



HYPERTHYROIDISM

Early thyroidectomy may decrease death in amiodarone-induced thyrotoxicosis (AIT)

BACKGROUND

Amiodarone is a medication used to treat heart problems, mainly related to irregular heart rhythms. Amiodarone contains a lot of iodine and can affect the thyroid, causing hypothyroidism and hyperthyroidism. The hyperthyroidism caused by amiodarone (amiodarone-induced thyrotoxicosis, AIT) can be severe and difficult to treat. AIT greatly increases the risk of severe heart complications in patients that are already at high risk because of their irregular heart rhythms. It can take weeks to months to stabilize thyroid hormones with medication in patients with AIT, and the longer AIT is present, the greater the risk of heart complications and death. Surgery is an effective treatment for AIT if the patients are healthy enough to undergo an operation. Therefore, some have recommended surgery, and possibly early surgery with removal of the entire thyroid gland (total thyroidectomy), as the best and quickest treatment for AIT. One concern of early thyroidectomy is the risk of complications during the operation in a patient that is still hyperthyroid. The authors here look at what is the best timing of surgery for AIT to achieve to best outcomes.

THE FULL ARTICLE TITLE

Cappellani D et al 2020 Duration of exposure to thyrotoxicosis increases mortality of compromised AIT patients: The role of early thyroidectomy. *J Clin Endocrinol Metab* 105(9):dgaa464. PMID: 32678873

SUMMARY OF THE STUDY

The authors looked at 64 patients over a 20 year period in Pisa, Italy that had AIT and were treated with a total

thyroidectomy. They compared outcomes (including death related to the surgery, the frequency of death from heart problems over the next 5 years and others) in patients that underwent an early thyroidectomy when the patient was still hyperthyroid vs late thyroidectomy after the hyperthyroidism was controlled.

Most patients were older and male and started with slightly decreased heart function. Patients that had a late thyroidectomy had a higher death rate both in the immediate post-operative period as well as over the next 5 years. However, in patients with the worst cardiac problems, death rate was higher in patients that had an early thyroidectomy. These results were without taking other patient factors into account. When all patient and treatment factors were accounted for, only patient age and duration of being hyperthyroid were important predictors of death from cardiovascular disease.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The authors conclude that in general, for patients with AIT, early thyroidectomy leads to decreased early and late death from heart problems. This is important because current guidelines and historical practice call for medical management of AIT and surgery as a last resort. Therefore the authors conclude that surgery needs to be considered early for these patients, except possibly those with the worst heart problems.

— Melanie Goldfarb, MD

ATA THYROID BROCHURE LINKS

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

Thyroid Surgery: <https://www.thyroid.org/thyroid-surgery/>





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.

Euthyroid: a condition where the thyroid gland is working normally and producing normal levels of thyroid hormone.

Thyroidectomy: surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a *total thyroidectomy*. When less is removed, such as in removal of a lobe, it is termed a *partial thyroidectomy*.

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 (AIT): 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