



## THYROID CANCER

### Successful low dose radioactive iodine therapy in papillary microcarcinoma

#### BACKGROUND

Thyroid cancer is the fastest rising cancer in women and papillary cancer is the most common type of thyroid cancer. Many of these patients have small papillary thyroid cancers <1cm in size, so called papillary microcarcinoma. In general these patients are at low risk for cancer recurrence and very few die of their cancer. Many thyroid cancer patients are treated with radioactive iodine after thyroid surgery to destroy any remaining cancerous thyroid tissue. Recently, the use of radioactive iodine in low risk patients has been questioned as it appears to provide very little benefit to these patients. When treated, smaller doses of radioactive iodine have been successfully used to destroy remaining thyroid tissue in these low risk patients with thyroid cancer. This study was done to find out if two small doses of radioactive iodine would be successful to destroy remaining thyroid tissue after the surgery in patients with papillary thyroid microcarcinoma.

#### THE FULL ARTICLE TITLE:

Clerc J et al Outpatient thyroid remnant ablation using repeated low <sup>131</sup>I-iodine activities (740 MBq/20 mCi x 2) in patients with low-risk differentiated thyroid cancer. J Clin Endocrinol Metab. January 11, 2012 [Epub ahead of print].

#### SUMMARY OF THE STUDY

A total of 160 patients with papillary microcarcinoma were treated with low doses (20 mCi) of radioactive iodine two weeks after thyroidectomy. After 6-18 months,

the low dose radioactive iodine therapy was repeated. All patients had serial ultrasound imaging and measurements of thyroglobulin to follow their thyroid cancer. The success rate for destroying all remaining thyroid tissue was 76% after one dose and 90% after the second dose. The most important predictor of a successful treatment with radioactive iodine was a thyroglobulin <10 after the surgery and before the first treatment.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

In patients with papillary microcarcinoma, two low dose treatments of radioactive iodine are effective to destroy the remaining thyroid tissue after surgery. This study suggests that these low risk patients can benefit from radioactive iodine without being exposed to the potential risks of high dose radioactive iodine. Patients with papillary microcarcinoma usually do not need radioactive iodine therapy after the thyroid surgery. However, if the decision is made to treat with radioactive iodine, then low doses should be used.

— Jamshid Farahati, MD

#### ATA THYROID BROCHURE LINKS

Thyroid cancer: [http://thyroid.org/patients/patient\\_brochures/cancer\\_of\\_thyroid.html](http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html)

Radioactive Iodine Therapy: [http://www.thyroid.org/patients/patient\\_brochures/radioactive\\_iodine.html](http://www.thyroid.org/patients/patient_brochures/radioactive_iodine.html)

Thyroid Surgery: [http://thyroid.org/patients/patient\\_brochures/surgery.html](http://thyroid.org/patients/patient_brochures/surgery.html)

#### ABBREVIATIONS & DEFINITIONS

**Papillary thyroid cancer:** the most common type of thyroid cancer.

**Papillary microcarcinoma:** a papillary thyroid cancer smaller than 1 cm in diameter.

**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).

**mCi:** millicurie, the units used for I-131.

**Thyroidectomy:** surgery to remove the entire thyroid gland. When the entire thyroid is removed it is termed a total thyroidectomy. When less is removed,

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such as in removal of a lobe, it is termed a partial thyroidectomy.

**Thyroid Ultrasound:** a common imaging test used to evaluate the structure of the thyroid gland. Ultrasound uses soundwaves to create a picture of the structure of the thyroid gland and accurately identify and characterize nodules within the thyroid. Ultrasound is also frequently used to guide the needle into a nodule during a thyroid nodule biopsy.

**Thyroglobulin:** a protein made only by thyroid cells, both normal and cancerous. When all normal thyroid tissue is destroyed after radioactive iodine therapy in patients with thyroid cancer, thyroglobulin can be used as a thyroid cancer marker in patients that do not have thyroglobulin antibodies.