

# "FEATURES OF MANAGEMENT OF PREGNANT WOMEN WITH HYPOTHYROIDISM"

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#### Abstract

Hypothyroidism during pregnancy is a pressing issue in obstetric and endocrinological practice. The disease is associated with insufficient production of thyroid hormones, which can negatively affect the course of pregnancy, fetal development, and birth outcomes. The article is devoted to the features of diagnosis, management, and treatment of pregnant women with hypothyroidism. The risks for the mother and fetus, the need for timely administration of levothyroxine replacement therapy , and approaches to monitoring hormonal levels throughout pregnancy are discussed.

#### Key words

hypothyroidism, pregnancy, levothyroxine , thyroid stimulating hormone (TSH), thyroxine (T4), intrauterine development, obstetric complications

Thyroid hormones play an important role in the reproductive function of women and in the formation of the nervous system of the fetus. During pregnancy, the need for thyroid hormones increases. Undiagnosed or poorly compensated hypothyroidism can lead to serious complications such as preeclampsia , anemia, premature birth, stillbirth, as well as intrauterine growth retardation and impaired cognitive development of the child.

Etiology and classification of hypothyroidism in pregnant women Hypothyroidism in pregnant women is a pathological condition associated with a deficiency of thyroid hormones, which are necessary for the normal course of pregnancy and fetal development. The causes of hypothyroidism in pregnant women can be varied and are divided into congenital and acquired.

Autoimmune thyroiditis (Hashimoto's thyroiditis). The most common cause of hypothyroidism in women of reproductive age. Occurs as a result of autoimmune destruction of thyroid tissue. Iatrogenic hypothyroidism. Develops after surgical removal of the thyroid gland (thyroidectomy) or as a result of radioiodine therapy used to treat hyperthyroidism or thyroid cancer. Iodine deficiency. In regions with insufficient iodine intake, hypothyroidism may occur due to a deficiency of this microelement, which is necessary for the synthesis of thyroid hormones. Taking antithyroid drugs

- Drugs that suppress thyroid function can cause drug-induced hypothyroidism. Congenital anomalies . Rarely, there are cases of congenital hypothyroidism in women that are not diagnosed before pregnancy. Damage to the pituitary gland or hypothalamus . Secondary or tertiary hypothyroidism may be associated with insufficient stimulation of the thyroid gland due to damage to the central links of the endocrine system (tumors, injuries, pituitary infarction).

Hypothyroidism in pregnant women is classified by severity and pathogenetic mechanism: By severity: Manifest (obvious) hypothyroidism . The level of thyroidstimulating hormone (TSH) is increased and the level of free thyroxine (fT4) is decreased. Requires mandatory treatment, as it can lead to serious consequences for the mother and fetus. Subclinical hypothyroidism

- The level of TSH is increased, but the level of fT4 is within normal limits. Often asymptomatic, but can affect the outcome of pregnancy. By origin ( etiopathogenetic classification): Primary hypothyroidism

- Occurs as a result of damage to the tissue of the thyroid gland itself. This is the most common form. Secondary hypothyroidism . Develops due to insufficient production of TSH by the pituitary gland. Tertiary hypothyroidism . Occurs when the hypothalamus is damaged, which leads to a decrease in the synthesis of thyrotropin-releasing hormone (TRH). Hypothyroidism in pregnant women is a serious medical and social problem, as it affects both the health of the mother and the development of the fetus, especially the formation of the central nervous system. Timely diagnosis, determination of the form of the disease and early initiation of therapy significantly reduce the risk of complications during pregnancy and childbirth. If necessary, I can supplement this with sections on diagnostics, clinical presentation, treatment or provide examples of clinical cases.

Diagnostics. Screening is indicated for women from the risk group (history of thyroid diseases, infertility, miscarriages).

• Mandatory tests: TSH, free T4, TPO antibodies.

