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ENDOMETRIOSIS-SCLEROTHERAPY FOR REDUCING AMH

Abstract: This paper presents an analysis of literature data and a review of modern approaches to the treatment of endometrioid ovarian cysts from the perspective of preserving and restoring fertility. The mechanisms of influence of endometrioma on the anatomy and physiology of the ovary are considered. A comparison was made of conservative and surgical approaches with minimally invasive techniques: aspiration, sclerotherapy of endometrioid cysts. Attention is paid to the effectiveness of assisted reproductive technology programs in patients after treatment of endometriomas with various methods.

Keywords: Endometrioma, ovarian reserve, endometriosis, cystectomy, in vitro fertilization, infertility, sclerotherapy, cyst puncture.

INTRODUCTION

An increasing number of studies are devoted to the negative impact of EOC on ovarian physiology. A healthy ovary differs from an ovary with endometrioma in a number of morphological and functional parameters [2]. It has been shown that the contents of the cyst have a toxic effect on the surrounding tissue. Inside the EOC, compared to other benign ovarian formations, a higher content of inflammatory molecules, iron, reactive oxygen species, and transforming growth factor- β (TGF- β) is noted [2]. Activation of TGF- β together with reactive oxygen species leads to the launch of a fibrogenic response and proteolytic activity of enzymes that destroy the ovarian stroma.

MATERIALS AND METHODS

Noteworthy is the decrease in the quality of oocytes obtained in ART programs in women with endometriomas. It is known that changes in the biochemical parameters of follicular fluid in peritoneal endometriosis affect the quality of oocytes, but the question of whether endometrioma has a similar effect on the composition of follicular fluid remains controversial [3]. According to domestic authors [4], in patients with infertility and external genital endometriosis (EGE) of 1-2 degrees, an increase in the concentration of acute-phase proteins in the blood serum, a decrease in lactoferrin and interleukin-8 with a simultaneous increase in the level of IFN- γ in the follicular fluid are noted - bones. The authors associated an increase in the level of serum albumin at the time of follicle puncture in the IVF program with a negative outcome of embryo transfer in 80% of patients with stage 1-2 NGE [2].

RESULTS AND DISCUSSION

The most reliable and widely used marker of ovarian reserve is the level of anti-Mullerian hormone (AMH), which is used due to its stability throughout the menstrual cycle and after hormonal changes or treatment [3]. A recent meta-analysis of 17 studies and more than 2500 patients showed that AMH levels among women with ECO are significantly reduced compared to control groups (healthy ovaries or benign ovarian cysts) [2]. At the same time, many

researchers are wondering about the mechanism of the influence of ECO on the ovarian reserve, for example, Streuli I. et al. [4] note a decrease in AMH levels only among those operated on for ECO, regardless of the presence of a cyst at the time of the study. In addition, it was noted that large-diameter cysts significantly change the level of AMH, in contrast to small endometriomas [3], and with unilateral EOC, the intact ovary can take on a compensatory function [4]. Despite a certain number of controversies, however, most authors agree with the statement that the presence of ECO reduces a woman's fertile potential [4].

Surgical treatment of patients with endometriomas is a subject of debate. A recent study showed that women with ECO demonstrate a progressive decline in serum AMH levels faster than age-matched healthy women [3]. Given the pathogenesis of endometrioma and its presumed impact on ovarian reserve, early diagnosis and subsequent early treatment are preferable to avoid further traumatic effects on the ovary [2].

Currently, the beneficial role of surgical excision of the ECJ is disputed due to a number of studies showing a decrease in ovarian reserve after surgery. The detrimental effect of cystectomy on ovarian reserve is reflected in a further decrease in AMH levels after surgery. A recent systematic review and meta-analysis of the literature confirmed the findings of previous studies and demonstrated the negative impact of surgical excision of endometrioma on ovarian reserve. In the long-term postoperative period (9-12 months after the intervention), patients experienced a decrease in AMH levels by 39.5% and 57%, respectively, for unilateral and bilateral EOC.

Factors influencing postoperative decline in ovarian reserve remain a matter of debate. The woman's age at the time of surgery does not appear to be associated with the rate of decline in AMH [3]. Some researchers report that there is a positive correlation between preoperative AMH levels and the rate of its postoperative decline [3]. It is possible that with a high ovarian reserve, a greater number of primordial follicles are lost during surgery, which entails a more intense decrease in AMH levels. At the same time, patients with high baseline AMH concentrations may have a higher ovarian reserve after surgery than patients with initially low AMH levels, since they have a sufficient number of follicles in the intact ovary.

CONCLUSION

Today, the treatment of ECO is a pressing problem for obstetricians and gynecologists, and the question of choosing the optimal treatment method remains open. The need for surgical interventions on the ovaries is increasingly becoming a subject of controversy; the search for ways to reduce trauma and preserve the ovarian reserve when treating ECO in women of fertile age continues.

When choosing therapy for ECO, it is necessary to take into account the clinical manifestations of the disease and reproductive plans of the family. The patient's medical history, her age, the severity of the disease, and the level of decrease in ovarian reserve serve as the basis for individualizing approaches to the management of patients with endometrioid ovarian cysts.

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