



## HYPERTHYROIDISM

### Amiodarone may be continued in patients with amiodarone-induced hyperthyroidism treated with prednisone

#### BACKGROUND

Amiodarone is a drug commonly used to treat some irregular heart rhythms. However, because this drug contains a large amount of iodine, it can cause thyroid problems, including both hyperthyroidism and hypothyroidism. Amiodarone can cause hyperthyroidism where the thyroid is overactive (called type 1 amiodarone-induced thyrotoxicosis (AIT)). It can also lead to hyperthyroidism through a destructive effect on thyroid cells, a form of thyroiditis called AIT type 2. In most cases, the treatment of amiodarone-induced thyrotoxicosis (AIT) requires stopping the amiodarone in addition to other measures, such as antithyroid drugs and prednisone. Perchlorate, a chemical that causes the thyroid to discharge iodine from the gland has occasionally been used in the treatment of both type 1 and 2 AIT. The aims of this study were to determine that it may be possible to continue amiodarone in patients with AIT type 2 and to determine if perchlorate was useful for its treatment.

#### THE FULL ARTICLE TITLE:

Eskes SA et al. Treatment of amiodarone-induced thyrotoxicosis type 2: a randomized clinical trial. *J Clin Endocrinol Metab.* 2012; 97(2): 499-506.

#### SUMMARY OF THE STUDY

Patients with AIT type 2 and who agreed to continue amiodarone were recruited from 10 centers in The Netherlands. They were randomly assigned to one of three treatment groups: group A, prednisone 30 mg/day plus methimazole 30 mg/day; group B, sodium perchlorate 500 mg twice daily plus methimazole 30 mg/day; group C, prednisone 30 mg/day plus sodium perchlorate 500

mg twice daily plus methimazole 30 mg/day. Follow-up evaluation occurred at 4-week intervals to 28 weeks, then at 8-week intervals up to 2 years. Medication was adjusted based on thyroid-function tests.

Twelve patients were randomly assigned to groups A, 14 to group B and 10 to group C. Patients in group A reached normal T<sub>4</sub> levels in 4 weeks while it took 12 weeks for all other groups. The serum TSH normalized with the therapy in all the patients initially receiving prednisone (groups A and C), but prednisone had to be added to 4 of the 14 patients in group B. Recurrent hyperthyroidism occurred in 1 patient in group A and in 2 patients in group C.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that normal thyroid function can be restored with the use of prednisone in patients with AIT type 2 despite continuation of amiodarone, which may be necessary for the treatment of the irregular heart rhythms. The addition of perchlorate in combination with prednisone was no more effective than prednisone alone, so there appears to be no benefit using this drug in patients with AIT.

— M. Regina Castro, MD

#### ATA THYROID BROCHURE LINKS

Hyperthyroidism: [http://thyroid.org/patients/patient\\_brochures/hyperthyroidism.html](http://thyroid.org/patients/patient_brochures/hyperthyroidism.html)

Thyroiditis: [http://thyroid.org/patients/patient\\_brochures/thyroiditis.html](http://thyroid.org/patients/patient_brochures/thyroiditis.html)

#### ABBREVIATIONS & DEFINITIONS

**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.

**Thyroxine (T<sub>4</sub>):** the major hormone secreted by the thyroid gland. Thyroxine is broken down to produce Triiodothyronine which causes most of the effects of the thyroid hormones.

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## **HYPERTHYROIDISM**, continued

**Amiodarone:** an iodine-rich drug that is commonly used for the treatment of irregular heart rhythms. Amiodarone can cause thyroid problems, including both hypothyroidism and hyperthyroidism.

**Amiodarone induced thyrotoxicosis:** elevated thyroid hormone levels that can occur as a result of excessive iodine from amiodarone resulting in increased thyroid hormone production and secretion or to destruction

of thyroid cells with release of thyroid hormone into the blood.

**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.