

## ENDOMETRIOSIS AND ITS GLOBAL IMPACT ON THE WOMAN'S BODY

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**Abstract:** Endometriosis is one of the most common gynecological diseases, which reflects the medical and social significance of the problem of effective diagnosis and treatment. To date, the causes, diagnosis and treatment of this disease remain the subject of controversy. The pathogenesis of the disease is multifactorial and has not been studied enough, non-invasive examination methods have a relative diagnostic value, so modern therapeutic approaches often do not provide a complete cure.

**Keyword:** endometriosis, diagnostics, proteins, genes, mikro RNK.

Genital endometriosis remains one of the most urgent problems of modern gynecology. External genital endometriosis (EGE) occurs in 5-10% of women of reproductive age. The frequency of detection of this disease during laparoscopy in order to clarify the cause of infertility is 45-55%. According to modern concepts, this pathology is one of the main causes of female infertility. Demonstrative indicators of the significance of endometriosis for reproductive health include the fertility rate, which is calculated as the ratio of the number of births to the number of women of reproductive age. This coefficient in healthy women is 0.15–0.2, and in patients with endometriosis it is 0.02–0.10. However, the issue of managing patients with infertility after surgical treatment remains relevant. R. Maheux and co-authors believe that the problem of endometriosis is one of the central problems in gynecology, along with inflammatory diseases of the pelvic organs and uterine myoma (Baskakov V.P. et al.; Adamyan L.V. et al.). The frequency of endometriosis does not tend to decrease and currently reaches 10% in the population (Guidice L.N.).

The progressive course of the disease leads to the occurrence of pain, menstrual disorders, infertility, psycho-emotional changes, and, as a result, a decrease in the quality of life of patients (Kira E. F., Ryabtseva M. V.).

The problem of early diagnosis of various forms of endometriosis is currently particularly acute, since there is still no reliable non-invasive diagnostic method or any pathognomonic clinical tests that could make an accurate diagnosis and identify the localization of endometriosis in the early stages of the disease.

External genital endometriosis (EGE) occurs in 5-10% of women of reproductive age. The frequency of detection of this disease during laparoscopy in order to clarify the cause of infertility is 45-55%. According to modern concepts, this pathology is one of the main causes of female infertility. In Russia, endometriosis among the causes of infertility ranks second after tubal-peritoneal infertility. Demonstrative indicators of the significance of endometriosis for reproductive health include the fertility rate, which is calculated as the ratio of the number of births to the number of women of reproductive age.

This coefficient in healthy women is 0.15–0.2, and in patients with endometriosis it is 0.02–0.10. Recently, there has been a tendency to increase the frequency of severe forms of endometriosis. The main complaints of patients with severe forms of endometriosis are chronic pelvic pain, leading to a decrease in the working capacity and quality of life of women, and infertility, when young women cannot perform their reproductive function. This problem has a negative impact in the social, demographic and personal spheres.

According to Research Foundation, up to 17% of women in the study population reported having or suspected endometriosis. The average age of patients at diagnosis is from 28 to 35 years, while the average duration from the onset of symptoms to the diagnosis of endometriosis is about 6 years, and according to some sources - from 7 to 10 and even up to 12 years.

The study of the proteome may revolutionize the understanding of the etiopathogenesis of this disease and its localizations. Since endometriosis is an elusive disease, it is extremely important to identify high-precision markers for the timely diagnosis of this pathological process.

Given the steady increase in the incidence of endometriosis, which leads to a decrease in the quality of life, and sometimes to disability in women of predominantly reproductive age, the lack of reliable clinical criteria and specific, high-precision markers of the disease that can detect endometriosis in the early stages, it is necessary to create new diagnostic criteria and a prognostic model with the purpose of timely diagnosis of endometriosis and its localization.

Endometriosis is a chronic gynecological disease, representing a benign growth outside the uterine cavity of tissue similar in morphological and functional properties to the endometrium. The main clinical manifestations of the disease are persistent pain and infertility. Pain, as one of the symptoms of endometriosis, disrupts not only the physical and psychological state of a woman, but ultimately disrupts her social and reproductive well-being. It should be noted that heterotopias are only similar to endometrial tissue, since the molecular genetic defects that characterize them contribute to infiltrative growth with penetration into surrounding tissues.

Reduced apoptosis and the absence of a connective tissue capsule, as well as the ability to metastasize, make it possible to compare it with a tumor process.

Another important and, at present, generally recognized fact, which has been established both in an experimental model of endometriosis in mice and in the abdominal cavity of patients with endometriosis, can be considered the development of the so-called local aseptic inflammation and dysfunction of immunocompetent cells. Damage to biological molecules (lipids, cell membranes, proteins, etc.) by highly reactive oxygen compounds is the basis for the pathogenesis of many diseases, and endometriosis is no exception.

The similarity of molecular biological indicators of neoangiogenesis, apoptosis, proliferation, invasion and expression of growth factors in areas of endometriosis and autologous hyperplastic endometrium has been proven. Peculiarities of expression of matrix metalloproteinases and their inhibitor in stromal and parenchymal elements were revealed depending on the clinical activity of adenomyosis and recurrence of endometrioid cysts. It has been established that the clinical activity of endometriosis is due to the activity of molecular biological processes involved in the genesis of the disease.

It has been determined that the stromal component in clinically active adenomyosis prevails over the epithelial component not only in quantitative terms, but also in terms of the severity of molecular biological indicators of proliferation, neoangiogenesis, invasion and expression of growth factors, which reflects the degree of maturity of the stroma, indicates remodeling and its stimulating role in the development of internal endometriosis, i.e., confirms the most important, aggressive role of the stroma in the development of adenomyosis.

A method for predicting the clinical activity of adenomyosis has been developed, based on the identification of immunohistochemical indicators of apoptosis, invasion, neoangiogenesis, proliferation and expression of growth factors in endometrial scrapings (taking into account the identified commonality of molecular indicators in adenomyosis tissue and autologous hyperplastic endometrium).

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