



HYPERTHYROIDISM

Does high-normal thyroid function increase risk for atrial fibrillation?

BACKGROUND

Thyroid hormone has clear effects on heart function. Patients with hyperthyroidism are known to be at increased risk for the development of an irregular heart rhythm known as atrial fibrillation. Indeed, patients that develop atrial fibrillation usually have their blood tested for thyroid hormones to determine if they are hyperthyroid. This also appears to be true with subclinical hyperthyroidism, where the TSH level is low but the thyroid hormone levels are normal. This study looked at the incidence of both thyroid disease and atrial fibrillation in a large population to determine the association between all aspects of thyroid function and atrial fibrillation.

THE FULL ARTICLE TITLE

Selmer C et al. The spectrum of thyroid disease and risk of new onset atrial fibrillation: a large population cohort study. *BMJ*. November 27, 2012 [Epub ahead of print].

SUMMARY OF THE STUDY

The study population consisted of 586,460 adult Danish primary care patients (mean age 50.2 years; 61% women) who underwent thyroid-function testing in Copenhagen between 2000 and 2010. Patients were followed until the end of 2010 or until they moved from the study area or died. Only patients that had no history of either thyroid abnormalities or atrial fibrillation were included in the study.

At baseline, 96% of patients had normal thyroid function, 0.3% had overt hyperthyroidism, 2% had subclinical

hyperthyroidism, 2% had subclinical hypothyroidism and 0.7% had overt hypothyroidism. Individuals were followed for a mean of 5.5 years, over which time 17,154 (2.9%) were diagnosed with new atrial fibrillation. As compared with individuals with normal thyroid function, the risk for atrial fibrillation was increased in individuals with both overt and subclinical hyperthyroidism. Interestingly, individuals with low normal TSH values were also found to have an increased risk of atrial fibrillation. Risk for atrial fibrillation was found to be decreased in patients with hypothyroidism as compared with individuals with normal thyroid function.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study confirms that patients with hyperthyroidism have an increased risk of atrial fibrillation. The new finding is that even those patients with normal thyroid hormone levels have an increased risk of atrial fibrillation if their TSH is low normal. This suggests that patients with low normal TSH values should be followed more closely than previously thought. Further research is needed to determine the full extent of effects of thyroid hormones on the risk for atrial fibrillation.

— Alan P. Farwell, MD

ATA THYROID BROCHURE LINKS

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

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.

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.

Atrial fibrillation: an irregular heart rhythm where there is loss of coordination between contractions of the chambers of the heart that circulates the blood throughout the body.