



## THYROID CANCER

### WHAT IS THE STUDY ABOUT?

Patients with thyroid cancer are often treated with radioactive iodine (I-131) after surgery to destroy any normal and /or cancerous thyroid tissue that may be left in the neck. This study looked at how well several different doses of radioactive iodine destroyed this thyroid tissue remaining in the neck.

**THE FULL ARTICLE TITLE:** Kusacic Kuna S, Samardzic T, Testic V, Medvedec M, Kuna K, Bracic I, Despot M, Dodic, D. Thyroid remnant ablation in patients with papillary cancer: a comparison of low, moderate, and high activities of radioiodine. *Nucl Med Commun* 2009;30: 263-9.

### WHAT WAS THE AIM OF THE STUDY?

The aim of this study was to determine the lowest dose of radioactive iodine necessary to destroy any thyroid tissue remaining in the neck following thyroid cancer surgery.

### WHO WAS STUDIED?

This study took place in a single hospital treatment center in Croatia. They studied 466 patients treated for papillary thyroid cancer. 404 patients were women and 62 were men. The average age of the patients studied was 47 years old.

### HOW WAS THE STUDY DONE?

The treatment records of the thyroid cancer patients were reviewed. All patients had surgery to remove the thyroid prior to the radioactive iodine therapy. The dose of radioactive iodine was made by the treating doctor and fell into four groups: 24 mCi, 40 mCi, 50 mCi and 124 mCi. To determine the how well the radioactive iodine worked, patients had repeat scans twice over the next year and a half. A successful treatment meant that there was no uptake in the neck after the follow up scans.

### WHAT WERE THE RESULTS OF THE STUDY?

Patients that were treated with either 50 mCi or 124 mCi were more likely to has a successful results than those that were treated with either 24 mCi or 40 mCi. Since there was no difference between 50 mCi and 124 mCi, it appears that the 50 mCi dose was the lowest dose to treat thyroid cancer patients after initial surgery.

### HOW DOES THIS COMPARE WITH OTHER STUDIES?

There have been many other smaller studies looking at the best dose of radioactive iodine. Several smaller studies have suggested that 50 mCi was not as good as 100 mCi in destroying thyroid tissue after surgery. Several other studies have shown that 50 mCi was better than lower doses. The current study is the largest one from a single treatment center

### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

Since large doses of radioactive iodine may cause some side effects in a small number of patients, the lowest effective dose of radioactive iodine should be used to destroy thyroid tissue in the neck following initial surgery for thyroid cancer. This study suggests that doses greater than 50 mCi may not be needed.

— Frank Crantz, 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://thyroid.org/patients/patient\\_brochures/radioactive.html](http://thyroid.org/patients/patient_brochures/radioactive.html)

### ABBREVIATIONS & DEFINITIONS

**Papillary thyroid cancer** — the most common type of thyroid cancer

**Radioactive iodine** — this plays a valuable role in diagnosing and treating thyroid problems since it is taken up only by the thyroid gland. There are two types of radioactive iodine used for thyroid problems. 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