

**THYROID DISEASE DURING PREGNANCY****High TSH and TPO Ab positivity are associated with a higher risk of gestational diabetes mellitus****BACKGROUND**

Gestational diabetes mellitus (GDM) is diabetes diagnosed in the mother during pregnancy, around 24 to 28 weeks, and occurs in roughly 10% of women. GDM is associated with adverse pregnancy outcomes and a higher risk diabetes in the baby. The association of maternal thyroid function with GDM is quite controversial. Interestingly, both hypothyroidism and hyperthyroidism may alter how the body handles glucose. Hyperthyroidism has been shown to increase both insulin secretion and glucose intolerance, while hypothyroidism has been shown to decrease insulin sensitivity. A recent study showed that subclinical hypothyroidism is associated with a higher risk of GDM.

Both hypothyroidism and hyperthyroidism may be caused by autoimmune processes and a marker for autoimmune thyroid disease is antibodies to thyroid peroxidase (TPO AB). This study examined the relationship between TPO AB and the risk of developing GDM.

THE FULL ARTICLE TITLE

Ying H et al. Maternal TSH level and TPOAb status in early pregnancy and their relationship to the risk of gestational diabetes mellitus. *Endocrine*. July 16, 2016. Epub ahead of print.

SUMMARY OF THE STUDY

This study was done in Shanghai, China. Approximately 9000 pregnant women participated in the study. Thyroid tests including TSH and TPO AB were measured. Patients who had preexisting thyroid disease were not

included in this study. Testing for GDM was done between 24 to 28 weeks.

Overall 359 women had an increased TSH, 648 women had positive TPO AB and 78 women had both an increased TSH and positive TPO AB. Women with an increased TSH but negative TPO AB had a 1.44-fold increased risk of developing GDM; those with a positive TPO AB but normal TSH had a 1.65-fold increased risk and those with both an increased TSH and positive TPO AB had a 3.38-fold increase in developing GDM. Overall, the risk was higher if the thyroid tests were found to be abnormal in the first trimester of the pregnancy.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that women with high TSH or positive TPO AB were at a higher risk for developing GDM and that this risk was >3-fold higher when both tests were abnormal. Although this is an important finding, it does not yet prove a direct cause and effect relationship between these two common diseases during pregnancy. Further studies may help us to understand the link better. However, these results could make a case for more widespread screening for thyroid disease during pregnancy.

—Vibhavasu Sharma, MD

ATA THYROID BROCHURE LINKS

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

Hypothyroidism (Underactive): <http://www.thyroid.org/hypothyroidism/>

ABBREVIATIONS & DEFINITIONS

Gestational diabetes mellitus (GDM): diabetes diagnosed in the mother during pregnancy, around 24 to 28 weeks. GDM occurs in roughly 10% of women.

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).

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



THYROID DISEASE DURING PREGNANCY, continued

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.

TPO 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.

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.