



HYPERTHYROIDISM

Thyroid tests on newborns within the first five days will detect neonatal hyperthyroidism

BACKGROUND

Graves' disease, the most common cause of hyperthyroidism, is caused by the body making an antibody (thyroid stimulating immunoglobulin) that turns on the thyroid. One complication of Graves' disease in women during pregnancy is the possibility that this antibody crosses from the mother to the developing baby and causes hyperthyroidism. Graves' disease in newborns is very rare, but can be severe and life threatening and have major effects on development. This study was performed to examine the levels of TSH and free T₄ in babies born to women with Graves' disease to determine how often the thyroid function of the baby is affected.

THE FULL ARTICLE TITLE

Levy-Shraga Y et al Follow-up of newborns of mothers with Graves' disease. *Thyroid*. March 17, 2014

SUMMARY OF THE STUDY

This study examined the records of 96 newborns born to mothers with Grave's disease (49 boys, 46 girls). This study took place at Sheba Medical Center in Ramat Gan, Israel between January 2007-December 2012. All mothers with a history of Grave's disease were supervised closely after delivery. Blood tests for TSH and Free T₄ were performed on babies who were 3-4 days old. If there was no evidence of neonatal hyperthyroidism, the babies were discharged to have outpatient follow up and labs in the following week.

Out of 96 babies, four (4%) had clear neonatal Grave's disease. In the 77 other babies, FT₄ levels were above the 95th percentile during days 3 to 6. From day 5 on, the proportion of TSH measurements below the 5th percentile increased to more than 60%. Some TSH levels remained below normal for a few weeks. After day 14 all FT₄ levels returned to normal range, however TSH did remain low in some patients until 3 months of age.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Most babies born to mothers with Graves' disease had evidence of mild hyperthyroidism for a few days following delivery. This study confirms that overt neonatal hyperthyroidism is rare. Based on these results, this study recommends checking thyroid function tests between postnatal days 3 to 5 to detect neonatal hyperthyroidism. If the FT₄ level is normal at day 14 and the baby does not manifest symptoms of hyperthyroidism, then further testing is not indicated.

— Heather Hofflich, DO

ATA THYROID BROCHURE LINKS

Hyperthyroidism: <http://www.thyroid.org/what-is-hyperthyroidism>

Graves' disease: <http://www.thyroid.org/what-is-graves-disease>

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

ABBREVIATIONS & DEFINITIONS

Hyperthyroidism: a condition where the thyroid gland is overactive and produces too much thyroid hormone. Hyperthyroidism may be treated with antithyroid meds (Methimazole, Propylthiouracil), radioactive iodine or surgery.

Graves' disease: the most common cause of hyperthyroidism in the United States. It is caused by antibodies that attack the thyroid and turn it on.

Thyroxine (T₄): the major hormone produced by the thyroid gland. T₄ gets converted to the active hormone T₃ 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.

Thyroid stimulating immunoglobulin (TSI): antibodies often present in the serum of patients with Graves' disease that are directed against the TSH receptor, that cause stimulation of this receptor resulting in increased levels of thyroid hormones in the blood and hyperthyroidism