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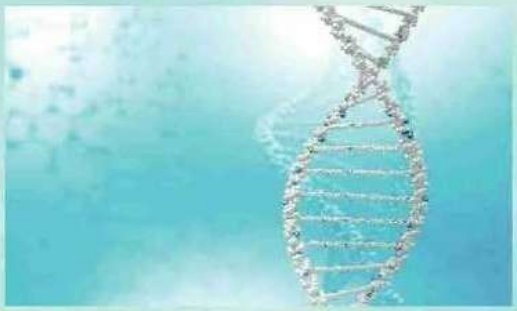

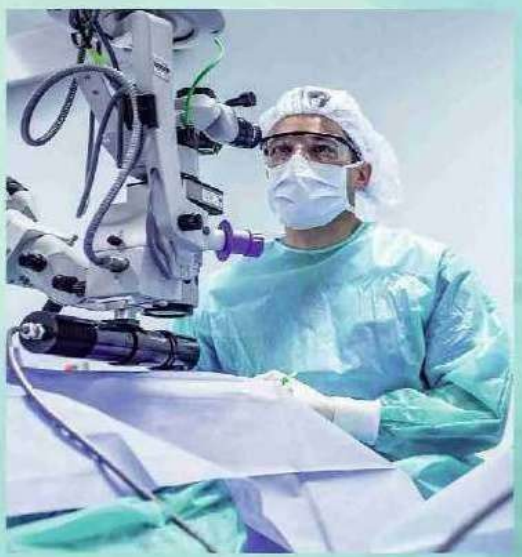

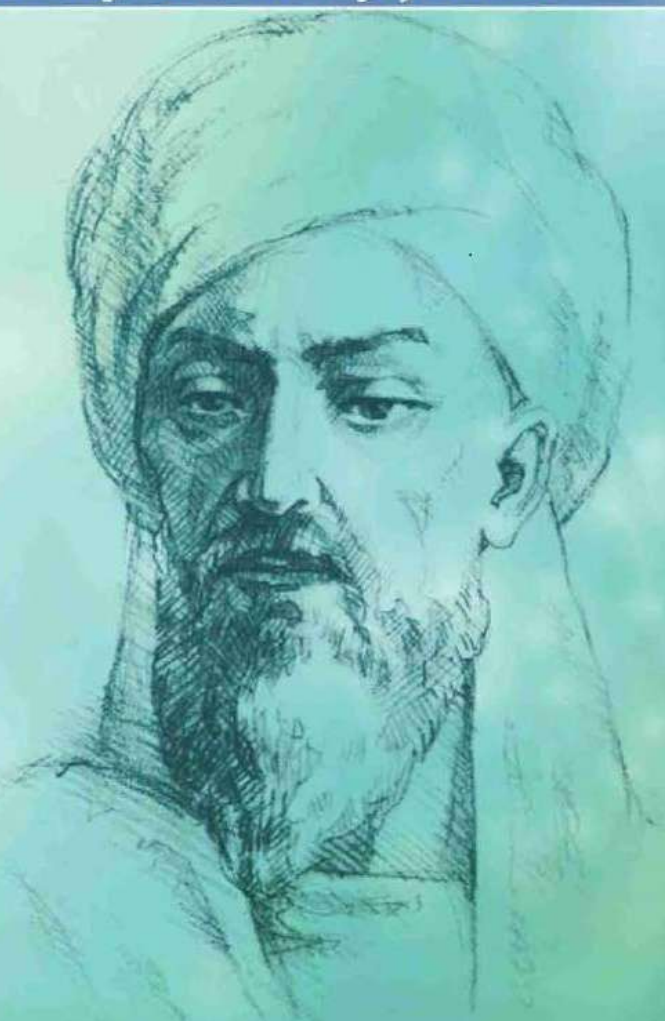

AVICENNA-MED.UZ

ISSN 2181-712X.
EiSSN 2181-2187

4 (54) 2023

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https://newdaymedicine.com
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ТИББИЁТДА ЯНГИ КУН
НОВЫЙ ДЕНЬ В МЕДИЦИНЕ
NEW DAY IN MEDICINE

Илмий-рефератив, маънавий-маърифий журнал
Научно-реферативный,
духовно-просветительский журнал

УЧРЕДИТЕЛИ:

БУХАРСКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ ИНСТИТУТ
ООО «ТИББИЁТДА ЯНГИ КУН»

Национальный медицинский исследовательский центр хирургии имени А.В. Вишневского является генеральным научно-практическим консультантом редакции

Журнал был включен в список журнальных изданий, рецензируемых Высшей Аттестационной Комиссией Республики Узбекистан (Протокол № 201/03 от 30.12.2013 г.)

