

APPLICATION OF THE METHODS OF PHYSICAL REHABILITATION IN THE TREATMENT OF WOMEN WITH HYPERPROLACTINEMIA

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Annotation. *Purpose:* The results of studies of the effectiveness effects on the body of women with reproductive dysfunction and hyperprolactinemia matched set of methods of physical rehabilitation. *Material/Methods:* The study involved 24 women aged 18-38 years who were equally divided into study and control groups. Women in both groups received complex rehabilitation measures, which included intravenous laser irradiation of blood on the combined laser therapy apparatus "MIT-1." The procedure was performed every day, the course of 10 sessions, duration - 20 min. The patients of the main group along with radiation listened relaxing sounds (classical music, the noise of the sea, rain) and performed their own range of therapeutic exercise, aimed at speeding up the metabolism. *Results:* The study found that patients in both groups of women (91.7%) under the influence of rehabilitation measures significantly reduced the level of prolactin in the blood, which almost returned to normal. Intravenous laser irradiation of blood goes well with listening to relaxing music and the use of therapeutic exercise. *Conclusion:* The use of intravenous laser irradiation of blood in conjunction with listening to relaxing music and the use of a complex exercise significantly reduces the level of prolactin in women with hyperprolactinemia.

Keywords: women, hyperprolactinemia, infertility, rehabilitation therapy, laser therapy, art therapy.

Introduction

Disorders of prolactin secretion are one of the common causes of menstrual dysfunction and infertility associated this condition. For most gynecologists study blood prolactin levels was one of the first tests that are designated for women suffering from infertility. [1]

Hyperprolactinemia is a condition where exist a high content the prolactin hormone in the blood. The emergence of such situations is possible both in normal (physiological hyperprolactinemia) and pathologic ways, the pathologic may be a harbinger of serious diseases. [2]

Hyperprolactinemia syndrome is a combination of hyperprolactinemia with infertility, menstrual irregularities, female galactorrhea, decreased libido and potency, men sterility. This syndrome among women and men can also be called hyperprolactinemia hypogonadism and women - syndrome persistent amenorrhea-galactorrhea. [3]

According to different authors, examining gynecological patients the frequency of hyperprolactinemia states ranges from 20 to 47% and falls mainly on the age of 18-38 years. Hyperprolactinemia has the major place in the structure of endocrine infertility, that accounts for about 40.0%. In endocrine menstrual cycle (amenorrhea or oligomenorrhea) elevates prolactin levels found in 15,0-30,0% of women. According to various sources, hyperprolactinemia is about 30,0-70,0% of patients with galactorrhea. [4]

Widespread implementation in practice of modern methods of diagnosis and treatment helped to improve infertility treatment caused by hyperprolactinemia [5]. Use of physiotherapy as elements of physical rehabilitation allows improving the condition of patients with this disease.

Thus, hyperprolactinemia remains an important problem of modern obstetrics and gynecology as a result of a significant effect on women's menstrual and reproductive function, including the fetus development and pregnancy. Therefore, the search for new approaches in the treatment and rehabilitation of these patients is an urgent task of modern medicine.

The investigation and search of new rehabilitation programs for women with infertility presented in the article is a planned research of Physical Rehabilitation and Recreation Department of Institute of Management and Law, Zaporizhzhya National Technical University.

Purpose, tasks of the work, material and methods

The purpose of our study was to determine the effectiveness and impact of measures chosen physical rehabilitation on functional status of women in violation of the secretion of prolactin and infertility.

To achieve this purpose the following objectives were identified:

- 1) analyze literature sources on research topic.
- 2) evaluate the factors of prolactin level in women's organisms before and after rehabilitation.
- 3) implement rehabilitation complex activities among women with hyperprolactinemia in control of the basic groups.
- 4) to determine the performance effectiveness of selected physical rehabilitation complex for women health resumption in both groups.

To assess the functional state of women before and after rehabilitation, all the women were examined (hormonal examination), it was conducted on 2nd -6th day of menstrual cycle (follicle-stimulating hormone, luteinizing hormone, gonadotropin-releasing hormone). In all cases hyperprolactinemia was diagnosed, and it was confirmed twice

by enzyme - immunoassay. The ultrasonography of mammary glands was additionally performed, and it did not reveal structural changes and screening for infectious diseases.

The level of prolactin in the blood serum of women was determined by ELISA analyzer «Microplate Reader RT-2100 C» using standard test kits "Ham-Medica" (Russia) «Hoffman la Roch» (Switzerland).

The method of survey was also used (developed passport application form included part of complains before and after rehabilitation, obstetric and gynecological history, extragenital pathology).

For the rehabilitation of patients of the basic group conventional method of intravenous laser irradiation of blood on the combined laser therapy apparatus "MIT-1" (series «LIKA») using single fibers KIVL-01 with laser light in the red region of the spectrum (0.63 m) power of 3 0 MW output lightguide was used [6]. The procedure was carried out every day course - 10 sessions, duration - 20 minutes, listening to relaxing sounds (noise of the sea, rain, classical music) and complex of self-maintained medical exercises that accelerate the metabolism in the blood.

For patients in the control group used the same method of intravenous laser irradiation of blood, which was used in the basic group.

Research Organization. The study was conducted at the Clinical Institution "Regional Medical Center for Human Reproduction" in Zaporozhzhye from February to July, 2012.

The study involved 24 women aged from 18 to 38, who were divided into two groups: basic and control (12 people each). All the women suffered from primary and secondary infertility and menstrual disorders.

