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Research Article

CURRENT APPROACH TO PREGNANT WOMEN WITH THYROID ABNORMALITIES

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ABSTRACT

The course of pregnancy, thyroid status, and hormonal background were studied in 96 women with autoimmune thyroiditis (AIT). It was established that pregnant women have a number of maternal and fetal complications (54.8%); AIT has an adverse effect on the course of pregnancy; a high risk of miscarriage and termination of pregnancy is observed; and the thyroid hormone level is reduced and the TSH level is increased in comparison with that in healthy pregnant women. To prevent gestational complications and prematurity in women with AIT, routine blood TSH testing from early gestation is recommended.

KEYWORDS

Pregnancy, thyroid pathology, autoimmune thyroiditis, thyroid status in pregnant women with AIT, complications in pregnancy with AIT, prevention of thyroid pathology during pregnancy.

INTRODUCTION

In recent decades, thyroid diseases occupy the leading place in the structure of endocrine pathology, along with type 2 diabetes mellitus, they are one of the most pressing medical and social problems, which is due to the growing prevalence of thyroid pathology among the population of Uzbekistan, high frequency of temporary and persistent disability. More than 665 million people in the world have endemic goiter or other thyroid pathologies, and one and a half billion people are at risk of developing iodine deficiency diseases.

One common form of thyroiditis is autoimmune thyroiditis (AIT), with a rate of 3-4% in the population (2,6). AIT occurs predominantly in women, often manifesting and progressing during pregnancy due to increased physiological thyroid stimulation.

The literature suggests that pregnant women with autoimmune thyroiditis have a number of maternal and fetal complications: miscarriage, threatened miscarriage, premature termination, pre-eclampsia, placental insufficiency, fetal hypoxia, etc. in children - perinatal CNS damage, cardiopathy, morphofunctional immaturity, intellectual disability, etc. [1,4,5,9], which explains the increased interest in the management of pregnant women with this pathology.

Thyroid diseases can cause not only reproductive disorders in a woman and have an adverse effect on the processes of embryogenesis, placentation and gestation, worsen pregnancy and childbirth outcome, negatively affect fetal growth and development, but also have a significant impact on the female body in general, impairing quality of life and performance [1,3,7], which makes the problem urgent.

Purpose of the study: To investigate the course and outcome of pregnancy and the thyroid status of women with AIT

RESEARCH

In 2019-2022 we examined 96 pregnant women with autoimmune thyroiditis (AIT) with gestational age up to 34 weeks of gestation. The thyroid gland (Thyroid) was investigated and hormonal background (thyroid hormone, free thyroxine and thyroid peroxidase antibodies were determined) was examined. An ultrasound of the thyroid gland was also performed. All pregnant women were examined by an endocrinologist and, when indicated, by other specialists. Pregnant women with AIT (60 women) and those with normal gestation (36 pregnant women) without thyroid pathology were divided into 2 groups.

RESULTS

The patients complained of lower abdominal and lumbar pain (28.5%), palpitations (11.4%), irritability (9.1%), tremors (in rare cases), etc. The number of primiparous women was 18 (18.7%), first-time and repeated women were 78 (81.2%). The mean age of primiparous women was 19.4 ± 3.8 years, repeated women 27.6 ± 8.7 years, with a history of obstetrics and gynecology in 47%, and anemia in 62% of pregnant women.

