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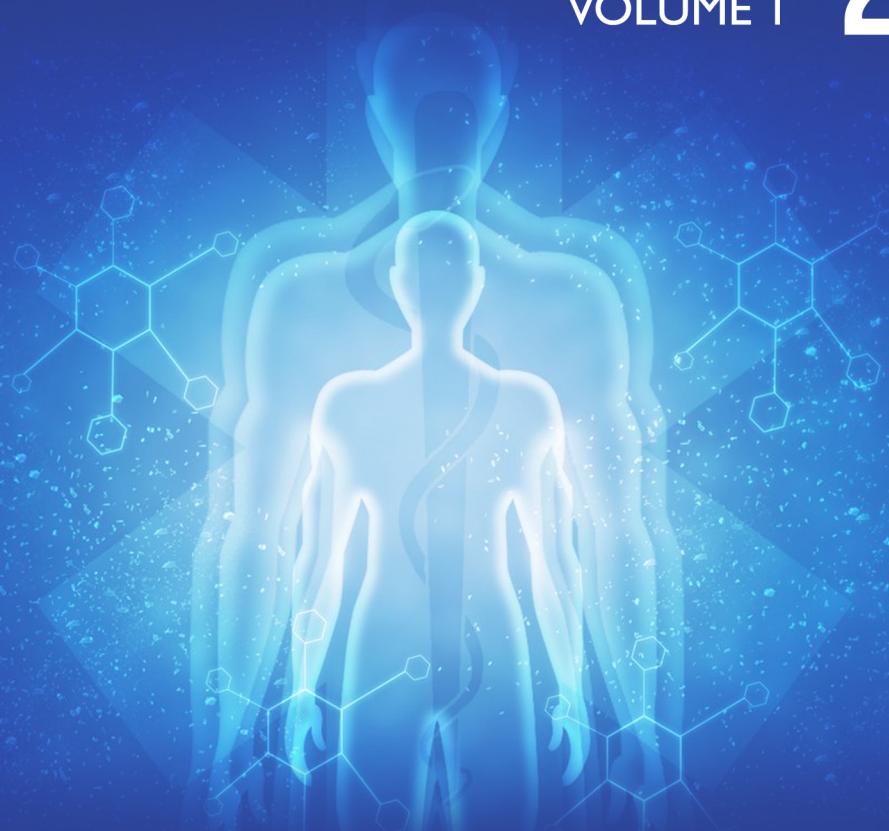
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# **ЖУРНАЛ ГУМАНИТАРНЫХ И ЕСТЕСТВЕННЫХ НАУК**

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**IMMUNE SYSTEM PARAMETERS IN WOMEN WITH GENITAL ENDOMETRIOSIS****Ismailova Dildora Oktamovna** – Ph.D., associate professor*Tashkent medicine Academy Urganch Branch (Khorazm, Uzbekistan)***Musakhodjaeva Dilarom Abdullaevna** – D.M.Sc., professor*Immunology and a person genomics institute AN RUz (Tashkent, Uzbekistan)***Magzumova Nargiza Makhkamovna** – D.M.Sc., professor*Tashkent medicine Academy (Tashkent, Uzbekistan)*

**Summary.** 58 patients with endometriosis were examined. Of these, 27 had adenomyosis, and 31 had external genital endometriosis. The control group consisted of 18 apparently healthy women. The parameters of the immune system (cellular immunity and cytokine status) were studied in all examined women. It was revealed that, in comparison with those of the control group, in all patients with endometriosis, the level of subpopulation composition of lymphocytes (CD3, CD4, CD8, CD16, CD20, CD45RA, CD25, CD95), as well as the level of cytokines (IL-1 $\beta$ , IL-2, IL-6, IL-8, IFN $\gamma$ ) began to decrease to increase depending on the form of endometriosis.