Results.

As a result, the research found: percentage of patients aged 25 to 38 years was 62.8%, which is consistent with the literature on the prevalence hyperprolactinemia states. The duration of infertility ranged from 1 to 12 years. Primary infertility was 67.4%, secondary - 32.6% of cases.

Study results of the questionnaire showed that most patients with hyperprolactinemia established a regular menstrual cycle with a period of menarche (average of $12,6 \pm 1,8$ years), only 1.2% of the observed primary amenorrhea. Menstrual disorders occur several years after menarche and were observed in 21 (86.0%) patients (10 primary and 11 control group).

The level indicator of the level of prolactin in women surveyed core group ranged from 630 to 1,200 milli-international units per liter (IU / L) and averaged $799,17 \pm 85,72$ mIU / L, prolactin levels in patients in the control group ranged from 700 to 1200 mIU / L and averaged $849,17 \pm 91,40$ mIU / L.

The difference between the values of elevated prolactin level control and main group for the rehabilitation was not significant, indicating homogeneity of the selected groups.

The dependence between the levels of prolactin and progesterone, which allows verifying the presence of anovulation or luteal phase deficiency. For patients with pituitary prolactinomas characteristic was lower estradiol.

Depending on the clinical symptoms, prolactin levels, the presence or absence of organic pathology was developed pituitary medical tactic.

After 3 treatments in the control group values prolactin increased from 100 to 200 mIU / L (an increase of an average of $132,53 \pm 10,41$ mIU / L, the values were in the range of 850 to 1010 IU / l and were on average $981,67 \pm 98,86$ mIU / l).

In 11 patients of the main group after 2 weeks after the procedure parameters prolactin levels came back to normal and ranged from 220 to 420 mIU / L and the average stood at $310,02 \pm 32,49$ mIU / l. In the control group values prolactin levels came back to normal in seven patients a month, and were in the range of 220 to 590 IU / L, and averaged $425,83 \pm 55,14$ mIU / l.

The study prolactin level indicators are presented in Table 1.

Table 1

Average values of prolactin levels (mIU/L) in women and control group before and after rehabilitation

The period of study	General group	Control group	t	p
For rehabilitation	$799,17 \pm 85,72$	$849,17 \pm 91,40$	0,34	> 0,05
After rehabilitation	$310,02 \pm 32,49$	$425,83 \pm 55,14$	1,81	> 0,05

As it can be seen from Table 1, patients in both groups significantly decreased performance levels of prolactin, although after the rehabilitation the difference in performance was not reliable. But the poll showed that in the basic group who used intravenous laser blood irradiation combined with relaxing music and exercise, after the first treatment significantly improved mood, decreased irritability, insomnia passed, dizziness disappeared and swelling of bowels disappeared. After the third procedure depressive mood was gone, completely gone irritability, sleep was much deeper, increased efficiency, disappeared constipation; shortness of breath began to fade in physical activity. At the end of the study were almost all women good mood, and performance levels in serum prolactin ran normal (240-540 IU / L) significantly earlier than in the control group held rehabilitate the usual method of intravenous laser irradiation of blood.

The use of intravenous laser blood irradiation combined with listening to relaxing music, and physical therapy (study group) acts more favorably and quickly to patients compared with using only intravenous laser irradiation of blood (control group). But does exercise affect medical physical culture in the rate of decline in the level of prolactin in the blood of patients remains to be investigated.

The proposed combined approach to treating patients with infertility and hyperprolactinemia allowed to achieve the restoration of prolactin in the blood of 91.7% of patients.

Conclusions.

1. Hyperprolactinemia is the most common endocrine disorders of the hypothalamic-pituitary system. It occupies an important place in the structure of endocrine infertility, accounting for 40.0%. Use of physiotherapy as elements of physical rehabilitation allows to improve the condition of patients with this disease. There are many approaches to complex treatment and rehabilitation of these patients, but they are not quite perfect. Therefore, the search and the scientific substantiation of new programs is an essential task of medicine.

2. Examination of patients in both groups involved with the discovery of hormonal test hormone levels: follicle-stimulating, luteinizing, gonadotropin-releasing hormone, prolactin levels in the blood, breast ultrasound, and screening for infectious diseases. It was used as the method of questioning the patients. Patients in both groups had changes in activity of prolactin had no morphological changes in the mammary glands and infectious diseases. Activity levels of prolactin in the female patients had approximately the same size, indicating that the homogeneity of selected groups.

3. For the treatment and rehabilitation of women with hyperprolactinemia core group used techniques such as intravenous laser irradiation of blood on the unit «MIT-1" in conjunction with listening to relaxing music and using a complex exercise. For the control group used only intravenous laser irradiation.

4. Patients in both groups significantly decreased performance level of prolactin. In most patients of the main group, these figures come to normal and averaged $310,02 \pm 32,49$ mIU / l. The women of the control group values prolactin levels came back to normal and the average amounted to $425,83 \pm 55,14$ mIU / L, although the difference after the rehabilitation of these indicators were not reliable, the proposed combined approach to treating patients with infertility and hyperprolactinemia allowed to achieve recovery of prolactin levels in 91.7% of patients.

Analysis of survey results demonstrated that intravenous laser irradiation of blood in conjunction with listening to relaxing music and using a complex exercise (basic group) act more favorably and quickly to patients compared with using only intravenous laser irradiation (control group). Whether exercise therapy influence the rate of reduction of prolactin in the blood of patients has not been find out yet and will be discussed in further studies.

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