



THYROID AND PREGNANCY

Hyperthyroidism in Patients with Gestational Trophoblastic Disease (GTD)

BACKGROUND

The normal pregnancy hormone, human chorionic gonadotropin (hCG), is similar in some ways to TSH. At high enough levels hCG can mimic TSH, bind to the TSH receptor and turn on the thyroid, producing mild hyperthyroidism. This can occasionally be seen in the 1st trimester of pregnancy, especially in women with a lot of morning sickness. A rare complication of pregnancy is a disorder known as gestational trophoblastic disease (GTD). This occurs when the normal placental tissue grows abnormally into a large mass of grape-like structures called a hydatidiform mole. In these cases, very high levels of hCG are produced. The purpose of this study was to examine the thyroid function in patients with GTD.

THE FULL ARTICLE TITLE:

Walkington L et al Hyperthyroidism and human chorionic gonadotrophin production in gestational trophoblastic disease. *Br J Cancer* 2011;104:1665-9. Epub April 26, 2011.

SUMMARY OF THE STUDY

Over a 5 year period, 196 patients with GTD were treated at the Sheffield Trophoblastic Disease Centre

in England. A total of 7% of patients were found to have biochemical hyperthyroidism and 2% patients had clinical hyperthyroidism. Three of the four patients have extremely high hCG levels and one had a life-threatening complication of the hyperthyroidism (congestive heart failure). In all patients, the thyroid function normalized as the serum hCG levels fell with appropriate therapy directed at the GTD.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Although hyperthyroidism is a rare complication of GTD, when it is present, it can be severe and potentially life-threatening. Fortunately, these days, GTD is usually diagnosed at an early stage before the hCG levels reach levels high enough to cause severe hyperthyroidism.

— Glenn Braunstein, MD

ATA THYROID BROCHURE LINKS

Hyperthyroidism: <http://thyroid.org/patients/patient-brochures/hyperthyroidism.html>

ABBREVIATIONS & DEFINITIONS

Gestational Trophoblastic Disease (GTD): this occurs with the normal placental tissue grows abnormally into a large mass of grape-like structures called a hydatidiform mole which secretes large amounts of hCG. In rare cases these high levels of hCG can cause mild hyperthyroidism.

Human Chorionic Gonadotropin (hCG): the major hormone produced by the placenta which is closely

related to thyroid stimulating hormone (TSH). hCG can bind to the TSH receptors present in thyroid tissue and act like a weak form of TSH to cause the thyroid to produce and release more thyroxine and triiodothyronine. hCG is the hormone measured in the pregnancy tests.

TSH Receptor: a molecule (protein) located on the thyroid cell surface that binds TSH and stimulates the production of the thyroid hormones within the thyroid cell.