4 (54)

2023

апрель

Received: 20.03.2023, Accepted: 25.03.2023, Published: 15.04.2023.

UDC 618.14-002-092

EXTERNAL GENITAL ENDOMETRIOSIS AND REPRODUCTIVE POTENTIAL

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✓ ***Resume***

The treatment of endometriosis is the treatment of a chronic condition during the reproductive life that requires a balanced approach based on the symptoms, the patient's expectations and the desire for pregnancy.

Key words: endometriosis, immune cells, infertility, antioxidant protection.

НАРУЖНЫЙ ГЕНИТАЛЬНЫЙ ЭНДОМЕТРИОЗ И РЕПРОДУКТИВНЫЙ ПОТЕНЦИАЛ

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✓ ***Резюме***

Лечение эндометриоза — это лечение хронического состояния в репродуктивной жизни, которое требует сбалансированного подхода, основанного на симптомах, ожиданиях пациентки и желании забеременеть.

Ключевые слова: эндометриоз, иммунные клетки, бесплодие, антиоксидантная защита.

ТАШҚИ ГЕНИТАЛ ЭНДОМЕТРИОЗ ВА РЕПРОДУКТИВ ПОТЕНЦИАЛ

Наджмитдинова Д.А.

Андижон давлат тиббиёт институти Ўзбекистон

✓ ***Резюме***

Эндометриозни даволаш репродуктив ҳаёт давомида сурункали ҳолатни даволаш бўлиб, симптомлар, беморнинг уринишлари ва ҳомиладор бўлиш истагига асосланган мувозанатли ёндашувни талаб қилади.

Калит сўзлар: эндометриоз, иммунитет ҳужайралари, бепуштлик, антиоксидант ҳимоя.

Relevance

Endometriosis is a chronic inflammatory disease defined as the presence of endometrium - like tissue outside the uterus (Kennedy, et al., 2005). Establishment and growth of such endometriotic tissue is estrogen-dependent (Kitawaki, et al., 2002), thus it is mostly found in women of reproductive age although the clinical consequences of endometriosis and its management can last well into postmenopause. Thus, it is estimated that currently at least 190 million women and adolescent girls worldwide are affected by the disease during reproductive age although some women may suffer beyond menopause (Gemmell, et al., 2017, Zondervan, et al., 2020). Whilst not all women with endometriosis are symptomatic, endometriosis-associated pain and infertility are the clinical hallmarks of the disease affecting not only women with endometriosis, but also their partners and families. An impact of endometriosis, and particularly pain symptoms, has been shown on quality of life, but also on a range of activities and life domains including physical functioning, everyday

activities and social life, education and work, sex, intimacy and intimate partnerships, and mental health and emotional wellbeing (Culley, et al., 2013). The same review also reported an impact of infertility and concerns about possible infertility on the patient and the relationship with their partner (Culley, et al., 2013). Finally, endometriosis has a bearing on society in general e.g. through direct and indirect healthcare costs which are comparable to other common diseases such as type 2 diabetes, rheumatoid arthritis, and Crohn's disease (Zondervan, et al., 2018). Endometriosis is defined as a disease characterised by the presence of endometrium-like epithelium and/or stroma outside the endometrium and myometrium, usually with an associated inflammatory process (International working group of AAGL ESGE ESHRE and WES, et al., 2021).

Endometriosis is a female reproductive disorder present in approximately 15% of adult women between the ages of 25-35 (Macer 2012). This disorder occurs when the endometrial tissue (cells that line the uterus) grows in other areas of the body. The etiology of endometriosis is unknown, however, there are three major theories that attempt to explain the origin of this disease. The most commonly accepted theory is that of retrograde menstruation proposed by John A. Sampson, M.D. in 1927 described below (Alford 2010).

