



THYROID CANCER

Serum thyroglobulin levels predict cancer recurrence following radioactive iodine treatment for low risk thyroid carcinoma

WHAT IS THE STUDY ABOUT?

A diagnosis of thyroid cancer is becoming more common; indeed, thyroid cancer is the fastest rising cancer in women. Fortunately, thyroid cancer can be effectively treated in most cases and patients with low risk thyroid cancer (for example, those with small cancers that have not spread outside the thyroid at the time of diagnosis) have an excellent survival rate. However, approximately 15% of these patients will develop recurrence of the cancer during the next 30 years. This study examined several variables including the features of the initial pathology and serum thyroglobulin levels to determine which ones would best predict cancer recurrence.

THE FULL ARTICLE TITLE:

Pelttari H et al. Post-ablative serum thyroglobulin is an independent predictor of recurrence in low-risk differentiated thyroid carcinoma: a 16-yr follow-up study. *Eur J Endocrinol* 2010;163:757-63. EJE-10-0553 [pii];10.1530/EJE-10-0553 [doi].

WHAT WAS THE AIM OF THE STUDY?

The aim of this study was to determine what factors predict cancer recurrence in patients with low risk thyroid cancer.

WHO WAS STUDIED?

A total of 495 patients with low risk thyroid cancer who were treated at the Helsinki University Central Hospital from 1983 through 1997 were studied. The average follow-up of these patients was 16 years.

HOW WAS THE STUDY DONE?

The records from all patients were reviewed and factors such as age, sex, primary cancer size, cancer spread invasion into the tissues surrounding the thyroid, presence of cancer in the lymph nodes and serum thyroglobulin levels following surgery and following treatment with radioactive iodine were recorded. A statistical analysis examined these variables in patients who did not

have recurrence as compared to those who did have a recurrence of their cancer. Factors that were more common in patients with recurrence could be identified this way and used to predict cancer recurrence.

What were the results of the study?

Detection of serum thyroglobulin after total or near total thyroidectomy followed by radioactive iodine destruction of residual thyroid tissue was predictive of cancer recurrence, being found in 36.4% of patients with subsequent recurrence as compared with 9.8% without recurrence. In addition, the other independent predictors of disease recurrence were the presence of cancer in the lymph nodes and invasion of the cancer into the soft tissues surrounding the thyroid at the time of initial surgery.

HOW DOES THIS COMPARE WITH OTHER STUDIES?

Other studies have also shown that elevated levels of serum thyroglobulin following radioactive iodine treatment for low risk differentiated thyroid cancer are associated with cancer recurrence. Although most recurrences are detected within the first 10 years following initial therapy, there are late recurrences and, therefore, a study such as this with a 16 year median follow-up period is important for examining factors that may predict recurrence.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

An elevated serum thyroglobulin in thyroid cancer patients predicts which patients are more likely to have a recurrence of their cancer and should be measured routinely in these patients.

— Glenn Braunstein, MD

ATA THYROID BROCHURE LINKS

Thyroid cancer: http://thyroid.org/patients/patient_brochures/cancer_of_thyroid.html

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THYROID CANCER, continued

ABBREVIATIONS & DEFINITIONS

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.

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).

Lymph node — bean-shaped organ that plays a role in removing what the body considers harmful, such as infections and cancer cells.

Cancer recurrence — this occurs when the cancer comes back after an initial treatment that was successful in destroying all detectable cancer at some point.