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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

THE EFFECTIVENESS OF ALTERNATIVE METHODS FOR THE DIAGNOSIS AND TREATMENT OF GENITAL ENDOMETRIOSIS

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Scientific field: Medicine

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OVERVIEW OF THE WORK

Relevance of the topic. Today, endometriosis occupies one of the leading places in the pathology of the gynecological profile, it is a fairly common disease throughout the world. Endometriosis is a benign gynecological disease that affects 6-10% of women of reproductive age. The authors note that in recent years, endometriosis has ranked third among gynecological diseases, affecting about 50% of women of reproductive age and causing not only structural changes in the organs of the reproductive system, but also violations of their functions, leading to infertility, psycho-emotional disorders and a decrease in the quality of life It should be noted that even after careful removal of endometriosis foci within a year, the frequency of recurrence of both the foci themselves and clinical manifestations varies from 10 to 55%, and with each subsequent year the frequency increases by 10%[1].

It should be noted that even after careful removal of endometriosis foci during the year, the frequency of recurrence of both the foci themselves and clinical manifestations varies from 10 to 55%, and with each subsequent year the frequency increases by 10%[2].

Infertility in endometriosis correlates with the severity of the disease. The negative impact on fertility is probably associated with impaired ovarian function (with endometrioid ovarian cysts), a decrease in the quality of oocytes, the presence of subclinical pelvioperitonitis, and a decrease in the likelihood of implantation of the ovum due to a decrease in endometrial receptivity[3].

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[1]Алехина, А.Г. Генитальный эндометриоз и репродуктивное здоровье женщины / А.Г. Алехина, Ю.А. Петров, А.Е. Блесманович // - Москва: Главврач Юга России, - 2019. №4 (68), - с.18-21

[2] Оразов М.Р., Радзинский В.Е., Хамошина М.Б. и др. Эффективность лечения бесплодия, обусловленного рецидивирующим наружным генитальным эндометриозом // Гинекология, - 2019. №1, - с. 38-43

[3] Борисова, А.В. Диагностика наружного генитального эндометриоза с помощью методов масс-спектрометрии (обзор литературы) / А.В. Борисова,

The variety of treatments available, combined with the complexity of this disease, results in considerable discrepancy in recommendations. As previously shown, there is only 7% agreement between widely used recommendations, and none of them follow the Research and Evaluation II (AGREE-II) guidelines evaluation protocol[4].

Therapeutic and diagnostic laparoscopy is the leading method for the diagnosis and treatment of external genital enometriosis[5].

Surgical treatment of endometriosis is the "gold" standard of treatment and significantly outperforms therapy in terms of results, helps to prevent the development of such formidable complications as hydronephrosis and renal failure[6].

Medical therapy in women with endometriosis should be long-term, capable of providing symptomatic suppression without any medical interruption[7].

The diagnosis of endometriosis is suspected based on the history, symptoms and signs, confirmed by physical examination and imaging techniques, and finally confirmed by histological examination of specimens collected during[8].

The presence of a number of disadvantages and side effects of existing methods of treatment, both surgical and conservative, as

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А.В. Козаченко, Н.Л. Стародубцева [и др.] // Проблемы репродукции. – Москва: - 2015. №6, - с.59-68

[4] Kalaitzopoulos, D.R. Samartzis N, Kolovos GN. [et al.] Treatment of endometriosis: a review with comparison of 8 guidelines / D.R. Kalaitzopoulos, N.Samartzis, G.N. Kolovos [et al.] // BMC Womens Health. – 2021. 21(1), p.1-

[5] Гущин, В.А. Генитальный эндометриоз, диагностика и лечение / В.А. Гущин, А.С. Бичурина А.В., Коряушкина // - Москва: Журнал акушерства и женских болезней, - 2017. спецвыпуск, - с. 106-107

[6] Украинец, Р.В. Эндометриоз мочеточника с позиций имплантационной теории: некоторые аспекты патогенеза и клинической картины / Р.В. Украинец, Ю.С. Корнева // Урология, – 2021. №2, – с. 126-130

[7] Di Guardo, F. Management of women affected by endometriosis: Are we stepping forward? / F. Di Guardo, M. Shah, M.C. Cerana [et al.] // Journal of Endometriosis and Pelvic Pain Disorders, - 2019. 11(2), - p.77-84

[8] Dunselman, G.A.J. ESHRE guideline: management of women with endometriosis / G.A.J. Dunselman, N. Vermeulen, C. Becker [et al.] // Human Reproduction, 2014. 29 (3), - p. 400–412

well as the importance of long-term therapy of the disease justify the need to search for new approaches[9].

The modern approach to the treatment of patients with endometriosis consists of a combination of the surgical method and hormone modulating therapy. Despite the availability of innovative methods for the surgical treatment of endometriosis and the development of drug therapy methods, the number of severe forms of the disease and the number of relapses do not decrease[10].

Separate studies on this topic are few, leading to versatile and conflicting assessments of treatment outcomes. In this connection, it is advisable to conduct a clinical diagnostic study in order to obtain effective and informative assessments of the APC method, depending on the form of endometriosis.

