CLINICAL THYROIDOLOGY **FOR THE PUBLIC**

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HYPERTHYROIDISM

The time lag between initiation of amiodarone treatment and first evidence of thyrotoxicosis is a useful indicator for identifying the type of amiodarone–induced thyrotoxicosis

BACKGROUND

Amiodarone, an iodine-rich medication used to treat abnormal heart rhythms, can result in thyrotoxicosis in 15% of patients. There are two distinct forms of amiodarone-induced thyrotoxicosis (AIT): type 1 AIT when the high iodine content of amiodarone precipitates an underlying thyroid disease (Graves' disease or toxic nodules) and causes hyperthyroidism and type 2 AIT, in which a destructive inflammation caused by amiodarone causes a release of preformed thyroid hormone into the circulation. It is important to differentiate between these two types, since they require different treatment. A few prior studies have showed that AIT can develop at any time during or even after the discontinuation of amiodarone because of body storage and slow release of this medication into the circulation. This study evaluated whether the time interval between the initiation of amiodarone treatment and the diagnosis of thyrotoxicosis is different and it can potentially help to differentiate between the two forms of AIT.

THE FULL ARTICLE TITLE

Tomisti L et al. The onset time of amiodarone-induced thyrotoxicosis (AIT) depends on AIT type. Eur J Endocrinol 2014; 171:363-8. Epub June 16, 2014.

SUMMARY OF THE STUDY

This is a study of 200 patients who were followed for AIT at an academic center in Italy between January 1987 and December 2012. A total of 157 men and 43 women were studied (mean age 62). Out of the 200 patients, 42 (21%) were diagnosed with type 1 AIT and 158 (79%) were diagnosed with type 2 AIT. Among the patients with type 1 AIT, 8 had Graves' disease, 6 had a toxic thyroid nodule and 28 had a toxic multinodular goiter. Type 1 AIT patients had significantly higher serum thyroid hormone levels compared to type 2 AIT patients. The average onset time of thyrotoxicosis was 3.5 months in the type 1 AIT group and 30 months in the type 2 AIT group after starting amiodarone. Out of the 200 patients, 38 (19%) developed thyrotoxicosis after amiodarone withdrawal. Most of these (36) were type 2 AIT patients who developed thyrotoxicosis at an average time of 5.5 months after amiodarone withdrawal. These 36 type 2 AIT patients were younger than the those who developed thyrotoxicosis during the amiodarone treatment. A shorter onset time of AIT was seen in patients with larger thyroid volume measured on ultrasound when analyzing the entire group.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study confirmed in a large group of patients that the two types of AIT have a different clinical picture. Thyrotoxicosis usually develops earlier in type 1 AIT compared to type 2 AIT patients. Type 2 AIT patients develop more severe thyrotoxicosis and a higher proportion of type 2 AIT patients develop thyrotoxicosis after discontinuing the treatment compared to AIT1 patients. Patients with type 1 AIT may require more intense follow-up during amiodarone therapy especially at the initiation of this treatment, while type 2 AIT patients may require monitoring for a longer period of time after amiodarone withdrawal.

— Alina Gavrila, MD, MMSC

ATA THYROID BROCHURE LINKS

Hyperthyroidism: http://www.thyroid.org/what-is-hyperthyroidism

Graves' disease: http://www.thyroid.org/what-is-graves-disease

Thyroid Nodules: http://www.thyroid.org/what-are-thyroid-nodules

HYPERTHYROIDISM, continued

ABBREVIATIONS & DEFINITIONS

Thyrotoxicosis: elevated blood levels of thyroid hormone.

Hyperthyroidism: the most common form of thyrotoxicosis when the thyroid gland is overactive and produces too much thyroid hormone. Hyperthyroidism may be treated with antithyroid meds (Methimazole, Propylthiouracil), radioactive iodine or surgery.

Iodine: an element found naturally in various foods that is important for making thyroid hormones and for normal thyroid function. Common foods high in iodine include iodized salt, dairy products, seafood and some breads.

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 thyroid nodule/multinodular goiter: a condition 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.

Thyroid Awareness Monthly Campaigns

The ATA will be highlighting a distinct thyroid disorder each month and a portion of the sales for Bravelets™ will be donated to the ATA. The month of November is **Hyperthyroidism Awareness Month** and a bracelet is available through the ATA Marketplace to support thyroid cancer awareness and education related to thyroid disease.