

## **Modern View on the Diagnosis and Treatment of Endometriosis**

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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.

**Keywords:** endometriosis, diagnostics, proteins, genes, miRNA

### **Introduction**

Endometriosis is a chronic progressive estrogen-dependent disease that is widespread among women of reproductive age. The prevalence of endometriosis in the general population reaches 10% [1]. Among women with infertility, the prevalence of endometriosis is high and ranges from 25 to 80%, and among women with pelvic pain - from 40 to 80%, according to various authors [3, 5].

Clinical manifestations of endometriosis depend on the localization of the process, the degree of damage to the genitals and adjacent organs, and the individual pain threshold. Without pain (asymptomatic) forms of endometriosis occur even with severe infiltrative lesions, but this is always an exception. The "calling card" of endometriosis is the symptoms directly related to menstruation and the most pronounced during this period: dysmenorrhea (mainly algomenorrhea) - 82.7–83.4%; pain syndrome of varying severity — 48.3–50%; dyspareunia - 33.4–34.5%. Bleeding in endometriosis is also predominantly cyclic in nature - as a rule, hyper-, polymenorrhea is noted, long-term perimenstrual spotting, anemia are also characteristic. Dysuria (urination disorders) and dyschezia (painful and / or difficult defecation) are observed with infiltrative damage to adjacent organs (bladder and / or ureters and intestines, respectively). The literature describes the syndrome of "four dis" (dysmenorrhea, dyspareunia, dysuria, dyschezia), observed during menstruation in patients with endometriosis.

Infertility is one of the most significant (including socially) and painful symptoms of endometriosis, its frequency is 35-40%. Thus, the fertility rate (the ratio of the number of births to the number of women of reproductive age) in healthy women is 0.15-0.20, in patients with endometriosis - 0.02-0.1, i.e. it is an order of magnitude lower [6].

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 [7]. It should be noted that

heterotopias are only similar to endometrial tissue, since the molecular genetic defects that characterize them, promote 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 [2].

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 [4].

Damage to biological molecules (lipids, cell membranes, proteins, etc.) by highly reactive oxygen compounds is the basis in the pathogenesis of the development of many diseases, endometriosis is no exception. place is occupied by biologically active peptides, which include melatonin [10]. Melatonin (MT) is of great interest as the owner of a wide range of different properties: regulation of the reproductive and immune systems, synchronization of seasonal and circadian biorhythms, cytotoxic, sedative, as well as antitumor and antioxidant effects [8].

There is evidence in the literature that over the first half of the last century, the average weight of the epiphysis of a mature fetus has decreased, almost twice [6].

Apparently, this "phenomenon" can be attributed to the epigenetic reactions of the human organism in the population, to the conditions of life in a civilized society, which are characterized by the round-the-clock action of adverse factors. These include the so-called Edison effect (high light "pollution" of night cities), noise from cars and planes, negative information on television, and for many, the complete destruction of the natural human activity-rest and sleep-wake cycles. Thus, the relevance of further research into the function of melatonin in theoretical and practical terms is undeniable [9].

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