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SECONDARY INFERTILITY IN WOMEN OF REPRODUCTIVE AGE WITH HYPOTHYROIDISM

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ABSTRACT

Female infertility-is manifested by the absence of pregnancy for 1.5-2 years or more in a woman who lives a regular sexual life, without the use of contraceptives. Hypothyroidism is one of the most common endocrine pathologies that have a close connection with the reproductive system. With hypo function of the thyroid gland, various disorders occur in the reproductive system: menstrual disorders, miscarriage, infertility. Therefore, the study of thyroid function should be carried out as a screening in women planning pregnancy, as well as in the treatment of infertility.

KEYWORDS: *Hypothyroidism; Reproductive System; Thyroid Gland; Primary Infertility;*

INTRODUCTION

Infertility in marriage is not only an interpersonal, but also a complex medical, social, and demographic problem. Reduced fertility and infertility in marriage are associated with many causes, so infertility is a definite indicator of a population's physical and psychosexual health. According to the Russian and foreign literature, the frequency of endocrine disorders in the structure of infertile marriage is 32-40 % [1].

Female infertility is the inability of a woman of reproductive age to conceive. **[1]**

Secondary infertility – infertility if a woman has a history of one or more pregnancies (childbirth, abortion, ectopic pregnancy).

Infertility is the absence of pregnancy in a woman of childbearing age during 1 year of regular sexual activity without the use of any contraceptives.

Female infertility is the cause of infertile marriage in 45% of cases

Endocrine forms of infertility are different and are determined by the level of damage to various parts of the reproductive system, which lead to disruption of folliculogen folliculogenesis, ovulation, and hypo function of the yellow body. Clinical manifestations are diverse. The leading symptom is ановулан ovulation, hypoluminismтеинизм, where an ovulation is the only пapathognomonic sign of endocrine forms of infertility in women **[2]**

The thyroid gland is one of the most important organs of the endocrine system for the functioning of the human body.

Hypothyroidism

Etiology

The most common cause of primary hypothyroidism in the adult population is autoimmune thyroiditis (AIT); other causes of hypothyroidism include thyroidectomy and radioactive iodine therapy **[11].** Classification [1, 11]

Primary hypothyroidism — chronic autoimmune thyroiditis (тиреоидит Hashimoto's thyroiditis);

- Condition after surgical treatment of the thyroid gland;

- Therapy 131 I;

- Transient hypothyroidism (observed in the case безболевогоof pain-free, as well as postpartum and subacute thyroiditis);

- congenital abnormalities of the thyroid gland. Violation of thyroid hormone synthesis:

- *congenital defects in the biosynthesis of thyroid hormones;

- *severe iodine deficiency or excess;

- *drug and toxic effects (thyroostatic drugs, interferon-alpha, interleukin 2, amiodarone)

Hypothyroidism of central origin

Destruction or deficiency of TSH and/or TRH-producing cells:

- *neoplasms in the area of the hypothalamus or pituitary gland;

- *radiation damage or injuries to the thyroid gland;

- *vascular disorders;

- *the presence of pathological processes (infectious or infiltrative);

- *congenital disorders.

Violation of the synthesis of TSH and TRH:

- *mutations affecting the synthesis of the TRH receptor, the beta subunit of TSH;

- *exposure to drugs or toxins III. Tissue hypothyroidism:

- *generalized resistance to thyroid hormones;

- *pituitary resistance to thyroid hormones;

— • inactivation of T3 andT4 or TSH circulating in the blood **[12].**

The risk group for the development of hypothyroidism should include women who:

there is a family history of:

- Thyroid diseases;

- Pernicious anemia;

- Diabetes mellitus.

- Primary adrenal insufficiency;

1) I have a history of:

- Disorders of thyroid function in the past;

- Goiter.

- Thyroid surgery or therapy with radioactive iodine-131;

- Diabetes mellitus;

- vitiligo.

- Pernicious anemia;

- leukotrichia (premature graying of the hair);

- taking medications (lithium carbonate, iodine preparations — amiodarone, contrast agents, potassium iodide in supraphysiological doses, kelp);

2) revealed during laboratory research:

- Hypercholesterolemia;

- hyponatremia;

- Anemia.

- Increase of CKD and LDH levels;

- hyperprolactinemia **[6,7].**

In a person suffering from hypothyroidism, there are disorders in the metabolism of androgens and estrogens. Normally, active catecholestrogens are formed, but in hypothyroidism, 16-hydroxylation is carried out and estriol (less active estrogen) is produced. These processes alter the mechanisms of regulation, resulting in menstrual disorders, anovulation, and infertility [13]. Secondary hyperprolactinemia may occur in women with longвторичной -term hypothyroidism. At the same time, the mechanism of occurring deviations in репродук-тивнойthe reproductive system is associated with the effect of excessive amounts of BPD on the pituitary gland and hypothalamus. As a result, there is a decrease in the formation and secretion of follicle-stimulating, luteinizing hormones and gonadoliberine. T4 deficiency4 leads to changes in dopamine synthesis. The latter is necessary for pulse secretion of luteinizing hormone. In the ovaries, prolactin slows down the production of sex hormones and causes resistance to the regulatory effects of the pituitary gland. When hypothyroidism is combined with hyperprolactinemia, the so-called "sindrome" occurs.Vic-Ross-Hennes" [17].

Diagnostics

Hypothyroidism is not accompanied by a specific clinical picture, for this reason, laboratory diagnostics are necessary to establish an accurate diagnosis. It involves determining the level of thyroid-stimulating hormone and freeT4 in the blood serum. If subclinical hypothyroidism

occurs, the concentration of thyroid-stimulating hormone increases, while the concentrationof free T4 remains within the normal range (usually the TSH content is not more than 10 IU/l). Manifest hypothyroidism is characterized by an increase in the concentration of thyroid-stimulating hormone (most often-over 10 IU/l), with a decreasein free T4. Over time, thyroid dysfunction progresses, leading to an increase in TSH, a decreasein T4, and a drop in T3 [11, 15]. Determination of triiodothyronine (T3) levels in hypothyroidism in most cases is impractical [16].

Treatment

For the treatment of hypothyroidism of any etiology, L-thyroxine replacement therapy is used. L-thyroxine is the drug of choice for the treatment of hypothyroidism, which has a high bioavailability (more than 80 %) and is easy to use [16].

CONCLUSIONS:

To date, the effect of manifest hypothyroidism on the female reproductive system has been proven, but the question of the effect of the subclinical form of hypothyroidism remains unclear. There are various points of view about this problem, but the authors agree that untreated hypothyroidism can lead to infertility, fetal death, or malformations. Pregnant women and women planning to conceive who have a thyroid pathology should be under the supervision of an endocrinologist. Despite a significant number of studies on the impact of hypothyroidism on women's reproductive health, there are no clear recommendations for the management of women with subclinical hypothyroidism. It is also controversial whether it is appropriate to assess the thyroid profile of the thyroid gland in women planning pregnancy and infertility.

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