



## THYROID CANCER

# Giving radioactive iodine within 3 months after thyroidectomy results in better responses than delaying therapy beyond 3 months after surgery

### BACKGROUND

Patients diagnosed with thyroid cancer usually have an excellent prognosis. This is due to effective therapies, including surgery and, when needed, radioactive iodine therapy. Radioactive iodine works like a “magic bullet”, as it is taken up and destroys only thyroid cells, both normal and cancerous. The process of destroying residual thyroid tissue is called radioactive iodine ablation. In patients who have an indication to undergo radioactive iodine ablation, there is currently no agreement regarding the best timing of administration. The objective of this study was to evaluate the response to treatment when giving radioactive iodine within 3 months of thyroidectomy versus  $\geq 3$  months after surgery.

### THE FULL ARTICLE TITLE

Li H et al 2018 Delayed initial radioiodine therapy related to incomplete response in low- to intermediate-risk differentiated thyroid cancer. Clin Endocrinol (Oxf) 88:601–606. Epub 2018 Feb 18. PMID: 29338092.

### SUMMARY OF THE STUDY

A total of 235 patients with low-to-intermediate risk thyroid cancer were included in the study. These patients were treated with radioactive iodine between December 2008 and May 2015 following a total thyroidectomy at the Peking Union Medical College Hospital. They were divided into two groups: Group 1 included 187 patients who received radioactive iodine ablation  $< 3$  months following surgery and Group 2 included 43 patients who received it  $\geq 3$  months after surgery. The two groups were

similar in regard to age, sex, type of cancer and cancer stage. Response to therapy was categorized as excellent, indeterminate or incomplete (persistent disease by imaging or blood tests).

The authors found that there was a significant difference between the two groups in terms of response to therapy when excluding the impact of other factors such as patient age, sex, cancer type, cancer stage and radioactive iodine dose. Overall, 78.1% of patients in group 1 had an excellent response compared to 62.5% in group 2. Additionally, only 4.3% of patients in group 1 had an incomplete response compared to 18.8% patients in group 2.

### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study found that giving radioactive iodine ablation within 3 months after surgery resulted in better outcomes than waiting for  $> 3$  months in patients with low-to-intermediate risk thyroid cancer. This is helpful when planning the best treatment plan. However, it is possible that some of the patients included in the study had low risk thyroid cancer that may not warrant radioactive iodine ablation according to current guidelines. More data is needed to determine if patients with more aggressive thyroid cancer would respond in a similar fashion. In any event, for patients who have more worrisome features, administration of radioactive iodine within 3 months from surgery is most likely preferable.

— Maria Papaleontiou, MD

### ATA THYROID BROCHURE LINKS

Thyroid Cancer (Papillary and Follicular): <http://www.thyroid.org/thyroid-cancer/>  
Radioactive Iodine: <http://www.thyroid.org/radioactive-iodine/>





## THYROID CANCER, continued

### ABBREVIATIONS & DEFINITIONS

**Differentiated thyroid cancers:** Most thyroid cancers are differentiated cancers. The cells in these cancers look a lot like normal thyroid tissue when seen with a microscope. These cancers develop from thyroid follicular cells and include papillary and follicular thyroid cancers.

**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).

**Thyroid Remnant Ablation:** destruction of the small amount of thyroid tissue that remains after surgery (thyroidectomy) with the use of radioactive iodine.

**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.

**Excellent response:** undetectable thyroglobulin (tumor marker) with negative imaging in thyroid cancer patients following treatment

**Biochemical incomplete response:** detectable thyroglobulin (tumor marker) with negative imaging in thyroid cancer patients following treatment

**Structural incomplete response:** evidence of persistent structural disease on imaging in thyroid cancer patients following treatment

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