Object and subject of the research: The object of the study was a woman with genital endometriosis who received traditional methods of treatment using combined surgical and hormonal therapy, as well as using broadband radio wave surgery with argon plasma coagulation. The subject of observation were women with external and internal endometriosis.

The purpose of the research: to work out a modern approach to the diagnosis and treatment of endometriosis, depending on the severity of the disease.

Research objectives:

1.To study the frequency of occurrence of genital endometriosis, depending on the form and severity of the disease.

2.To study the features of the course of genital endometriosis in modern conditions.

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[9] Ярмолинская, М.И. Перспективы сочетанного применения транс-ресвератрола и индол-3-карбинола при эндометриозе / Ярмолинская М.И., Шалина М.А., Беганова А.К. [и др.] // Акушерство и Гинекология, –2022. №4, – с. 14-24

[10] Ярмолинская М.И., Денисова А.С. Патогенетическое обоснование применения колекальциферола в комбинированной терапии наружного генитального эндометриоза / Ярмолинская М.И., Денисова А.С. // – Москва: Эффективная фармакотерапия, – 2022. – №18, – с. 24-29

3.To study the role of CA125 as a marker of genital endometriosis.

4.To study the effectiveness of the treatment of genital endomtriosis using generally accepted combination therapy (combination of dienogest and traditional surgical treatment)

5.To study the effectiveness of an alternative method of treating genital endometriosis using broadband radiofrequency surgery and argon plasma ablation.

6.To make a comparative assessment of the immediate and long-term results of various methods of treatment of genital endometriosis.

Research methods: To solve the problems set in the dissertation, modern research methods were used in the work. A comprehensive examination included general clinical, instrumental, laboratory and special research methods.

Scientific novelty of the research: A comprehensive research work has been carried out using modern, informative methods for diagnosing and treating women of various age groups with genital endometriosis. Factors contributing to the development of genital endometriosis have been identified and specified. It was used Huskisson visual analogue scale (VAS), MacLaverty C.M., Shaw R.W. scales, it was given a systematic informative assessment of the clinical picture of the disease, taking into account the severity, prevalence and form of the endometrioid process. It has been revealed the role of the CA125 antigen in the development of genital endometriosis. It has been shown that the activity of the CA125 marker directly depends on the stage, form and prevalence of endometrioid lesions. It was carried out a comparative analysis of the results of treatment of genital endometriosis against the background of various methods of therapy. An innovative technology of radiofrequency surgery and argon plasma coagulation was tested and applied in the treatment of genital endometriosis using the FOTEK EA 141M apparatus. It was found highly efficiency, safety, and painlessness, which indicates the need for its widespread use during treatment of genital endometriosis. A new algorithm for the management of patients with genital

endometriosis has been developed and proposed, taking into account the data obtained during the study.

Practical significance: It is shown the frequency of occurrence of genital endometriosis depending on the severity and form of the pathological process. It is determined the depth and area of distribution of endometriotic foci, depending on the stages of the course of the disease. Clinical, laboratory and instrumental changes have been identified and specified, which allowed to predict the course of endometriosis and to accept the decision of the need to choose a treatment strategy.

Following the manifestations of the endometrioid process in the pelvic organs, the effectiveness of the application of surgical intervention is based on the subsequent use of hormonal therapy.

In severe form of endometriosis in combination with ovarian cysts, it was revealed an increase in the level of the CA125 antigen, which allows us to regard this indicator as a predictor of the development of relapses and as an additional effective tool in the complex diagnosis of the disease.

Argon plasma coagulation (APC) is a painless, accessible, highly effective and perspective method, which dictates the need for its use in the treatment of genital endometriosis, depending on the severity of the course. APC, being a physic-surgical method, allows for diagnostics, biopsy, non-contact argon plasma ablation of endometrioid heterotopias in a short period of time without scar formation. APC is a safe method, which makes it possible to widely use this tactic in everyday outpatient and inpatient practice. The current tactics of treating genital endometriosis made it possible to reduce the percentage of relapses, complications and unsatisfactory results, which contributed to the reduction of bed-days in the hospital.

Main points submitted for the thesis defense:

1. A burdened obstetric and gynecological history, depending on the woman's fertile age, contributes to the formation of risk factors for the development of genital endometriosis of varying severity.

2. The severity of the disease and the progression of genital endometriosis directly depends on the depth, area, prevalence and presence of adhesions in the pelvis.

3. The activity of the CA125 glycoprotein antigen directly depends on the stage, form, prevalence and severity of the endometrioid process, which indicates its diagnostic informativeness.

4. The use of generally accepted operational tactics followed by hormone therapy in the treatment of GE showed relief of the clinical picture, a decrease in the frequency of relapses, and an improvement in the quality of life of women.

5. Broadband radio wave surgery and argon plasma coagulation is an effective and safe method for the treatment of GE, which is advisable to use it in everyday practice.

