



HYPOTHYROIDISM

There is substantial overlap between the symptoms of patients with hypothyroidism and those with normal thyroid function

BACKGROUND

Hypothyroidism is a common medical problem. Since thyroid hormone affects the entire body, hypothyroidism can result in a variety of symptoms. However, hypothyroid symptoms are non-specific and they can also be seen in patients with normal thyroid function. Because of this overlap, it is sometimes difficult to determine if thyroid hormone treatment is needed in patients who only have an elevated TSH level. In general, patients with overt hypothyroidism who have both an increased TSH level and a decreased T_4 level are more symptomatic and the diagnosis is clearer. However, even these patients may develop only a few hypothyroid symptoms or they may be asymptomatic, especially in early stages of disease. The aim of this study was to evaluate the relative frequency and importance of different symptoms in patients with newly diagnosed overt hypothyroidism and matched individuals without thyroid disease.

THE FULL ARTICLE TITLE

Carlé A et al. Hypothyroid symptoms and the likelihood of overt thyroid failure: a population-based case-control study. *Eur J Endocrinol* 2014;171:593-602.

SUMMARY OF THE STUDY

This study included 140 patients newly diagnosed with overt hypothyroidism (elevated TSH and low T_4 levels) between March 1997 and December 2000 based on a registry linked to all laboratory databases from two cities in Denmark, Aalborg and Copenhagen. The diagnosis was confirmed by reviewing the patients' medical records. A total of 560 age-, sex-, and region-matched individuals with normal thyroid function and no history of thyroid disease were recruited from the population of the two cities for this study. The average TSH of the 140 hypothyroid patients was 54.5 mIU/L, while the average TSH of the controls was 1.24 mIU/L. The majority of the hypothyroid patients (95.7%) and 18.8% of those without thyroid disease had a positive TPO antibody test, which is the hallmark of autoimmune thyroid disease. All participants completed a questionnaire regarding their symptoms. A total of 13 symptoms were found to be associated with

hypothyroidism: fatigue (81% of patients), dry skin (63%), shortness of breath (51%), mood lability (46%), constipation (39%), globus sensation (36%), palpitations (35%), restlessness (33%), hair loss (30%), difficulty swallowing (29%), wheezing (27%), vertigo (24%), and anterior neck pain (16%). A total of 5.7% of the hypothyroid patients reported having no symptoms, while 70% of controls had at least one symptom associated with hypothyroidism. The hypothyroid patients reported having an average of 5 symptoms, while those without thyroid disease reported an average of two symptoms. The subjects reporting three symptoms had the same probability of being hypothyroid or euthyroid, while the subjects reporting more than three symptoms had a higher probability than average of being hypothyroid. No association was found between the number and type of symptoms and serum TSH, T_3 , or T_4 levels in the hypothyroid patients. Cold intolerance, a symptom reported in hypothyroid patients, was not evaluated in this study.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This is the first population based study confirming that hypothyroid patients can present with a variety of symptoms, which can also be seen in patients with normal thyroid function. Thyroid function tests should always be measured when there is a clinical suspicion in order to diagnose hypothyroidism. In this study, almost 6% of the overtly hypothyroid patients were free of symptoms. Therefore, by screening only symptomatic patients, we can miss a significant proportion of hypothyroid patients. The American Thyroid Association recommends a screening TSH every 5 years in all adults starting at 35 years of age.

— Alina Gavrila, MD, MMSC

ATA THYROID BROCHURE LINKS

Hypothyroidism: <http://www.thyroid.org/what-is-hypothyroidism>

Thyroid Function Tests: <http://www.thyroid.org/blood-test-for-thyroid>



HYPOTHYROIDISM, continued

ABBREVIATIONS & DEFINITIONS

Euthyroid: a condition where the thyroid gland is working normally and producing normal levels of thyroid hormone.

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

Overt Hypothyroidism: clear hypothyroidism with an increased TSH and a decreased T_4 level. All patients with overt hypothyroidism are usually treated with thyroid hormone pills.

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.

Thyroxine (T_4): the major hormone produced by the thyroid gland. T_4 gets converted to the active hormone T_3 in various tissues in the body.

TPO 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 and hyperthyroidism in the United States.

Thyroid Awareness Monthly Campaigns

The ATA will be highlighting a distinct thyroid disorder each month and a portion of the sales for Bravelets™ will be donated to the ATA. The month of January is **Thyroid Awareness month** and a bracelet is available through the [ATA Marketplace](#) to support thyroid cancer awareness and education related to thyroid disease.

