



GRAVES' DISEASE

Management of hyperthyroidism in patients with Graves' eye disease (orbitopathy)

BACKGROUND

Graves' disease is the most common cause of hyperthyroidism. Graves' disease can be treated with antithyroid drugs, radioactive iodine or surgery. One specific therapy ("block and replace") treated patients with a combination of antithyroid drugs and levothyroxine but is not commonly used currently as it did not appear to be any more effective than antithyroid drugs alone.

Graves' disease can also cause eye problems such as bulging of the eyes, damage to the eye muscles resulting in double vision, swelling of the eyelids, and in severe cases, optic nerve damage and loss of vision. This is called thyroid eye disease or Graves' orbitopathy. Some studies have suggested that Graves' orbitopathy may get worse depending on the treatment, especially when patients are treated with radioactive iodine instead of antithyroid drugs or thyroid surgery. These two articles address the best treatment of hyperthyroidism in patients with associated Graves' orbitopathy.

THE FULL ARTICLE TITLES:

Bartalena L. The dilemma of how to manage Graves' hyperthyroidism in patients with associated orbitopathy. *J Clin Endocrinol Metab.* doi:10.1210/jc.2010-2329.

Elbers L, Mourits M, and Wiersinga W. Outcome of very long-term treatment with antithyroid drugs in Graves' hyperthyroidism associated with Graves' orbitopathy. *Thyroid*, December 29, 2011. doi: 10.1089/thy.2010.0181.

SUMMARY OF THE STUDIES

Dr. Bartelena reviewed many of the trials of treatment of Graves' disease on eye problems. Studies of patients with radioactive iodine have shown that some patients without Graves' orbitopathy may develop it after treatment with radioactive iodine. Those patients who already have Graves' orbitopathy may have a worsening of their eye problems after radioactive iodine. Patients treated with antithyroid drugs or surgery have a lower

risk of developing, or worsening, Graves' orbitopathy. Patients who smoke also have a higher risk of developing orbitopathy and the combination of smoking and radioactive iodine increases the risk of worsening Graves' orbitopathy. Pretreatment of patients with Graves' orbitopathy with high-dose steroids (for example prednisone) reduces the risk of worsening Graves' orbitopathy following radioactive iodine treatment and also in patients who smoke but is associated with significant side effects.

The study by Dr. Elbers and colleagues evaluated the use of the "block and replace" therapy by sending out a questionnaire to patients with Graves' orbitopathy who had received this treatment. The patients stayed on the "block and replace" until the Graves' orbitopathy had stabilized. Following discontinuation of the "block and replace," 37% of the patients had a recurrence of hyperthyroidism, but none of the patients had significant worsening of their Graves' orbitopathy. When some of the patients with recurrent hyperthyroidism were subsequently treated with radioactive iodine, none developed worsening of their Graves' orbitopathy.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Radioactive iodine can worsen active Graves' orbitopathy, especially if the patient is a smoker, but the worsening can be prevented by the use of steroids. Using a "block and replace" approach to treat the hyperthyroidism until the eye disease becomes inactive may allow radioactive iodine to be used to treat recurrent hyperthyroidism without concern that it will worsen the eye problems. Further studies are needed to confirm this very interesting study.

— Glenn Braunstein, MD

ATA THYROID BROCHURE LINKS

Graves' disease: http://thyroid.org/patients/patient_brochures/graves.html

Radioactive Iodine Therapy: http://thyroid.org/patients/patient_brochures/radioactive.html

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GRAVES' DISEASE, continued

ABBREVIATIONS AND DEFINITIONS

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.

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.

Thyroid eye disease (TED) — also known as Graves orbitopathy. TED is most often seen in patients with

Graves' disease but also can be seen with Hashimoto's thyroiditis. TED includes inflammation of the eyes, eye muscles and the surrounding tissues. Symptoms include dry eyes, red eyes, bulging of the eyes and double vision.

Levothyroxine — the major hormone produced by the thyroid gland and available in pill form as LevoxyI™, Synthroid™, Levothroid™ and generic preparations.

Block and replace — treatment option for Graves' disease where patients are treated with a combination of antithyroid medication and Levothyroxine for a defined period of time.