6. The nature and choice of regime of the device "FOTEK EA 141M" depends on the severity of the course, depth, area, prevalence of the endometrioid process of the genital tract.

Approbation. The results of the research were discussed at the III International Scientific and Practical Conference (Ukraine, 2018), at the I International Congress on Obstetrics and Gynecology "Innovative Technologies in Obstetrics and Gynecology" (Baku, 2018).

The initial discussion of the work was held at the Scientific Research Institute of Obstetrics and Gynecology on June 08, 2021 (protocol No. 8). Approbation of the work was carried out at the Scientific Seminar of the Dissertation Council FD 2.11 (June 30, 2022, protocol No. 7) of the Azerbaijan State Institute for the Improvement of Doctors named after. A. Aliyeva.

Research Site. The dissertation work was performed at the practice of the Scientific Research Institute of Obstetrics and Gynecology.

Publications. The key provisions of the dissertation work are reflected in 8 scientific works including 5 articles (including 2 abroad) and 3 theses.

Structure and length. The dissertation is presented on 144 pages (190.514 symbols), consists of entries (9455 symbols),

literature review (30 pages, 50.912 symbols), materials and methods of studies (18.774 symbols), results of own research (14 pages, 19,831 symbols), discussion of the obtained results (10 pages, 13,970 symbols and 18 pages of 53,010 symbols), conclusion (15 symbols, 23,654 symbols), conclusions (2 pages, 3.554 symbols), practice recommendations (2 pages 1.793 symbols). Dissertation is illustrated with 26 tables, 20 drawings, 1 scheme. Dissertation is illustrated with 26 tables, 20 drawings, 1 scheme, consists of entries, Bibliographic index includes (157 sources) 150 foreign, 7 domestic sources of literature.

MATERIALS AND RESEARCH METHODS

The research work was carried out in the Scientific Research Institute of Obstetrics and Gynecology during 2015-2021 years.

In accordance with the tasks of this study, 120 patients of reproductive age with genital endometriosis were involved, which were divided into II main groups, depending on the proposed therapy: Group I - 70 patients with genital endometriosis who received traditional methods of treatment using combined surgical and subsequent hormonal therapy with dienogest (retrospective studies); Group II - 50 patients with genital endometriosis, whose treatment included the use of broadband radiofr wave surgery with argon plasma coagulation broadband radiofrequency surgery with argon plasma coagulation (prospective studies). The control group consisted of 30 conditionally healthy fertile women without this pathology. Retro- and prospective studies included women with external and internal endometriosis.

It was used the following methods for solve the tasks: clinical and anamnestic, hormonal (the levels of LH, FSH, prolactin, progesterone, estradiol, LH / FSH ratio were determined), the values of the CA 125 antigen in blood serum were determined by the ELISA method, instrumental and special methods research. Clinical studies included: collection and study of the features of the obstetric and gynecological history of patients, standard gynecological examination and retrovaginal examination; an

assessment of the state of health according to functional systems was carried out. It was used the following scales to assess the degree of pain syndrome: visual analogue scale (VAS) recommended by IMMPACT (1998) for quantitative assessment of pain symptoms; MacLaverty S.M., Shaw R.W. (1995) scale to determine the cause of pelvic pain (nature, frequency of occurrence); the McGill Pain Questionnaire (MPQ) (1986) modified by V. V. Kuzmenko; the classification of Hulka J.F., Reicli H. (1998) was applied to determine the severity of the adhesive process of the pelvic organs.

The stages of the spread of endometriosis were assessed according to the classifications: American Association of Gynecologic Laparoscopists (AAGL), combining the classification of r-AFS (1996) and the severity of clinical symptoms; ENZIAN (2012, revised in 2019), reflecting the localization, stages of development and depth of spread of genital endometriosis (According to the Endometriosis Research Foundation, SEF) [58; 59; 60]. The individual cards have been worked out. Instrumental research methods included: colposcopy (according to indications); transvaginal and transabdominal ultrasound of the pelvic organs (device "LOGIK 500GE" and "ME DISONSA-8000" Korea with the use of electronic sensors with a frequency of 5; 7 MHz on the 6-7th day of the menstrual cycle); urography (according to indications); x-ray examination (RH) of the pelvic organs; hysterosalpingography (according to indications); hysteroscopy (assessment of the condition of the uterus and fallopian tubes). A consultation of narrow specialists was held: an endocrinologist, a therapist, a gastroenterologist according to indications. We also used laparoscopy to diagnose the genital form of endometrioid disease.

For the treatment of endometriosis in patients of the 1st group, we used a combined treatment, which consists in performing a standard surgical intervention followed by the use of hormone therapy. In particular, we used dienogest as a hormonal therapy. Dienogest was prescribed according to the generally accepted scheme in a daily dose of 2 mg daily for 6 months. In our research,

we applied an innovative technology of broadband surgery and argon plasma coagulation using the FOTEK EA 141M apparatus (produced by FOTEK LLC, Russia) for the treatment of patients of the 2nd group.

