



HYPERTHYROIDISM

Treatment of subclinical hyperthyroidism in the elderly

BACKGROUND

Subclinical hyperthyroidism refers to a mildly overactive thyroid and is defined as a low TSH (thyroid stimulating hormone) and a normal free thyroxine (FT₄). The two most common causes of subclinical hyperthyroidism are Graves' disease and one or more overactive nodules in the thyroid (toxic nodular goiter). As in overt hyperthyroidism, treatment options include radioactive iodine therapy, antithyroid medications and surgery. Unlike overt hyperthyroidism, the need to treat subclinical hyperthyroidism is less clear. This is partly due to the risks of the treatment options.

Subclinical hyperthyroidism can be broken down into Grade 1, when the TSH is slightly decreased (0.1-0.39 mU/L) and Grade 2 in which the TSH level is below 0.1mU/L. Most discussion about treating subclinical hyperthyroidism is focused on Grade 2. Some studies suggest that Grade 2 subclinical hyperthyroidism increases the risk of osteoporosis (weakening of the bones), irregular heart beat (atrial fibrillation) and heart failure.

The goal of this study was to determine the effectiveness of treating Grade 2 subclinical hyperthyroidism with either radioactive iodine therapy or the antithyroid medication methimazole (MMI). The results that were looked at included: return to normal thyroid function, as well as onset of an underactive thyroid, heart disease and death.

THE FULL ARTICLE TITLE

Azizi F et al. 2020 Treatment of subclinical hyperthyroidism in the elderly: Comparison of radioiodine and long-term methimazole treatment. *Thyroid*. Epub 2020 Aug 18. PMID: 32811342.

SUMMARY OF THE STUDY

Between 2006 and 2017, 83 patients with Grade 2 subclinical hyperthyroidism were enrolled in the study. Their average age was between 65 and 74 years old. Of these, 41 patients were treated with radioactive iodine and 42 patients were treated with MMI long term.

The results show that 5 years after receiving the radioactive iodine therapy, 66% of the patients developed an underactive thyroid and 34% had normal thyroid hormone levels. Among the patients who received MMI, 94% of them remained with normal thyroid hormone level and only 6% developed an underactive thyroid. No serious effects occurred in either group.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Over a study period of 5 years, both a one-time dose of radioactive iodine or daily MMI medication were effective and safe for treating Grade 2 subclinical hyperthyroidism in elderly patients. Hypothyroidism (underactive thyroid) developed in a greater proportion of patients who received radioactive iodine than in those who received MMI. This is important for patients to understand that the current treatment option for treating this condition work well and are safe.

— Maria Brito, MD

ATA THYROID BROCHURE LINKS

Hyperthyroidism in Pregnancy: <https://www.thyroid.org/hyperthyroidism-in-pregnancy/>

Graves' Disease: <https://www.thyroid.org/graves-disease/>

Radioactive Iodine Therapy: <https://www.thyroid.org/radioactive-iodine/>





HYPERTHYROIDISM, continued

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.

Methimazole: an antithyroid medication that blocks the thyroid from making thyroid hormone. Methimazole is used to treat hyperthyroidism, especially when it is caused by Graves' disease.

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

Radioactive iodine (RAI): this plays a valuable role in diagnosing and treating thyroid problems since it is taken up only by the thyroid gland. I-131 is the destructive form used to destroy thyroid tissue in the treatment of thyroid cancer and with an overactive thyroid.

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