Among pregnancy complications, maternal vomiting occurred with almost equal frequency in both compared groups. This complication was mild in most cases. A moderate severity was diagnosed in $8.1 \pm 4.4\%$ of the women in the first group; $6.5 \pm 4.6\%$ in the second; none of the cases were of a severe form. Threatened miscarriage occurred in 34.3% of cases, miscarriages in early and late gestation occurred in

10.8%, and an uncompleted pregnancy occurred in 3.1% of women with AIT. Hypertensive disorders in pregnancy occurred in 9.4% of cases, including preeclampsia in 7.3%; no eclampsia was observed. Ultrasound findings in pregnant women with AIT were characterized by an enlarged thyroid gland, reduced echogenicity, and a mean of 13.9 cm³. Ultrasound findings in the uterus were small in 6.2% and abundant in 7.6% of women, suggesting placental insufficiency. The incidence of placental insufficiency was comparable in the AIT and healthy pregnant women and was 19.0±4.3% and 16.1±6.6%, respectively. The diagnosis of placental insufficiency was based on ultrasound placenta- and fetometry, Doppler study of blood flow in the arteries of the mother-placenta-fetal functional system and fetal cardiotocographic examination.

Echographic signs of placental insufficiency included symptoms of premature placental maturation (appearance of grade II placental maturity before 32 weeks, grade III - before 36 weeks of pregnancy), decreased or increased placental thickness, placental structural changes: dilation of intervillous spaces, the presence of calcinates and cysts.

One important indicator of placental insufficiency is the state of uterine-placental-foetal blood flow, which is assessed by Doppler study. Blood flow in the right and left uterine arteries, umbilical arteries, aorta and fetal middle cerebral artery was analysed in the patients who participated in our study. Vascular resistance indices: systolic-diastolic ratio and resistance index were assessed. According to Doppler data, approximately 12% of AIT patients had blood flow abnormalities, with a higher incidence of this complication in patients with initial hypothyroidism. The severity of the distress was mild in all cases,

together with intrauterine fetal retardation in 11.9% of cases.

Intrauterine infection of the fetus was observed in 12% of patients with autoimmune thyroiditis, which was almost 2 times higher than in the control group. It should be noted that our data are consistent with the literature, according to which at least 10% of neonates are intrauterine infected [2,3,6,7]. The diagnosis of intrauterine infection was made based on a combination of clinical and anamnestic findings (inflammatory diseases of the urogenital tract, threat of miscarriage, presence of extragenital foci of infection, especially with an exacerbation of the infectious process during pregnancy, acute respiratory viral infections suffered during pregnancy, etc.), ultrasound markers of intrauterine infection, and laboratory methods to identify infectious agents. Thus, it should be noted that a total of 54.8% of women had pregnancy complications.

Our studies have shown that the TSH level in AIT patients averaged 2.5 to 3.1 mU/l, which was higher than that in the control group. The thyroxine level was 14.0 mmol/l, its increase in the main group was compensatory for iodine deficiency. At the same time, there was a decrease in free thyroxine and an increase in peroxidase antibodies (TPO)-18.9, which appears to be associated with destructive changes in the thyroid gland and a decrease in its function, which is an indicator of autoimmune damage to it. Particular attention should be paid to the fact that pregnant women have slightly different thyroid norms than non-pregnant women. The TTH level in non-pregnant women ranges from 0.4 to 4.0 mU/l, and in the first trimester of pregnancy the TTH level should be in the range: 0.1-2.5 mU/l is normal; 2.5-4.0 mU/l is a marker of subclinical hypothyroidism; over 4 mU/l is a high

probability of manifest hypothyroidism and can be a threat for abortion.

We noted that pregnant women with threatened abortion (in the first trimester) had a significant change in their thyroid status toward hypothyroidism; however, normal TTH values were detected in 42% of the women. In 25% of patients at risk of miscarriage, there was a 25% increase in TSH levels, which was almost 10 times higher than normal. The TSH level associated with subclinical hypothyroidism was detected in 33% of the examined women.

CONCLUSIONS

1. In iodine deficient region, which is our region, AIT is the most common endocrine pathology.
2. AIT has an adverse effect on pregnancy, with a high risk of miscarriage and termination of pregnancy.
3. Pregnant women with AIT have lower thyroid hormone levels and increased TSH levels compared with those of healthy pregnant women.
4. To prevent gestational complications and prematurity in women with AIT, routine blood TSH testing from early gestation is recommended.

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