All obtained data were processed using statistical research methods using the covariance method, Student's t-test, Fisher χ^2 test. For statistical analysis, a biometric method was used (the "STATISTICA-10" software package, graphs were built using "ORIGN-6.1").

THE RESULTS AND THEIR DISCUSSION

Clinical, laboratory and diagnostic examinations of patients revealed the following forms of genital endometriosis: peritoneal endometriosis was detected in 51 (42.5%) cases; extraperitoneal endometriosis - in 38 (31.7%) cases; endometriosis of the body of the uterus - in 19 (15.8%) cases; retrocervical endometriosis was noted in 12 (10%) cases, respectively. Considering the various forms of localization of endometriosis in the examined patients, it should be noted that ovarian endometriosis was noted in 21 cases, which amounted to 17,5%; endometriotic ovarian cysts - 25 (20,8%) cases; endometriosis of the fallopian tubes - 5 (4,2%) cases. Endometriosis of the vagina and vulva was registered in 17 (14,2%) cases; endometriosis of the vaginal part of the cervix 15 (12,5%) cases. According to the ENZIAN classification, the parameters of the area and depth of endometrioid heteropathies were assessed. In particular: Stage I (1-5 points) was noted in 42 (35%) cases; stage II (6-15 points) in 47 (39,2%) cases; Stage III (16-40 points) - 29 (24,2%); Stage IV (more than 40 points) - in 2 (1,6%) cases, respectively.

Among extragenital diseases, endocrine diseases were noted in 31 (25.8%) cases: diabetes mellitus in 13 (10.8%) cases, thyroid diseases (hypothyroidism, goiter) in 18 (15%) cases. In second place were diseases of the urinary system, which accounted for 21 (17.5%) cases, mainly pyelonephritis was registered in 11 (9.2%) cases and cystitis - 10 (8.3%) cases, respectively. Among diseases

of the gastrointestinal tract, gastritis was noted in 12 (10%) cases; cholecystitis in 6(5%) cases. Anemia, mainly iron deficiency, was noted in 23 (19.2%) cases, arterial hypertension in 16 (13.3%) cases, hypotension in 11 (9.2%) cases, respectively.

Analysis of anamnestic data showed: the average age of appearance of menarche was 12.6±1.6 years; 50 (41.6%) had a menstrual cycle disorder. It should be noted that in most patients, menarche was accompanied by pain of varying intensity and stability, which contributed to the intake of analgesic drugs.

Among the leading clinical symptoms in patients with GE were noted: pain syndrome, determined in 115 (95.8%) cases; menstrual dysfunction was observed in every second woman, which in general amounted to 50 (41.6%) cases, respectively. Evaluation of the intensity of pain in patients with GE according to the VAS and scales of MacLaverty S.M., Shaw R.W. made it possible to reveal their expression. So, mild pain, representing a mild degree (1-3 points) was registered in 54 patients, which accounted for 45%; moderate pain (average degree 4-7 points) - in 56 (46.7%); unbearable pain (severe degree of 8-10 points) - 10 (8.3%) women, respectively. On average, the intensity of pain on this scale was 7 sm. It must be emphasized that in ovarian endometriosis, the intensity of pain was higher on average by 1,5-1,7 sm compared to other forms of GE.

Consequently, the intensity of the pain syndrome directly depends on the localization of the endometrial process. Dyspareunia occurred in almost every forth patient and was registered in 25 (20,8%) cases. Hyperpolymenorrhea was observed in 36 (30%) cases, chronic pelvic pain not associated with the menstrual cycle, it was observed in 20 (16,7%) cases. Pre- and postmenstrual spotting was noted in 14 (11,6%) cases, respectively. In the majority of patients with GE, which amounted to 82 (68,3%) cases, the uterus was of normal size during gynecological examination. Tumor-like formations in the area of the appendages were detected in 34 (66,6%) cases; endometrioid cysts (unilateral) were detected in 21 (41,2%) cases, while bilateral ones were noted in 13 (25,4%) cases, respectively, which was confirmed by ultrasound.

According to the ultrasound data, structural changes in the endometrium and myometrium were revealed in patients with endometriosis, and heterogeneous echo-structural changes in the retrocervical tissue were visualized. Primary infertility St (I) was noted in 27 (22,5%) cases; secondary infertility St (II) was registered in 10 (8,3%) cases, respectively. It should be noted that infertility occurred mainly with endometriosis of the ovaries, fallopian tubes, and pelvic peritoneum. It should be emphasized that HE was diagnosed within 3-4 years from the diagnosis of infertility. It is important to note that 32% of patients did not seek medical help for 2 years, since the painful course of the menstrual cycle was not associated with the presence of any disease.

Gynecological studies revealed an increase in the volume of the uterus in 38 (31.6%) cases; tumor-like formations in the area of the appendages are unilateral in 27 (22.5%) cases, bilateral - in 20 (16.6%) cases, of a rigid elastic consistency, with a smooth surface, limited in mobility and painful on palpation. Endometrioid cysts: unilateral in 21 (41.2%) cases; bilateral in 13 (25.4%) cases. Compaction and tension of the sacro-uterine ligaments were determined in 58 (48.3%) cases, pain in the posterior fornix - in 44 (36.6%) cases, respectively. Ultrasound showed: rounded or oval anechoic liquid formations of the ovaries with even fuzzy contours, thick-walled smooth capsule, the diameter of the formations varied.

