



HYPERTHYROIDISM

Increased risk of hyperthyroidism within 2 years after exposure to intravenous contrast dye

BACKGROUND

Iodine is essential to the normal function of the thyroid gland. However, too much iodine can cause either hyperthyroidism or hypothyroidism. This can occur in patients who receive large amounts of iodine from x-rays involving intravenous contrast dyes. The exact risk of thyroid problems after intravenous contrast dye is unknown. This study was performed to estimate the risk of hyper- and hypothyroidism following exposure to iodine containing contrast dyes used in CT scans and heart catheterizations. The aim of the study was to determine the risk of changes in thyroid function, so patients and their doctors can be advised of these risks.

THE FULL ARTICLE TITLE:

Rhee CM et al. Association between iodinated contrast media exposure and incident hyperthyroidism and hypothyroidism. *Arch Internal Medicine*. 2012; 172: 153-159.

SUMMARY OF THE STUDY

A total of 4100 patients were identified who had a normal thyroid TSH level at one point and a second TSH for comparison within 2 weeks to 2 years after the first test. A low TSH developed in about 5% of the 4100 patients and the risk was almost double if the patient had received intravenous contrast dye. The risk was higher if the patient was female, had some kidney damage and was non-white. A high TSH level developed in about 6% of

the 4100 patients, but there was no clear-cut risk over the 2 year time period that could be attributed to intravenous contrast dye. A subset of patients did develop severe hypothyroidism within 6 months of the contrast dye.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that patients that receive iodine containing intravenous contrast dye are twice as likely to develop hyperthyroidism within 2 years as compared to patients that did not have these x-ray studies. Also, a subset of patients are at risk to develop severe hypothyroidism after receiving intravenous contrast dye. Since x-ray studies using intravenous contrast dye are very common, this study suggests that many patients that are at risk of developing thyroid problems after these studies. More studies are needed to determine if it is worthwhile to screen for thyroid problems before and after these tests. However, it is important for patients to realize that they should alert their doctor if they develop any symptoms that may be related to the thyroid after receiving intravenous contrast dye for any x-ray study.

— Jerrold Stock, MD

ATA THYROID BROCHURE LINKS

Hypothyroidism: http://thyroid.org/patients/patient_brochures/hypothyroidism.html

ABBREVIATIONS & DEFINITIONS

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.

TSH: thyroid stimulating hormone — produced by the pituitary gland that regulates thyroid function; also the best screening test to determine if the thyroid is functioning normally.

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.

Hypothyroidism: a condition where the thyroid gland is underactive and doesn't produce enough thyroid hormone. Treatment requires taking thyroid hormone pills.