**Key words:** endometriosis, adenomyosis, external genital endometriosis, cellular immunity, cytokines.

**ИММУННАЯ СИСТЕМА У ЖЕНЩИН С ГЕНИТАЛЬНЫМ ЭНДОМЕТРИОЗОМ****Исмаилова Дилдора Уктамовна** – Ph.D., доцент*Ургенчский филиал Ташкентской медицинской академии (Хорезм, Узбекистан)***Мусаходжаева Диляром Абдуллаевна** – д.м.н., профессор*Институт иммунологии и геномики человека АН РУз (Ташкент, Узбекистан)***Магзумова Наргиза Махкамовна** – д.м.н., профессор,*Ташкентская медицинская академия (Ташкент, Узбекистан)*

**Аннотация.** Обследовано 58 больных эндометриозом. Из них у 27 был adenомиоз, у 31 — наружный генитальный эндометриоз. Контрольную группу составили 18 практически здоровых женщин. У всех обследованных женщин изучены показатели иммунной системы (клеточный иммунитет и цитокиновый статус). Выявлено, что по сравнению с таковыми контрольной группы у всех больных эндометриозом уровень субпопуляционного состава лимфоцитов (CD3, CD4, CD8, CD16, CD20, CD45RA, CD25, CD95), а также уровень цитокинов (ИЛ-1 $\beta$ , ИЛ-2, ИЛ-6, ИЛ-8, ИФН $\gamma$ ) стали снижаться или повышаться в зависимости от формы эндометриоза.

**Ключевые слова:** эндометриоз, adenомиоз, наружный генитальный эндометриоз, клеточный иммунитет, цитокины.

**Enter.** To clarify the main mechanisms of the development of endometriotic foci, the study of local immune processes is of great interest [1,3,4,6]. At the same time, the study of the systemic immune response in endometriosis also provides important information about the pathogenetic factors of the development of the disease, because the functional state of the circulating immunocompetent cells can mainly reflect the direction of the immune disorders occurring at the local level [2,5].

**The aim** of the study was to study the characteristics of some immune parameters in the peripheral blood of women with genital endometriosis.

**Materials and research methods.** We observed 58 women with internal (adenomyosis) (27 women) and external genital endometriosis (31 women), whose diagnosis was confirmed at the stage of clinical and instrumental examination, including therapeutic and diagnostic laparoscopy. All patients were comparable in age, complaints, anamnesis, gynecological and non-genital pathologies, disease

level (grade II-III according to the r-AFS classification of the American Fertility Society). [4] As a control group for immunological studies, the parameters of 14 healthy women with normal reproductive function, included in scheduled surgical sterilization, were used.

Immunological studies were carried out by studying the level of lymphocytes by identifying CD3, CD4, CD8, CD16, CD20, CD45RA, CD25, CD95 groups on the surface using monoclonal antibodies of the LT series (Sorbent LLP, Moscow, Russia). The level of inflammatory (IL-1 b, IL-2, IL-6, IL-8, IFN  $\gamma$ ) and anti-inflammatory (IL-4) cytokines in the serum was studied by the IFA method (ООО "Cytokin", St. Petersburg, RF).

**The result and its discussion.** The analysis of medical data showed that the age of women is between 22–38 years. A study of the duration of the disease showed that women with adenomyosis averaged 4.7 years, while in the case of external genital endometriosis it was 2.8 years.

The study of the somatic anamnesis showed that the gynecological diseases were often accompanied by dysmenorrhea, acute and chronic adnexitis, uterine myoma, colpitis, bacterial vaginosis, and non-functioning uterine bleeding.

Depending on the form of the disease, various additional symptoms of endometriosis are identified. Menstrual dysfunction in the form of DBQ (distant uterine bleeding) prevailed in women with adenomyosis and accounted for 76.5% of women, which is an irregular cycle, intermenstrual secretions (51%), heavy menstruation (19%) and bleeding (6 passed with.5%). In women with adenomyosis and external genital endometriosis, nausea (30%), vomiting (11%), fever (7%) during menstruation were most often observed, and leukocytosis (19%), high EChT (17%) and low hemoglobin (27%).).

One of the serious complications of endometriosis is the absence of pregnancy for more than 1 year (primary infertility) and secondary infertility.