Thus, a detailed assessment of the clinical manifestations of GE in conjunction with diagnostic and anamnestic data is of particular importance, since it made it possible to assess the severity of the course of this disease. Clinical and diagnostic studies have shown that GE is a recurrent disease and is characterized by a chronic course.

According to the tasks set, we assessed the diagnostic information content of the CA125 antigen in the blood serum of patients with GE before and after treatment, as well as in practically healthy women in the control group. It is well known that CA125 is a glycoprotein antigen that is used to detect many oncogenic diseases.

It is important to note that SA 125 is normally produced by epithelial cells, occurs in the endometrium, in normal epithelium of the fallopian tubes and cervix, contains a large amount of carbohydrates. Statistical analysis of the results showed a deviation of the level marker CA125 in the blood plasma of patients with GE. Thus, before treatment with the level of SA 125 ranged from 40,3±0,67 Unit / ml, then after treatment the level of this marker was 20,46±0,29 Unit / ml by comparison with control group 20,86±0,39 Ed / ml respectively. Thus, the glycoprotein marker Ca125 can be evaluated as a predictor of GE and the degree of its activity depends on the stage, form and prevalence of the endometrioid process. Our studies have shown that the more severe the endometrioid process, the higher the level of SA 125, especially when combining endometriosis with cysts of the ovaries, adenomyosis, benign tumors (Table).

Table. Evaluation of the level of the CA-125 marker in patients with genital endometriosis against the background of the combined

Marker	Main group		Control group	P
	Before treatment	After treatment		
Blood CA125 level (U/ml)	40,3±0,67	22,56±0,29	20,86±0,39	1-2<0,01 1-3<0,01 2-3>0,05

One of the tasks assigned to our work was the study of hormonal background in patients with genital endometriosis. To fulfill this task, we studied the levels of the following hormones in the blood of the studied women: LH, FSH, the ratio of the levels of the hormones LG / FSH, prolactin, estradiol and progesterone. Examination of the hormonal background of the GE in this contingent of women revealed an increase in the level of LH, the ratio of LG / FSH, estradiol in 100% of cases, a decrease in the level of prolactin, progesterone. In particular, before treatment, LH

levels fluctuated in the range of 7,83±0,04 mIU / ml, marked decrease in FSH hormone levels in the range of 5,90±0,08 mIU/ml, LH / FSH hormone levels decreased and intervals decreased 1,24±0,01. It was also noted that the reduction of prolactin: before treatment 210,0±1,52 mIU / ml and the actual reduction of the level of progesterone: before treatment its level was 8,71±0,13 nmol / ml. The dressing was found to increase the estradiol hormone before treatment and averaged 269,0±1,22 pg/mg.

Thus, when the GE changes the parameters of the hormonal background, the patient once again shows a violation of the hypothalamic-pituitary-ovarian system.

Consequently, failure of the hormonal system is reflected in the violation of their imbalance in the secretion of the side of increasing or decreasing, which leads to the change of the definite link, which provokes the activation of the functioning of all links of the hypothalamic-pituitary-ovarian system, leading to the eventual disruption of the reproductive function of women.

The obtained results dictate the need to search for innovative solutions in questions related to treatment, which require a more acceptable method in the selection of effective tactics, which will allow to avoid the development of irreversible development of irreversible consequences. It is necessary to note that on this day, the choice of effective tactics of treatment of GE continues to be the subject of a wide discussion, so that complete success in this area is difficult to achieve. Probably, the difficulties are connected, first of all, with the long-term, chronic, progressive course of GE, late referral of patients for medical assistance, etc. Consequently, the choice of specific tactics of treatment of GE is relevant and represents a scientific and practical interest.

Teaching the above, for the treatment of endometriosis we used 2 schemes of combined treatment: 1) traditional surgical intervention with the subsequent use of hormonal therapy, which consisted of retrospective. 2) argonoplasmic coagulation (ablation) with the use of the device "FOTEK EA 141M", followed by the use of hormonal therapy. This treatment regimen was applied to patients with GE, consisting of prospective studies. Dienogest (Vizanna)

was used as hormonal therapy. The drug was prescribed according to the scheme 2 mg (daily dose), daily for 6 months. In the application of both schemes of combined treatment, the localization of endometrioid heteropathy, the presence of the carotid process, the volume of the distribution of pathological foci were studied.

