CLINICAL THYROIDOLOGY **FOR PATIENTS**

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THYROID CANCER

It takes only one month for urinary iodine to return to its baseline value after the use of iodinated contrast agents in patients who have undergone thyroidectomy

BACKGROUND

The thyroid gland takes up and concentrates iodine within the gland in order to make thyroid hormone. Nuclear medicine studies of the thyroid (thyroid scans) and radioactive iodine therapy work by giving radioactive iodine to the patient in either pill or liquid form. The radioactive iodine is then taken up by thyroid gland and either provides a picture of the gland, in the case of a thyroid scan, or destroys the gland, in the case of radioactive iodine therapy. The latter is the goal with radioactive iodine therapy for thyroid cancer, as the radioactive iodine is taken up by the cancer cells and destroys them. You can prevent radioactive iodine from getting into the thyroid by taking iodine pills that flood the gland with iodine and block the uptake of the radioactive iodine.

Intravenous contrast agents contain a lot of iodine. These are frequently used during radiology studies such as CT scans. If a patient undergoes radioactive iodine treatment too soon after receiving intravenous contrast, the large amount of iodine makes the radioactive iodine therapy ineffective. There is not a lot of data about how long after receiving contrast the extra iodine is cleared from the body. The current study measures iodine in the urine after receiving intravenous contrast in patients who underwent thyroid surgery.

THE FULL ARTICLE TITLE

Padovani R et al. One month is sufficient for urinary iodine to return to its baseline value after the use of water soluble iodinated contrast agents in post-thyroidectomy patients requiring radioiodine therapy. Thyroid. June 6m, 2012 [Epub ahead of print].

SUMMARY OF THE STUDY

This study looked at 25 patients who underwent a CT scan of the chest and neck with intravenous contrast after undergoing total thyroidectomy and radioactive iodine therapy. The patients were given contrast and urine iodine levels were measured before the contrast, at 1 week, 1 month, 2 months and 3 months afterward. The study showed that the iodine was elevated at one week and at one month the urine iodine was back to normal.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study demonstrates that in patients without a thyroid gland who receive intravenous contrast, iodine levels are back to normal at 1 month. This means patients need to wait only 1 month after receiving intravenous contrast before getting treated with radioactive iodine for their thyroid cancer.

— Ronald B. Kuppersmith, MD, FACS

ATA THYROID BROCHURE LINKS

Cancer of the Thyroid: http://www.thyroid.org/cancer-of-the-thyroid-gland/

Thyroid Surgery: http://www.thyroid.org/why-thyroid-surgery/

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

ABBREVIATIONS & DEFINITIONS

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.

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.

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).