Meyer's theory promotes the idea of coelomic metaplasia and Halban's theory focuses on endometrial spreading via the vasculature and lymphatics. Current research also explores other factors potentially influencing the development of endometriosis. These factors include angiogenesis and immune response. Angiogenesis is the formation and growth of new blood vessels. This is required for the development and survival of endometrial tissue; without a blood supply there would be no oxygen or nourishment necessary for maintaining this tissue. Studies have explored the role of angiogenic factors in endometriosis development. Another such factor includes dysfunction of the immunological response to the misplaced endometrium. The dysfunction of necessary immune cells normally recruited to the uterine lumen during the menstrual cycle could play a role in the ability of ectopic endometrial tissue to implant and proliferate. Immune cells such as macrophages and lymphocytes required to clear the normal shedded endometrium could lead to pathology if unable to perform their normal function. Also, environmental factors, such as exposure to environmental 3 toxicants and chemical pollutants, and certain foods such as fatty acids have been studied for their potential role in the development of this disease. Endometriosis is defined as glandular and stromal tissue of the endometrium outside of the uterus (Burney 2012).

For the diagnosis of external genital endometriosis stages I-II, it is advisable to include a joint determination of interleukin-6 and CA-125. Good chances for spontaneous pregnancy after surgical treatment of endometriosis-associated infertility are patients under the age of 32 years, with a duration of infertility up to 3 years, with the absence of ovarian endometriosis or unilateral endometrioid cysts up to 6 cm and intact ovarian reserve. A favorable prognostic ultrasound criterion for the onset of spontaneous pregnancy after removal of endometrioid cysts is the presence of a dominant follicle and the number of antral follicles more. Postoperative management of patients with endometriosis-associated infertility should be supplemented by preconception preparation according to an individually selected scheme with the inclusion of hormonal and vasoactive drugs. Expectant management of endometrioid cysts should be limited due to the high likelihood of damage to the ovarian reserve due to redox imbalance that occurs in the environment of the cyst. Pregravid preparation aimed at adapting the vascular system of the uterus to pregnancy contributes to a decrease in the frequency of the threat of interruption and, as a result, a decrease in reproductive losses in the first trimester of pregnancy in patients with spontaneous pregnancy after laparoscopy for endometriosis-associated infertility.

Purpose of the study: to study external genital endometriosis and reproductive potential in reproductive age

Material and research methods

We examined 120 women. All examined were divided into two groups. The first group consisted of patients with primary infertility (n=83), patients with primary infertility, the second - with secondary infertility (n=37). Exclusion criteria from the study were: age over 35 years, the presence of infertility in a partner, absolute tubal infertility, uterine forms of infertility, other forms of endocrine infertility, except for PCOS. Further, in 90 patients, the possibility of using biochemical markers for the diagnosis of external genital endometriosis (EGE) was determined. To determine the diagnostic value

of these markers, the patients were divided into two groups: 64 patients were included in the EGE group and 26 patients constituted the control group. The control group included healthy women of identical age. The following methods were used: general clinical, immunological, hormonal, instrumental research methods.

