CLINICAL THYROIDOLOGY **FOR THE PUBLIC**

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THYROID CANCER

Exposure to low dose radioactive pre-ablation scanning does not affect long-term outcomes of patients with thyroid cancer

BACKGROUND

Radioactive iodine (I-131) is a very effective adjunctive treatment for thyroid cancer after a patient undergoes thyroid surgery. Since only thyroid cells take up and concentrate iodine, radioactive iodine serves as a "magic bullet" to destroy thyroid cancer cells as well as normal thyroid cells. Prior to the high dose radioactive iodine therapy, a low dose of radioactive iodine is often used to identify if there is any spread of the thyroid cancer outside of the neck (pre-ablation scans). Some physicians believe that the small dose of radioactive iodine given for these pre-ablation scans will "stun" but not kill thyroid cancer cells, making the high dose of radioactive iodine less effective. An alternative to the I-131 pre-ablation scans is the use of a a different isotope of radioactive iodine (I-123) which does not cause thyroid cell damage and will not result in stunning. However, I-123 scans are much more expensive. This study compared patients who had pre-ablation scans to those who did not to assess whether the "stunning" after I-131 radioactive iodine pre-ablation scans affected long-term outcomes in patients with thyroid cancer.

THE FULL ARTICLE TITLE

Yap BK, Murby B. No adverse affect in clinical outcome using low pre-ablation diagnostic ^{131}I activity in differentiated thyroid cancer: refuting thyroid stunning effect. J Clin Endocrinol Metab 2014 Apr 24:jc20141405 [Epub ahead of print].

SUMMARY OF THE STUDY

In Manchester, England, between 2004 to 2008, patients routinely got a low dose (1.1 mCi) pre-ablation radioactive iodine scan 24 hours before being treated with high dose (95mCi) radioactive iodine therapy 6 days later. Between 2009 to 2011, most patients did not get the pre-ablation scan prior to receiving the high dose radioactive iodine therapy. A total of 305 patients that received the pre-ablation scan were compared with 237 patients that did not receive the pre-ablation scan. The patients were tested at various times to look for recurrence of their thyroid cancer by blood tests for the thyroid cell marker thyroglobulin as well as stimulation testing with recombinant human TSH (ThyrogenTM). There was no difference between the groups in either thyroglobulin levels or stimulation testing. Recurrence of thyroid cancer was found in 4.3% of the patients that received the pre-ablation scans and 3.4% in patients that did not receive the scans.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The findings of this study suggest that doing a diagnostic pre-ablation scan 6 days prior to high dose radioactive iodine does not result in "stunning" or decrease the effectiveness of the radioactive iodine treatment. While the practice of performing pre-ablation scans is less common recently in many institutions, it is reassuring that this study has shown that such scanning does not affect the thyroid cancer recurrence rates at 3 years of follow up.

—Wendy Sacks, MD

ATA THYROID BROCHURE LINKS

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

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

ABBREVIATIONS & DEFINITIONS

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