



HYPERTHYROIDISM

Radioactive iodine increases the risk of strokes in patients with hyperthyroidism or nodular goiter

BACKGROUND

The thyroid is a unique organ because it absorbs iodine, which it uses to make the thyroid hormones. Since most other cells in the body do not concentrate iodine, doctors are able to use radioactive iodine to treat hyperthyroidism or a nodular goiter without affecting other organs in the body. Radioactive iodine is given in the form of a capsule, is rapidly incorporated into the thyroid cells and, over time, destroys the thyroid cells and decreases the thyroid hormone levels. However, studies have suggested that hyperthyroid patients treated with radioactive iodine have an increased risk of having strokes. Until now this was felt to be from the hyperthyroidism itself or from the hypothyroidism that results after radioactive iodine therapy. This study was done to examine whether radioactive iodine itself might contribute to strokes.

THE FULL ARTICLE TITLE

la Cour JL et al. Radioiodine therapy increases the risk of cerebrovascular events in hyperthyroid and euthyroid patients. *Eur J Endocrinol* 2015; 172:771-8.

SUMMARY OF THE STUDY

The authors studied 5022 subjects 18 years of age or older who had been treated with radioactive iodine for hyperthyroidism (4000 patients) or nodular goiter (1022 patients) between 1975 and 2008 at three university hospitals in Denmark. Each patient was compared to 4 randomly selected normal volunteers without thyroid problems (total 20,540) who did not receive radioactive

iodine. Patients were followed from the date of radioactive iodine treatment as to the number strokes that occurred.

The average age of subjects was 61 years, 14.3% of them were men and the average length of follow-up was 11.5 years. Even when other preexisting medical conditions were considered, radioactive iodine-treated subjects still had a 1.18 times higher risk of having a stroke when compared to normal volunteers. The risk was higher in both hyperthyroid (1.17 times) and nodular goiter (1.21 times) patients.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

These results suggest that patients treated with radioactive iodine for hyperthyroidism or nodular goiter may have an increased risk of strokes. While further study is needed, the authors suggest that the radiation from radioactive iodine therapy affect the large arteries in the neck that supply blood to the brain thus increasing the risk of a stroke.

— Philip Segal, MD

ATA THYROID BROCHURE LINKS

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

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

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

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.

Goiter: a thyroid gland that is enlarged for any reason is called a goiter. A goiter can be seen when the thyroid is overactive, underactive or functioning normally. If there are nodules in the goiter it is called a nodular goiter; if there is more than one nodule it is called a multinodular goiter.



HYPERTHYROIDISM, continued

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).

Stroke: a clinical syndrome caused by disruption of blood supply to the brain. A stroke may be caused by a clogged artery in the brain or the vessels in the neck that supply the brain (ischemic stroke) or from bleeding in the brain (hemorrhagic stroke).

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 August is **Thyroid and Pregnancy Awareness Month** and a bracelet is available through the [ATA Marketplace](#) to support thyroid cancer awareness and education related to thyroid disease.

