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HYPERTHYROIDISM

Long-term methimazole is an effective treatment for toxic nodular goiters

BACKGROUND

Hyperthyroidism is a condition where the thyroid gland is overactive and produces high levels of thyroid hormone in the blood. Graves' disease is the most common cause of hyperthyroidism in the United States. The entire gland is overactive in Graves' disease. Less common is a toxic nodular goiter, where one or more thyroid nodules are overactive and the rest of the gland is turned off. Antithyroid medications, such as Methimazole, are used to treat a toxic nodular goiter short-term to get a patient ready for either surgery or radioactive iodine therapy. The main results of either surgery or radioactive iodine therapy is the development of hypothyroidism, which will require life-long treatment with levothyroxine.

Long-term therapy with methimazole is not usually considered in treating patients with a toxic nodular goiter since this will never go into remission. However, methimazole has been shown to be safe for long term use in patients with Graves' disease. This study was done to compare treatment of toxic nodular goiter with long-term methimazole as opposed to radioactive iodine therapy.

THE FULL ARTICLE TITLE

Azizi F, Takyar MA, Madreseh E, Amouzegar A. Treatment of toxic multinodular goiter: comparison of radioiodine and long-term methimazole treatment. Thyroid. Epub 2019

SUMMARY OF THE STUDY

A total of 130 patients in Tehran, Iran were included in the clinical trial. They received methimazole therapy (for 5 to 8 years) or receive treatment with radioactive iodine therapy. Participants were less than 60 years old in age with an average age of about 50 years in both groups. Patients had a diagnosis of hyperthyroidism confirmed with thyroid function tests. Patients with Graves' disease were excluded. Patients either received a one-time dose of radioactive iodine therapy or were started on methimazole in a dose of 10 to 20 mg daily.

The patient in the methimazole-treated group were more likely to have normal thyroid function tests after 2 years (96 %) as compared to radioactive iodine therapy (54%). As expected, the size of the goiter was reduced more in the group treated with radioactive iodine therapy than methimazole. A few patients in both groups developed side effects from the treatments.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that long-term treatment with methimazole was safe and effective for normalizing the thyroid function in patients with a toxic nodular goiter with relatively few side effects. Methimazole therapy may be a viable and safe option for the treatment of toxic goiters over the long term. Further studies are needed to look at other outcomes such as impact on the quality of life and the cost of therapies.

—Vibhavasu Sharma, MD, FACE

ATA THYROID BROCHURE LINKS

Goiter: https://www.thyroid.org/goiter/

Hyperthyroidism (Overactive): https://www.thyroid.org/hyperthyroidism/

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

Thyroid Nodules: https://www.thyroid.org/thyroid-nodules/

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.

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.

Radioactive iodine: 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. I-123 is the non-destructive form that does not damage the thyroid and is used in scans to take pictures of the thyroid (Thyroid Scan) or to take pictures of the whole body to look for thyroid cancer (Whole Body Scan).