



HYPOTHYROIDISM IN OLDER ADULTS

Sequential TSH determinations may help in assessing the adequacy of treatment for overt hypothyroidism in older patients

BACKGROUND

Hypothyroidism is a common problem and the risk of developing hypothyroidism increases with age. In some studies, an increased TSH levels is seen in up to 25% of individuals over the age of 75. Severe hypothyroidism can be fatal and less severe hypothyroidism can lead to an increased risk of death if not diagnosed or if inadequately treated. Further, it is known that there is an increased risk of death associated with an underactive thyroid. To determine whether thyroid hormone treatment is adequate, measurements of thyroid stimulating hormone (TSH) in the blood are done. However, the target level TSH in the blood is not clearly established in older patients. This study evaluated the association between a series of TSH and free T₄ levels and risk of death in older patients with hypothyroidism treated with thyroid hormone.

THE FULL ARTICLE TITLE

Akirov A et al. Elevated TSH in adults treated for hypothyroidism is associated with increased mortality. *Eur J Endocrinol* 2017;176:57-66. Epub October 19, 2016.

SUMMARY OF THE STUDY

The study included 611 patients 60-80 years old with overt hypothyroidism treated with levothyroxine who were admitted to a hospital between 2011 and 2014. Labs including TSH and free T₄ were collected periodically

until the patients died or until the study ended in 2016. Patients were then grouped according to their TSH levels. A TSH level between 0.5-5.0 mIU/L was considered to be in the normal range. The authors found that overall death rate was 34% for all groups combined. More specifically, 28% died in the group with an average TSH of 0.5-2.5 mIU/L, 29% died in the group with an average TSH of 2.5-5.0 mIU/L and 54% died in the group with an average TSH of 5.0-10.0 mIU/L.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that older patients who still had an increased TSH despite being on thyroid hormone had a significantly higher risk of death than those whose TSH remained in the normal range. They also found that the free T₄ level did not influence risk of death. In older adults with hypothyroidism being treated with levothyroxine, physicians should aim for a TSH in the normal range in order to improve patients' survival.

— Maria Papaleontiou, MD

ATA THYROID BROCHURE LINKS

Hypothyroidism (Underactive): <http://www.thyroid.org/hypothyroidism/>

Thyroid Disease in the Older Patient: <http://www.thyroid.org/thyroid-disease-older-patient/>

ABBREVIATIONS & DEFINITIONS

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 an increased TSH and a decreased T₄ level. All patients with overt hypothyroidism are usually treated with thyroid hormone pills.

Thyroid hormone therapy: patients with hypothyroidism are most often treated with Levothyroxine in order to return their thyroid hormone levels to 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.



HYPOTHYROIDISM IN OLDER ADULTS, continued

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

Levothyroxine (T4): the major hormone produced by the thyroid gland and available in pill form as Synthroid™, Levoxyl™, Tirosint™ and generic preparations.