Result and discussion

The study included 200 patients with a verified diagnosis of EGE and a spontaneous singleton pregnancy. The patients were divided into two groups. The first included 110 pregnant women - 234 with previous endometriosis-associated infertility, who underwent laparoscopy to restore fertility. The second group included 90 patients who had endometriotic ovarian cysts during pregnancy or during caesarean section. The average age of patients included in group 1 (n=110) was 31.1±0.5 years. The duration of infertility at the time of laparoscopy was from 1 to 8 years (average 3.1±0.3 years). The frequency of primary infertility was 72.7% (80 patients), secondary - 27.3% (30 patients). Among patients with secondary infertility, 19 had a history of modern childbirth, 16 had an induced abortion. Intraoperatively, stage I-II EGE was detected in 87 cases, stage III-IV – in 23 cases (according to the classification of the American Fertility Society). During operative laparoscopy, endometriosis foci were coagulated in 101 patients, infiltrative foci were excised in 35 patients, including retrocervical endometriosis - in 8, endometrioid cysts were excised in 46 cases (39 - unilateral, 7 - bilateral). In all patients, pregnancy occurred no later than 18 months after the surgical treatment; at the time of pregnancy, there were no clinical data for the recurrence of endometriosis. In 56 out of 110 patients (50.9%), pregravid preparation was carried out in the postoperative period according to the above scheme. Group No. 2 was formed from patients with endometrioid cysts (n=90) detected during pregnancy/delivery, the average age of pregnant women was 31.6±4.4 years. When analyzing the obstetric anamnesis of the examined women, it was revealed that the real births were the first in 70 (77.8%) patients, at least one abortion in the anamnesis was performed in 12 (13.3%) patients. An analysis of the outcomes of previous pregnancies showed that recurrent miscarriage occurred in 8 (8.9%) patients, and at least one pregnancy loss occurred in 14 (15.6%) patients. In 72 (80%) patients, endometriotic cysts were detected only during pregnancy, and in 28 (31.1%), ovarian formations were detected only during operative delivery and were an “accidental finding”. The main method for diagnosing endometrioid cysts during pregnancy was ultrasound with color Doppler mapping. **Discussions**. The treatment of endometriosis is the treatment of a chronic condition during the reproductive life that requires a balanced approach based on the symptoms, the patient's expectations and the desire for pregnancy. One of the key points that determine the effectiveness of the treatment of infertility associated with EGE is the timeliness and qualification of surgical treatment. Laparoscopy for infertility is indicated for young patients under the age of 32 years, with a duration of infertility up to 3 years, with no ovarian endometriosis or unilateral endometriomas up to 6 cm and a preserved ovarian reserve. Despite the fact that surgical treatment of endometriosis significantly improves fertility rates, it does not completely restore a woman's reproductive potential and solve all the problems associated with endometriosis. There is a need for combined options for surgical and conservative treatment. Conducting pregravid preparation largely contributes to improving the results of surgery for endometriosis-associated infertility. In a number of patients, the only method to achieve pregnancy is the use of assisted reproductive technologies.

Conclusions

An important link in the pathogenesis of common forms of external genital endometriosis (III-IV stages) is the activation of the local antioxidant function: the antioxidant profile of the peritoneal fluid is 1.5 times higher than those in external genital endometriosis of stages I-II. The state of the systemic antioxidant profile (blood plasma) does not depend on the stage of endometriosis. In the genesis of infertility caused by external genital endometriosis, both the activation of antioxidant protection and the depletion of its reserves in the peritoneal fluid and blood plasma play an important role, that is, the onset of pregnancy with external genital endometriosis is prevented by a lack of antioxidants (in 30% of patients in plasma blood and in 44% in the peritoneal fluid), and their excess (in 48% of patients in the blood plasma and in 35% in the peritoneal fluid). The content of the endometrioid cyst is a strong pro-oxidant - a source of reactive oxygen species, initiating a free radical imbalance in the cyst wall, the degree of which is directly dependent on its size, as well as in the adjacent ovarian tissue. To

eliminate the redox imbalance in the wall of the endometrioid cyst, the antioxidant defense (NADH-dependent cytochrome b5-reductase) is activated, the depletion of the reserves of which leads to a decrease in the ovarian reserve The frequency of oxidative stress in the follicular fluid does not depend on the genesis of infertility and is 50% with external genital endometriosis, 72% in tubal-peritoneal infertility and 45% in late reproductive age of patients undergoing treatment in the IVF program. The most effective in the IVF program in patients with infertility is the use of superovulation stimulation schemes with gonadotropin-releasing hormone antagonists, in which the frequency of oxidative stress in the follicular fluid is reduced to 16% (against 38% when using 255 gonadotropin-releasing hormone agonists). The drug of choice for anesthesia of transvaginal oocyte puncture is sevoflurane, which reduces the frequency of oxidative stress by up to 17% (versus 55% with propofol). The effectiveness of IVF in endometriosis-associated infertility is 40%. The efficiency of restoring natural fertility in infertility caused by external genital endometriosis, regardless of its form, after surgical removal of endometrioid heterotopias is 31% and increases to 54% after complex pregravid preparation. Surgical elimination of endometriosis foci - sources of local oxidative and antioxidant stress - leads to the restoration of free-radical balance and promotes pregnancy in 68% of patients with an initial lack of antioxidant protection and in 62% with a high level of antioxidant protection.

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Entered 20.03.2023