A study of the nature of the pain syndrome in women with various forms of endometriosis showed

that additional symptoms of this disease appear depending on the location of the bleeding sites. Thus, for 44.7% of patients with adenomyosis, during sexual intercourse the pain radiating to the anus increased (dysparunia). In 15 women with external genital endometriosis (71.4%), endometriosis was located in the back of Douglas. In such cases, women often complained of pain during defecation. As a result of the location of the focus of endometriosis on the wall of the bladder, there were complaints with pain during urination.

The results of immunological studies showed that the number of CD3 + and CD4 + lymphocytes in the peripheral blood of women with external genital endometriosis was significantly reduced, and the content of CD 16 + cells was significantly increased compared to similar data of healthy women ( $P<0.01$ ). Changes in the phenotypic profile of peripheral lymphocytes with adenomyosis had a different direction (Table 1). In this group of women, we observed a significant decrease in the number of CD8 + cells and an increase in the number of CD 16 + lymphocytes compared to the control group ( $P<0.05$ ).

**Table 1.**  
**Characteristics of the composition of the peripheral blood lymphocyte population in women with endometriosis, ( $M \pm m$ )**

Indicators, %	Control group, n = 14	TGE, n=27	Adenomyosis, n=31
SD3+	55.8 ± 1.9	50.7 ± 1.4*	48.4 ± 1.7*
CD4+	35.6 ± 1.4	31.3 ± 1.1	28.6 ± 1.2*
CD8+	21.8 ± 1.0	20.8 ± 0.8	17.3 ± 0.6*
CD16+	13.6 ± 1.1	8.7 ± 0.5*	21.9 ± 1.3*
CD20+	15.7 ± 0.9	16.3 ± 0.7	13.7 ± 0.8
CD45RA+	54.3 ± 1.4	48.8 ± 1.2*	38.3 ± 1.5*
CD25+	18.3 ± 1.4	10.3 ± 1.4*	15.3 ± 1.4
CD95+	26.8 ± 1.6	19.8 ± 1.6*	23.8 ± 1.6

**Note:** \* value is reliable relative to the control group ( $r < 0.05$  to  $0.001$ )

We also studied the synthesis of serum cytokines in women with external and internal endometriosis. The obtained results show that the level of IL-1 $\beta$  in the group of women with adenomyosis is 3.2 times higher than the control values ( $P<0.01$ ). At the

same time, the level of IL-2 only had a tendency to decrease. The level of anti-inflammatory cytokine – IL-4 is 2.2 times lower than the values of the control group ( $P<0.01$ ).

**Table 3.**  
**Characteristics of cytokine synthesis in peripheral blood serum in women with endometriosis, ( $M \pm m$ )**

Cytokines, pg/ml	Control group, n=14	TGE, n=31	Adenomyosis, n=27
IL-1 $\beta$	21.5 ± 2.2	73.4 ± 2.7*	69.7 ± 2.4*
IL-2	8.95 ± 1.7	5.6 ± 1.5*	7.3 ± 1.8
IL-4	20.9 ± 2.4	15.8 ± 1.6*	9.4 ± 1.3*
IL-6	27.9 ± 2.5	19.8 ± 1.4*	17.4 ± 1.0*
IL-8	16.3 ± 1.9	29.7 ± 2.3*	25.3 ± 2.0*
IFNg	18.7 ± 2.7	9.7 ± 0.9*	15.6 ± 1.0

**Note:** \* value is reliable compared to the control group ( $r < 0.05$ – $0.001$ )

IL-6 and IFN $\gamma$  levels were also decreased compared to the control group ( $R<0.05$ ). The analysis of women with external endometriosis showed that the level of inflammatory cytokines – IL-1 and IL-8 was significantly increased ( $r<0.05$ ), the level of IL-2, IL-4, IL-6 and IFN $\gamma$  was lower than in the control group ( $r <0.05$ ).

Summarizing the data we obtained on the phenotypic, cytokine profile of peripheral blood, it should be noted that the changes in the studied parameters were typical for different forms of endometriosis. It seems that systemic immune disorders in endometriosis are more related to clinical symptoms that differ for a certain form of endometriosis and to a lesser extent reflect the general mechanisms of development of ectopic endometrial foci.

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*Бош мухаррир О.Козлова  
Бадиий мухаррир Ж.Хамдамов  
Компьютерда сахифаловчи С.Султанова*

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