Mielikhova T.V, Posokhova I.V, Sosonny D.I

**EARLY DIAGNOSIS OF ADENOMIOSIS USING IMMUNOGOCHEMICAL MARKERS**

Kharkiv National Medical University

Department of Obstetrics and Gynecology №2

Research adviser prof. VV Lazurenko

**Introduction.** Endometriosis is in third place after inflammatory processes and uterine leiomyoma in the general structure of gynecological diseases [1, 2]. Uterine body endometriosis (adenomyosis) is a hormone-dependent benign invasion of the endometrium into the myometrium that leads to hyperplasia and hypertrophy of smooth muscle tissues [3, 4]. In the structure of genital endometriosis, the incidence of adenomyosis is 70–90% [2, 5].

**Aim.** The study of specific markers of progression of adenomyosis to improve its early diagnosis, namely the study of vascular endothelial growth factor (VEGF) and Ki-67 proliferation index.

**Materials and methods.** The study involved 61 women, aged 27 to 53, who underwent hysteroscopic surgery. The patients were divided into the following groups: the first study group included 16 patients with grade I – II adenomyosis; Group II comparisons - consisted of 18 patients with adenomyosis in combination with hyperplastic processes of the endometrium (polyp, endometrial hyperplasia); Group III mapping - included 17 cases of hyperplastic endometrial processes; Group IV is a control group consisting of 10 patients with a diagnosis of infertility I (endocrine genesis, polycystic ovary syndrome, uterine cavity sections).

In the first phase of the study, patients from all groups were subjected to a standard clinical laboratory examination, namely: complaint collection, medical history, objective status evaluation, bimanual vaginal examination, ultrasound examination and hormonal status assessment.

The second stage was a hysteroscopic surgery, during which patients in the II and III study groups were first removed with polyps or endometrial hyperplasia, and then the patients of all the study groups were taken aiming endometrial biopsy with underlying part of the myometrium polyp or hyperplasia.

**Results.** Patients in the study group I had an average age of 38.2 ± 1.1 years. The clinical picture was dominated by pain and menstrual disorders. In 18.8% of women the disease was asymptomatic. Complaints about recurrent pelvic pain unrelated to menstruation or sexual activity were 81.3% (n = 13), dysmenorrhea was observed in 75% (n = 12), and dyspareunia in 68.8% ( n = 11).

In patients of the study group II, the average age was 42.2 ± 1.1 years. Complaints about recurrent pelvic pain unrelated to menstruation or intercourse showed 66.6% (n = 12), dysmenorrhea was observed in 72.2% (n = 13), dyspareunia in 61.1 % (n = 11). At the same time 94.4% of them noted profuse blood flow from the genital tract during menstruation, 77.7% - profuse blood flow with clots, in 72.2% of menstruation lasted more than 7 days. 55.5% of women reported having menstrual blood discharge.

Patients in the study group III had an average age of 43.8 ± 1.1 years. The clinical picture was dominated by disorders of the menstrual cycle. Dysmenorrhea was observed in 58.8% (n = 10), 94.1% had abundant genital bleeding during menstruation, 76.4% had profuse bloodstream with clots, 82.3% had longer menstruation. 7 days. 58.8% of women noted that menstrual blood was excreted.
Expression of Ki-67 antigen was positive in nuclei of epithelial cells of glands of foci of adenomyosis and, to a lesser extent, of cells of cytogenic stroma. Higher values ​​of expression were noted in the epithelium of glands of superficially located heterotopias - at adenomyosis of I-II degrees, in comparison with other studied groups (Table 1).

Тable 1

Significance of Ki-67 antigen expression in the study groups

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | I groupМ±m | II groupМ±m | III groupМ±m | IV groupМ±m |
| The epithelium of the glands | 12,2±0,03 \* | 11,7±0,02 \* | 5,1±0,02 \* | 1,4±0,03 |
| Cytogenic stroma | 1,9±0,02 \* | 1,65±0,02 \* | 4,3±0,03 \* | 0,4±0,02 |

Note: \* p˂0.05 compared to controls.

Positive expression of vascular endothelial growth factor was detected in membranes of epitheliocytes of glands of foci of adenomyosis and basal layer of endometrium in materials I (21,74 ± 0,05) and II (20,04 ± 0,05) of the studied groups.

In this case, a more pronounced expression was characteristic of the epithelial component of endometrioid heterotopias (Table 2). In the endometrial functional layer, the expression of this marker was absent.

**Conclusion.** Thus, on the basis of the obtained data, evidence of increased expression of Ki-67 proliferation protein and intensification of the neovascularization process in endometrial biopsies with underlying myometrium in adenomyosis and under conditions of combination of adenomyosis with hyperplastic processes, endometrial, be used as a diagnostic in detecting adenomyosis, including associated with hyperplastic endometrial processes.

The prospect of our further research in this area is to study other markers of progression of adenomyosis in order to improve its early diagnosis on material obtained not only invasively but also non-invasively (blood serum), as well as finding methods for diagnosing the preclinical stage of the disease.

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