Thus, in a retrospective study, 70 patients with GE were involved. The following surgical interventions were performed: laparoscopy in 27 (38,6%) cases; hysteroscopy in 23 (32,8%) cases; vaginal access - in 11 (15,7%) cases, laparotomy - in 9 (12,9%) cases respectively. During the treatment, there was a marked reduction of the manifestations of chronic pelvic pain syndrome, cessation of dysmenorrhea, dyspareunia, hyperpolymenorrhea, hemorrhagic discharge. It should be noted that in the course of treatment marked positive dynamics in the assessment of the expression of pain symptoms on the scales of VAS and MacLaverty C.M., Shaw R.W. scales. According to the first scheme of treatment in 1 month. the frequency of occurrence of clinical symptoms has significantly decreased. A comparative assessment of the intensity of pain syndrome on VAS and MacLaverty C.M., Shaw R.W. scales in this contingent of patients at intervals of 1; 3; 6 months showed a complete cessation of clinical symptoms (Figure).

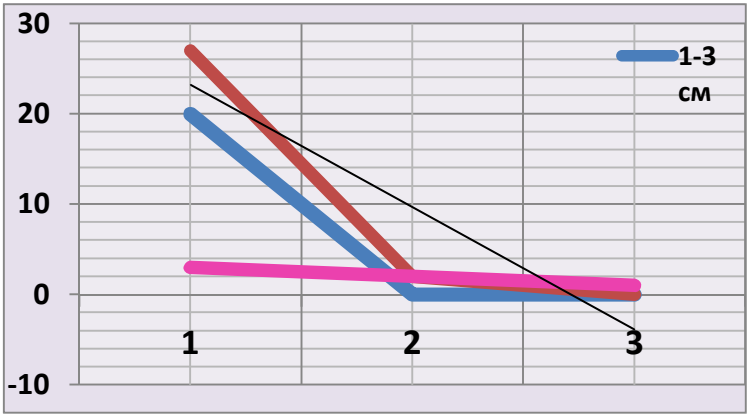

Figure. *Diagram of characteristics of the intensity of pain syndrome VAS depending on the point scale*

Thus, the combined method of treatment (surgery + hormonal therapy) of GE led to an improvement in the general condition of women, a regression of the clinical picture, which contributed to an improvement in the quality of life. It is important to note that there was a decrease in the incidence of relapses and the development of long-term remission. Undoubtedly, the search for new solutions for the treatment of GE attracts many scientists. Despite the generally accepted methods of treating GE, this issue continues to remain relevant throughout the world, perhaps the problem we are considering is related to the peculiarities of the course of this disease. In search of a new treatment method, we have proposed and applied the technology of broadband wave surgery and argon plasma coagulation using the FOTEK EA 141M apparatus. The essence of the method is the impact of the inert gas argon on the tissue in a non-contact way. This method allows you to locally impact on the affected area, controlling the depth of exposure, to carry out coagulation of endometriotic heteropathies, without damaging the underlying tissues.

In this connection, the study involved 50 patients with GE treated at Scientific Research Institute of Obstetrics and Gynecology. All patients were divided into 3 groups: 1) group A - group I amounted to n=17 (stage I); 2) group B - group II, n=20 (stage II); group C – group III, n=13 (stage III). After the use of argon plasma coagulation, dienogest (Byzanne) was prescribed for 6 months. As was indicated in ch. II, we used various modes of operation of the specified apparatus. In particular, in the "mixture" mode at a given power of 50-70 W, we performed excision of endometrioid lesions. Hemostasis of the wound surface, mainly if there was capillary bleeding, in the "filgur" mode at a given power of 50-70 W, argon plasma exposure was carried out for 3-5 minutes, at a distance of 0.5 sm.

It is important to note that this effect of the argon plasma torch allows coagulation of tissues at a depth of no more than 3 mm. According to the subdivision of patients into appropriate groups depending on the severity of the endometrioid process, for a mild form of the course of GE, we carried out the following tactics: for

coagulation of endometrioid heteropathies, the "spray" mode was used at a given power of 37-42 W, at a depth of 0,1-1 mm s time interval of exposure 2-4 sec. It should be noted that the use of this APC tactic we obtained a positive effect, which allows us to recommend the above tactic for the treatment of mild GE. For the treatment of the moderate form of GE, we also used the "spray" mode, which made it possible to ablate endometrioid foci located at a depth of 1-2 mm at a given power of 42-50 W with a time interval of exposure to an argon torch of 3-5 seconds.

In severe form of GE, the "filgur" mode is recommended at a given power of 57-64 W with a time interval of exposure of 4-7 seconds, at a distance of no more than 2,5-3,0 mm, respectively. It is important to emphasize that this tactic is most effective for coagulation of endometrioid ovarian cysts. It should also be noted that in the "spray" mode, at a given power of 45-50 W, with a time interval of exposure to an argon torch of 3-6 seconds, ablation of endometrioid heteropathies located on the utero-sacral ligaments, fallopian tubes, on the peritoneum of the small pelvis, located at a depth of not more than 2,5-3,5 mm.

Thus, in a mild form of GE, after the treatment, complaints and complications were not recorded in any case. In moderate-severe form of GE in 2 cases, which amounted to 4% after 1 month after the treatment, a pain syndrome was observed, which required the continuation of the use of dienogest (Byzanne) for 6 months. It should be noted that after the treatment, pain syndrome was not observed in any case. In patients with severe GE after 1 month. after the treatment, pain syndrome was noted in 2 (4%) cases, by the end of the 6th month - in one case with a retrocervical form of endometriosis.

