



## HYPERTHYROIDISM

### Progression of subclinical hyperthyroidism to overt hyperthyroidism occurs more rapidly when thyroid nodules are the cause

#### BACKGROUND

Hyperthyroidism occurs when the thyroid gland is overactive (producing too much of the thyroid hormones). This is usually caused by Graves' disease or a toxic nodular goiter. Overt hyperthyroidism occurs when the thyroid hormones are elevated and TSH is suppressed. Subclinical hyperthyroidism (a milder version) occurs when only the TSH is low and the thyroid hormones are normal. While subclinical hyperthyroidism may simply be early in the disease, eventually progressing to overt hyperthyroidism, sometimes it resolves on its own or remains stable. Patients with overt hyperthyroidism usually require treatment with medications, radioactive iodine or thyroid surgery. Those with subclinical hyperthyroidism may not require any treatment aside from monitoring.

This study was performed to examine the factors which can predict the likelihood of rapid progression over a few years of subclinical hyperthyroidism to overt hyperthyroidism in patients with Graves' disease, toxic multinodular goiter or a toxic nodule.

#### THE FULL ARTICLE TITLE:

Shouten BJ et al. Subclinical thyrotoxicosis in an outpatient population-predictors of outcome. Clin Endocrinol (Oxf) 2011;74:257-61.

#### SUMMARY OF THE STUDY

A total of 96 patients with subclinical hyperthyroidism

treated at a hospital in New Zealand were studied. They were monitored for an average of 3.8 years. In the patients with Graves' disease (12 patients), the rate of progression was 9% per year. In those with toxic multinodular goiters (70 patients), the rate of progression was 21% per year. In those with toxic toxic nodules (14 patients), the rate of progression was 61% per year. No other clinical factors, such as gender, family history or symptoms helped to predict the progression.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study shows that if patients with subclinical hyperthyroidism have nodules, especially a single nodule, they are likely to progress to overt hyperthyroidism. The risk for progression is much less in those patients with subclinical hyperthyroidism due to Graves' Disease. Patients with nodules may consider definitive therapy (radioactive iodine or surgery) earlier in the course of the disease, but Graves' Disease patients may consider a more conservative course with observation.

— Jerrold Stock, MD

#### ATA THYROID BROCHURE LINKS

Hyperthyroidism: [http://thyroid.org/patients/patient\\_brochures/hyperthyroidism.html](http://thyroid.org/patients/patient_brochures/hyperthyroidism.html)

Graves disease: [http://thyroid.org/patients/patient\\_brochures/graves.html](http://thyroid.org/patients/patient_brochures/graves.html)

#### 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.

**Subclinical Hyperthyroidism** — a mild form of hyperthyroidism where the only abnormal hormone level is a decreased TSH.

**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.

**Toxic nodular goiter** — characterized by one or more nodules or lumps in the thyroid that may gradually grow and increase their activity so that the total output of thyroid hormone in the blood is greater than normal.

**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.