 (10%) |

The discussion of the results

It is known that the detoxifying function of the liver is impaired with prolonged sluggish decompensated intestinal dysbiosis, which is determined by a special analysis of feces for dysbiosis. Biochemical and immunological disorders are important links in its pathogenesis. From the first days of the infectious process, the composition of the microflora of the large intestine is disrupted. This explains the fact that after 7–8 days of illness in most patients, the dysbiotic process is the same. Under these conditions, antibacterial agents have their value only at the onset of the disease, and later on, their negative effect on the intestinal eco-colony is revealed. Carrying out therapeutic measures against such a background is quite problematic, since the drugs have a general toxic effect on the body and cause unwanted side effects and complications, enhance the picture of endotoxemia, reduce the adaptive capabilities of the body. In recent years, herbal teas in the form of herbal teas are widely used in the treatment of women with inflammatory diseases of the genitals and concomitant intestinal pathology. The effect of the herbal tea "Aphrodite" is manifested to one degree or another depending on the state of the intestinal biocenosis and the immune system, that is, the effect of the herbal tea on the inflammatory process is directly proportional to the state of the intestine, and since the herbal tea "Aphrodite" has a mild antimicrobial, antiseptic and anti-inflammatory effect, it promotes restoration of the normal flora of the intestinal econiche. Moreover, the herbs included in the composition help to correct blood pressure in the body. Therefore, it can be successfully used in women with hypertensive type of VSD.

| Фиточай | E. coli | Лактобактерии | бифидобактерии | Candyda | E. coli со слабовыр. фермент. св-вами. | E. coli гемолитическая |
|-------------|---------|---------------|----------------|---------|--|------------------------|
| «Афродита» | Повыш.* | Повыш. | Повыш. | Пониж.* | Пониж.* | Пониж. |
| «Мономах» | Повыш. | Повыш. | Повыш. | Пониж. | Пониж. | Пониж. |
| «Гусарский» | Повыш.* | Повыш.* | Повыш.* | Пониж. | Пониж. | Пониж.* |

Примечание: * – достоверное изменение.

Table 5

The effectiveness of the impact of various types of herbal tea on some types of intestinal microflora

Herbal tea "Monomakh" has an antiseptic effect to one degree or another in relation to the pathogenic flora of the intestine.

For the normalization of microflora, it is of great importance to maintain at the optimal level the metabolic processes occurring in the macroorganism, which ensures a high colonization resistance of the host organism in relation to pathogenic microbes. To normalize the composition of microflora, probiotics, eubiotics and other medicines containing bifido and lactoflora are used.

The most promising is the use of medicinal herbal teas or herbal teas. Their use as an adjunct to traditional medicine for the correction of extragenital pathology in obstetrics and gynecology is relevant. The use of phytocompositions in various fields of medicine has shown their high efficiency. The use of antibiotics contributes to the development of dysbiosis and also reduces the level of immunological protection.

The data presented show the real possibilities of complex treatment of these conditions with the use of low-dose herbal medicine, prescribed taking into account the specific complaints of patients.

The results obtained allow us to assert that in the treatment of patients with nonspecific vaginitis and intestinal dysbiosis in order to obtain an anti-inflammatory and detoxification effect, restore intestinal normocenosis and activate the immune system, the herbal tea "Monomakh" is recommended.

Under the influence of herbal teas, the total content of E. coli in coprocultures increases and the content of bifidobacteria increases, that is, the normal intestinal microflora is restored.

Under the influence of the rapidly dissolving herbal tea "Aphrodite", the content of Escherichia coli with mild enzymatic properties, hemolyzing Escherichia coli and the content of opportunistic enterobacteria are reduced.

Under the influence of herbal tea "Monomakh", the total amount of Escherichia coli and lactobacilli significantly increases. At the same time, the content of enterococci and candida fungi is significantly reduced.

The use of herbal tea "Gusarsky" leads to a significant decrease in the content of E. coli with weakly expressed enzymatic properties and fungi of the genus Candida.

conclusions

1. Under the influence of infusions from phytocompositions, the composition of normal microflora is restored.
2. All herbal teas and, especially, herbal tea "Aphrodite", helps to reduce the content of conditionally pathogenic enterobacteria and fungi of the genus Candida.
3. Herbal tea "Aphrodite" and "Gusarsky" in patients with VSD significantly reduce the content hemolyzing E. coli compared to control.
4. Herbal teas "Gusarsky" and "Monomakh" reduce the content of enterococci in comparison with the control.
5. Herbal tea "Monomakh" helps to increase the content of E. coli and reduce the content of E. coli with weakly expressed enzymatic properties.

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