Thus, during the treatment, an improvement in the ultrasound picture was noted, in particular: an improvement in the echo structure of the uterine body, a decrease in its size, and an improvement in the condition of the myometrium. Also, against the background of the treatment, a positive dynamics of the clinical picture of the course of endometriosis from the ovaries was noted, which was confirmed by ultrasound. Follow-up studies for 3 years

after the treatment showed an improvement in the clinical condition of patients with GE, in particular, there was a regression of clinical manifestations, complaints, relapses, complications and/or progression of the endometrioid process over the specified period was not detected.

Thus, the comparative characteristics of the methods of treatment of genital endometriosis in women of group I (n=70) retrospective studies (combined method: surgical + drug revealed positive and negative aspects. In particular: 1) the use of narcotic drugs; 2) when using surgical treatment of genital endometriosis, it is not possible to remove endometriotic foci with complete certainty, which is why the affected ectopic cells of the endometrium can cause a relapse and the occurrence of a repeated episode of this disease; 3) with a deeper location of endometrioid heteropathies and the involvement of other organs and systems in the pathological process (taking into account the distribution area, due to the ability of ectopic cells to persistence), it is not possible to achieve optimal surgical access (technical difficulties); 4) the risk of perforation is not excluded; 5) the quality of the suture material; 6) the formation of rough scars is not excluded; 7) the risk of complications is not excluded (in some cases, laparotomy); 8) the risk of bleeding; 9) the risk of hematomas; 10) the risk of microbial contamination (due to the accumulation of wound exudate); 11) violation of the rules of both asepsis and antisepsis; 12) duration of hospitalization; 13) carrying out only in stationary conditions.

All these practical points can be attributed to the negative side of the use of the operational method. The positive side was that we used a combined method of treatment, that is, surgical in combination with medication (in particular, the use of a progestin drug - dienogest), which consisted of: 1) achieving positive dynamics in the clinical picture of this disease; 2) restoration of hormonal levels; 3) reducing the risk of recurrence and progression of the disease; 4) restoration of fertility in women; 5) reducing the risk of complications associated with organ-preserving tactics.

Analysis of the results of a prospective study (Group II, n=50; argon plasma coagulation in combination with the use of dienogest)

clearly showed the positive efficacy of this treatment regimen, which included: 1) a bloodless surgical field; 2) speed of implementation; 3) absence or minimal pain; 4) lack of contact of the electrode with the tissue; 5) absence of charring of tissues; 6) the absence of smoke during the conduct; 7) the absence of microbial contamination due to the sterilizing effect of the argon wave; 8) lack of formation of a rough scar; 9) the possibility of carrying out this technique on an outpatient basis; 10) control of the depth of coagulation; 11) absence risk of perforation; 12) absence of postoperative complications; 13) high-quality rapid hemostasis of capillary bleeding; 14) absence of massive bleeding; 15) the minimum length of stay in the hospital.

Thus, endometriosis is a common disease that unambiguously leads to both functional and structural changes in the reproductive system, has a negative impact not only on the psycho-emotional and able-bodied spheres of a woman, but also significantly affects the quality of life, contributes to the development of depressive states.

RESULTS

1. The frequency of occurrence of genital endometriosis, depending on the form and localization of foci, was: peritoneal endometriosis – 42,5%, extraperitoneal endometriosis – 31,7%, endometriosis of the uterine body – 15,8%, retrocervical endometriosis - 10% of cases; depending on the severity, depth and area of distribution of endometrioid heterotopias: in 35% of cases, I degree of the disease was observed, in 39,2% of cases - II degree, in 24,2% of patients - III degree and in 1,6% of cases - IV degree of pathology.

2. The clinic of genital endometriosis in modern conditions is characterized by a chronic relapsing course with pain syndrome of varying severity in 95,8% of cases, dysmenorrhea - in 58,3%, menstrual dysfunction in 41.6% of cases, infertility (both primary, and secondary) in 30,8% of cases against the background of hormonal imbalance, manifested by a significant increase in the level of estradiol and the ratio of LH / FSH against the background

of a significant decrease in the concentration of progesterone (almost 4 times) and the level of prolactin (about 2 times), which indicates hormonal condition of this disease.

3. The degree of CA125 activity directly depends on the stage, form and extent of endometrioid lesions. An increase in the level of CA125 in the range of 45,14±0,58 U/ml can be regarded as a predictor of severe endometriosis, often associated with ovarian cysts. The level of CA-125 is an additional effective tool in the complex diagnosis of both the severity of genital endometriosis and in order to monitor the effectiveness of treatment and the possibility of developing a relapse of the disease in the future.

