CLINICAL THYROIDOLOGY **FOR PATIENTS**

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AMERICAN THYROID ASSOCIATION
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HYPOTHYROIDISM

Only a few children with subclinical hypothyroidism progress to overt disease within 3 years

BACKGROUND

Overt hypothyroidism is characterized by lab tests that show an elevated TSH and low thyroid hormone levels. The most common cause of hypothyroidism in the US is Hashimoto's thyroiditis, where patients develop thyroid antibodies that attack and destroy the thyroid. Hypothyroidism is treated by replacing thyroid hormone with Levothyroxine. Subclinical hypothyroidism is a mild form of hypothyroidism where the only abnormal hormone level is an increased TSH – the other thyroid hormone levels are normal. In adults, there is controversy as to whether subclinical hypothyroidism should be treated and, if so, at what level of increased TSH should treatment be started. Part of the concern is that TSH levels may return to the normal range with some patients with subclinical hypothyroidism, so treatment would not be indicated. On the other hand, some patients will progress to overt hypothyroidism with marked symptoms if not treated. Most physicians agree that a TSH level >10 mU/L should be treated with Levothyroxine. There is little data in children with subclinical hypothyroidism as to who should be treated and if the recommendations should be any different than in the adult population. This study was performed to determine how many children with subclinical hypothyroidism progress to overt hypothyroidism over a 3 year period.

THE FULL ARTICLE TITLE:

Radetti G et al. The natural history of the normal/mild elevated TSH serum levels in children and adolescents with Hashimoto's thyroiditis and isolated hyperthyrotropinaemia: a three year follow-up. Clin Endocrinol (Oxf). October 10, 2011. [Epub ahead of print]. doi: 10.1111/j.1365-2265.2011.04251.x.

SUMMARY OF THE STUDY

A total of 382 children were studied in Italy over a period of three years. The mean age of the children was 10.5 years. Individuals were separated into two groups: those with an elevated TSH and negative thyroid antibodies and those with positive thyroid antibodies. Among the patients with positive thyroid antibodies, 236 had normal serum TSH and 86 (27%) had an increased TSH. A total of 39% who initially had an increased TSH increase had their serum TSH return to the normal range, while 39% remained stable and another 14% progressed to overt hypothyroidism. Of those patients with an increased TSH and negative antibodies, 21% progressed to overt hypothyroidism.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This is an important study because it shows that most children with subclinical hypothyroidism will not go on to develop overt hypothyroidism over a 3 year period. Further, many (39% in this study) will have their TSH levels return to normal. At this point, there is no way to determine which individual will progress to overt hypothyroidism and which will resolve their thyroid abnormalities. Thus, these children need to be followed closely before making the decision to treat.

— Heather Hofflich, DO

ATA THYROID BROCHURE LINKS

Hypothyroidism: http://thyroid.org/patients/patient_brochures/hypothyroidism.html

Thyroid Hormone Treatment: http://thyroid.org/patients/patient_brochures/hormonetreatment.html

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HYPOTHYROIDISM, continued

ABBREVIATIONS & DEFINITIONS

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

Hashimoto's thyroiditis: the most common cause of hypothyroidism in the United States. It is caused by antibodies that attack the thyroid and destroy the gland.

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.

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 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 in the United States.