CLINICAL THYROIDOLOGY **FOR PATIENTS**

A publication of the American Thyroid Association

AMERICAN THYROID ASSOCIATION
FOUNDED 1923
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## HYPERTHYROIDISM

# Lithium improves the effect of radioactive iodine treatment in patients with Graves' disease or toxic nodular goiter

### BACKGROUND

Graves' disease and toxic nodular goiter are two common causes of hyperthyroidism. Radioactive iodine is a common treatment option for patients with both of these disorders. Radioactive iodine is given by mouth and works by destroying the overactive thyroid cells slowly over several months. Lithium is a medication that works by increasing the time that radioactive iodine is retained within the thyroid and, thus, may improve the effect of the radioactive iodine treatment. Patients who are given lithium before radioactive iodine may require less radioactive iodine and/or have higher success rates in having their hyperthyroidism treated. This study examined the effect of lithium on the effectiveness of radioactive iodine therapy for hyperthyroidism due to Graves' disease or toxic nodular goiter.

### THE FULL ARTICLE'S TITLE:

Martin NM et al. Adjuvant lithium improves the efficacy of radioactive iodine treatment in Graves' and toxic nodular disease. Clin Endocrinol 2012;77:621-7.

### SUMMARY OF THE STUDY

This was a study of 204 patients with either Graves' disease or toxic nodular goiter who were treated with radioactive iodine between 2000-2002 in London, England. Half of the patients received radioactive iodine alone and the other half received lithium in addition to radioactive iodine therapy. At one year after treatment, there was a higher rate of euthyroidism (normal thyroid function) in those who took lithium and radioactive iodine (93%) as compared to those who received radioactive iodine alone (84%). Those who took lithium also achieved euthyroidism slightly faster than those who did not.

### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This is the largest study that has been published examining the use of lithium with radioactive iodine. Most of the patients in the study had Graves' disease and the findings are most pertinent to this group. Overall, the results suggest that lithium may be a useful medication in some patients with Graves' disease or toxic nodular goiter treated with radioactive iodine.

— Angela Leung, MD

### ATA THYROID BROCHURE LINKS

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

Goiter: http://www.thyroid.org/what-is-a-goiter

Radioactive Iodine Therapy: http://www.thyroid.org/radioactive-iodine

### ABBREVIATIONS & 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.

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.

Radioactive iodine (RAI): 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).