• Target TSH level:

o1st trimester - <2.5 mIU /1

oII and III trimesters – <3.0 mIU /1

Effects of hypothyroidism on pregnancy and fetus. Maternal complications: miscarriages, preeclampsia, anemia, postpartum hemorrhage

Fetus: intrauterine growth retardation, low birth weight, perinatal mortality, decreased IQ in the child, neurological disorders

The impact of hypothyroidism on pregnancy and the fetus

Hypothyroidism during pregnancy is a serious threat to both the mother's health and the normal development of the fetus. Thyroid hormones (thyroxine – T4 and triiodothyronine – T3) play a key role in metabolism, development of the nervous system and organ function. Their deficiency during gestation can lead to multiple complications.

Maternal complications. Miscarriages (spontaneous abortions) Women with untreated or undiagnosed hypothyroidism have a significantly increased risk of early miscarriages, especially in the first trimester. Hormonal imbalances lead to incomplete attachment of the fertilized egg and implantation failure, as well as progesterone deficiency and dysfunction of the corpus luteum.

Preeclampsia . Hypothyroidism increases the risk of preeclampsia , a severe gestosis characterized by hypertension and proteinuria. Dysfunction of the endothelium and decreased levels of thyroid hormones impair vascular reactivity, leading to placental insufficiency and systemic vascular spasm.

Anemia. Hypothyroidism can lead to normochromic or macrocytic anemia. This is due to decreased absorption of iron, vitamin B12 and folic acid, as well as suppression of bone marrow hematopoiesis. Anemia increases the risk of fetal hypoxia and worsens the course of labor.

Postpartum hemorrhage. Patients with hypothyroidism often have uterine atony, impaired contractility of the myometrium , which increases the risk of massive postpartum hemorrhage. This is especially dangerous in combination with anemia and coagulopathy .

Effects on the fetus and newborn Intrauterine growth retardation (IUGR). Thyroid hormone deficiency affects placental circulation, metabolism, and fetal growth. As a result, the baby may lag behind in weight and length for the gestational age, especially in cases of severe maternal hypothyroidism.

Low birth weight. Hypothyroidism can lead to hypotrophy and premature birth, which is accompanied by the birth of children with a body weight below 2500 g. This is due to a violation of the trophism of the placenta and oxygen starvation of the fetus.

Perinatal mortality. There is an increased risk of stillbirth, intrauterine fetal death and early neonatal mortality. This is the result of a combination of intrauterine hypoxia, infectious complications and underdevelopment of vital organs.

Decreased IQ in a child . In the early stages of pregnancy, the fetus's thyroid gland is not yet functioning, and its development is entirely dependent on maternal hormones. Thyroxine deficiency is especially dangerous in the first trimester, since this is when the central nervous system is laid and formed. It has been proven that

children whose mothers suffered from untreated hypothyroidism during pregnancy have a lower IQ in the future (7-10 points lower compared to the control group).

Neurological disorders. Newborns exposed to maternal hypothyroidism may experience delayed psychomotor and speech development, muscle hypotonia, impaired coordination, and in severe cases, cerebral palsy. In some cases, congenital hypothyroidism develops in the child itself, which requires emergency hormone replacement therapy.

Recommendations for pregnancy management

- Timely examination when planning pregnancy
- Early registration and laboratory monitoring

• Collaboration between an obstetrician-gynecologist and an endocrinologist

• Teaching the patient the importance of following the levothyroxine regimen (in the morning, on an empty stomach, 30–60 minutes before meals)

Postpartum period

- After childbirth, a dose adjustment of levothyroxine may be possible.
- Monitoring thyroid function after 6 weeks
- Increased risk of postpartum thyroiditis

Conclusion

Hypothyroidism in pregnant women requires a special approach to management. Timely diagnosis, adequate replacement therapy and constant monitoring of TSH and T4 levels help to minimize the risks for the mother and fetus. Interdisciplinary interaction and informing the patient about the importance of disease control are key factors for a successful pregnancy outcome.

# LITERATURE:

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