



THYROID DISEASE AND PREGNANCY

Thyroid dysfunction and autoimmune thyroid disease may increase risk of gestational diabetes

BACKGROUND

Thyroid hormone is important during pregnancy. It has been established that overt hypothyroidism (elevated TSH and low thyroid hormone levels) during pregnancy is associated with increased risk of premature birth, low infant birth weight, fetal death and miscarriage. There is also an increased risk of high blood pressure in the mother. Some studies have also shown that subclinical hypothyroidism (elevated TSH and normal thyroid hormone levels) is associated with pregnancy complications, especially if there is evidence of thyroid autoimmune disease, which may result in higher miscarriage rates. This study was performed to look at the frequency of thyroid dysfunction and thyroid autoimmune disease in pregnant women and to see if there was a relationship with adverse pregnancy and neonatal outcomes.

THE FULL ARTICLE TITLE

Karakosta P et al. Thyroid dysfunction and autoantibodies in early pregnancy are associated with increased risk of gestational diabetes and adverse birth outcomes. *J Clin Endocrinol Metab.* September 26, 2012 [Epub ahead of print].

SUMMARY OF THE STUDY

A total of 1170 women who were pregnant with a single baby participated in the study. Elevated TSH levels indicating hypothyroidism were found in 6.8% of the women. Elevated thyroid antibodies (TPO and thyroglobulin antibodies), markers of thyroid autoimmune disease, were detected in 13% and 7% of the women, respec-

tively. The combination of high TSH and positive thyroid antibodies in early pregnancy was associated with a 4-fold increased risk for gestational diabetes in the mother during pregnancy and a 3-fold increased risk for low-birth-weight infants. Women with normal thyroid function, but with the presence of thyroid antibodies, had an increased risk of spontaneous preterm delivery. The authors concluded that high TSH levels and thyroid autoimmunity have a detrimental effect on pregnancy and birth outcomes.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study adds to the large body of studies that indicates that hypothyroidism in pregnancy, especially if untreated, has negative effects on both the mother and child. The major new finding in this study is that hypothyroidism from autoimmune thyroid disease is a risk factor for the development of gestational diabetes in the mother. Although these findings are provocative, they need to be confirmed with a larger study carried out in another group of pregnant women, whose thyroid function and glucose status are carefully monitored throughout pregnancy.

— Glenn Braunstein, MD

ATA THYROID BROCHURE LINKS

Hypothyroidism: <http://www.thyroid.org/what-is-hypothyroidism>

Thyroid and Pregnancy: <http://www.thyroid.org/thyroid-disease-and-pregnancy>

ABBREVIATIONS & DEFINITIONS

Autoimmune disorders: a diverse group of disorders that are caused by antibodies that get confused and attack the body's own tissues. The disorder depends on what tissue the antibodies attack. Graves' disease and Hashimoto's thyroiditis are examples of autoimmune thyroid disease. Other autoimmune disorders include: type I diabetes mellitus, Addison's disease (adrenal insufficiency), vitiligo (loss of

pigment of some areas of the skin), systemic lupus erythematosus, pernicious anemia (B12 deficiency), celiac disease, inflammatory bowel disease, myasthenia gravis, multiple sclerosis and rheumatoid arthritis.

Autoimmune thyroid disease: a group of disorders that are caused by antibodies that get confused and attack the thyroid. These antibodies can either turn on the thyroid (Graves' disease, hyperthyroidism) or turn it off (Hashimoto's thyroiditis, hypothyroidism).

continued on next page



THYROID DISEASE AND PREGNANCY, continued

Hypothyroidism: a condition where the thyroid gland is underactive and doesn't produce enough thyroid hormone. Treatment requires taking thyroid hormone pills.

Subclinical Hypothyroidism: a mild form of hypothyroidism where the only abnormal hormone level is an increased TSH. There is controversy as to whether this should be treated or not.

Overt Hypothyroidism: clear hypothyroidism an increased TSH and a decreased T_4 level. All patients with overt hypothyroidism are usually treated with thyroid hormone pills.

Thyroxine (T_4): the major hormone produced by the thyroid gland. T_4 gets converted to the active hormone T_3 in various tissues in the body.

TSH: thyroid stimulating hormone – produced by the pituitary gland that regulates thyroid function; also the best screening test to determine if the thyroid is functioning normally.

Thyroglobulin antibodies: these are antibodies that attack the thyroid instead of bacteria and viruses,

they are a marker for autoimmune thyroid disease, which is the main underlying cause for hypothyroidism and hyperthyroidism in the United States. The main antibodies that are markers for autoimmune thyroid disease are TPO and thyroglobulin antibodies.

Miscarriage: this occurs when a baby dies in the first few months of a pregnancy, usually before 22 weeks of pregnancy.

Fetal death: this occurs when a baby dies later in pregnancy (usually after 22 weeks of pregnancy) before delivery.

Antibodies: proteins that are produced by the body's immune cells that attack and destroy bacteria and viruses that cause infections. Occasionally the antibodies get confused and attack the body's own tissues, causing autoimmune disease.

Gestational diabetes: diabetes that occurs during pregnancy in a mother who did not have diabetes before pregnancy and usually does not remain diabetic after pregnancy.

The ATA is Getting Social



Twitter

www.twitter.com/@thyroidfriends



Facebook

www.facebook.com/ThyroidAssociation

Connect with us!