4. The combined method of treatment (standard surgery followed by hormone therapy with dienogest) leads to the restoration of anatomical changes in the pelvic organs and practical recovery in 45,7% of patients, a significant improvement in the general condition in 50% of women, relief of pain, dysmenorrhea and recovery menstrual function in the vast majority of cases - in 95,7%, normalization of the hormonal profile - a statistically significant decrease in the level of estradiol, LH and the ratio of LH/FSH against the background of a significant increase in the level of progesterone and prolactin, as well as a statistically significant decrease in the CA-125 marker by almost 2 times.

5. Treatment of genital endometriosis using argon plasma coagulation contributed to the restoration of anatomical changes in the pelvic organs and practical recovery in 68% of patients, a significant improvement in the general condition - in 28% of women, pain relief - in 98%, restoration of menstrual function in all patients , as well as the normalization of hormonal status and the level of CA-125 to the level of healthy women.

6. Argon plasma coagulation has a number of advantages compared to traditional therapy for genital endometriosis, both in terms of immediate results (reduction in blood loss during surgery by 1.6 times, reduction in the duration of surgical intervention by 2 times, reduction in the duration of pain in the early postoperative period by almost 2 times, reduction in the duration of analgesics after surgery by 1,8 times, reduction in the length of stay of patients

in the hospital by 2,7 times), and from the side of long-term results of treatment (an increase in the frequency of pregnancy by 1,7 times and the absence of relapses in all patients), which indicates the high efficiency of the proposed technique and the need for its use in the treatment of genital endometriosis.

PRACTICAL RECOMMENDATIONS

1. In genital endometriosis and in the presence of ovarian cysts, it is recommended to determine the level of the CA125 glycoprotein antigen in the peripheral blood of women in order to determine the severity of the pathology and evaluate the effectiveness of treatment.

2. In the postoperative period or after the APC procedure, all patients are recommended to undergo a course of hormone therapy using the progestogen dienogest (Byzanne) at a daily dose of 2 mg, daily, for 6 months.

3. The technology of argon plasma coagulation using the FOTEK EA 141M apparatus is a highly effective, safe method based on the non-contact effect of high-frequency current through plasma on endometrioid heterotopias, without the formation of rough scars, adverse reactions and / or complications.

4.For the treatment of genital endometriosis, the following scheme of APC is proposed using the FOTEK EA 141M device in the following modes: excision of endometrioid lesions in the "mixture" mode at a given power of 50-70 W; hemostasis of the wound surface (capillary bleeding);

5. In case of a mild course of GE, for coagulation of endometrioid heteropathies, the "spray" mode is recommended at a given power of 37-42 W, at a depth of 0,1-1 mm with a time interval of exposure of 2-4 seconds.

6. For the treatment of moderate-to-severe forms of HE, the "spray" mode is recommended for ablation of endometrioid lesions located at a depth of 1-2 mm at a given power of 42-50 W with a time interval of exposure to an argon torch of 3-5 seconds.

7. In severe form of GE, the "filgur" mode is recommended at a given power of 57-64 W with a time interval of exposure of 4-7 seconds, at a distance of no more than 2,5-3,0 mm.

LIST OF SCIENTIFIC WORKS PUBLISHED ON THE TOPIC OF THE DISSERTATION

1. Бадалова, А.А. Роль эндометриоза в нарушении репродуктивной функции женщин (обзор литературы). // – Bakı: Müasir ginekologiya və perinatologiyanın aktual məsələləri, 2018. № 4, – s. 18-24
2. Бадалова, А.А. Инновационные методы лечения генитального эндометриоза. Перспективы // –Bakı: Sağlamlıq, - 2020. № 4, - s. 42- 49
3. Бадалова, А.А., Курбанова Д.Ф. Гормональный профиль и гликопротеиновый маркер СА 125 при генитальном эндометриозе // – Bakı: Azərbaycan təbabətinin müasir nailiyyətləri. – 2020. № 4, – s. 55-62
4. Badalova, A.A. Clinical and diagnostic aspects of genital endometriosis in women of reproductive age // – Украина: Журнал Вісник проблем біології и медицины, – 2021. вып. 1 (159), –- p. 18-22
5. Бадалова, А.А., Курбанова, Д.Ф. Аргоноплазменая коагуляция в лечении наружного генитального эндометриоза у женщин. // - Киев: Журнал Актуальні проблеми сучасно ї медицини, – 2021. Том 21, Выпуск 3 (75), – с. 69-74
6. Бадалова, А.А., Курбанова Д.Ф.. Эндометриоз – актуальная проблема репродуктивного здоровья женщины фертильного возраста. // Материалі науково-практичноі конференции 3 міжнародною участию м. Винниция. Kyiv: - 2018, – с. 20-22

LIST OF ABBREVIATIONS

AAGL- American Association of Gynecologic Laparoscopists

CA125- Glycoprotein antigen

ENZIAN- Classification reflecting the localization, stages of development and depth of spread of genital endometriosis

FSH- Follicle-stimulating hormone

GE- Genital endometriosis

LH – Luteinizing hormone

MPQ- McGill Pain Questionnaire

RH- roentgen diagnostics

St I- primay infertility

St II- secondary infertility

VAS - visual analogue scale

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