



THYROID CANCER

Survival is similar in high risk thyroid cancer patients treated with radioactive iodine therapy after either thyroid hormone withdrawal or recombinant human TSH

BACKGROUND

After the initial surgery for thyroid cancer, many patients are treated with radioactive iodine. Patients are prepared for radioactive iodine treatment by increasing TSH levels, either by stopping thyroid hormone therapy for a period of time and becoming hypothyroid (thyroid hormone withdrawal, THW) or by administering TSH in the form of recombinant human TSH (rhTSH, Thyrogen). Either way is effective in treating any remaining cancer that remains in the neck as well as cancer that has spread into the lymph nodes of the neck. It is not clear if whether rhTSH is as effective as THW in treating thyroid cancer that has spread outside of the neck (metastatic) into the bones or lung. This study compares the survival of high risk patients with thyroid cancer metastatic to the bones and lungs who were treated with radioactive iodine after rhTSH as compared to after THW.

THE FULL ARTICLE TITLE:

Tala H et al. Five-year survival is similar in thyroid cancer patients with distant metastases prepared for radioactive iodine therapy with either thyroid hormone withdrawal or recombinant human TSH. *J Clin Endocrinol Metab.* May 11, 2011.

SUMMARY OF THE STUDY

This study examined the records of 175 patients with thyroid cancer and spread to bone (28%), lungs (52%) or both (19%) from 1993 to 2010. A total of 35 patients were treated with radioactive iodine after THW, 58 after rhTSH, and 82 patients had THW with one or more treatments and subsequently radioactive iodine was administered after rhTSH.

There was no difference in survival between patients in any of the groups. Age was the only predictor of overall survival, with a decreased survival in the older patients. Separating out the patients with spread of the cancer to the lung also showed that radioactive iodine after rhTSH was equally effective as after THW. The average survival of patients with spread of the cancer to the lung was 12.5 years.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This is the first report to show a similar 5-year survival rate in patients with thyroid cancer metastatic to the lung and bones treated with radioactive iodine after preparation with either THW or rhTSH. This study is exciting because it suggests that most patients can be effectively treated with radioactive iodine after rhTSH and do not have to become hypothyroid for the treatment. More studies need to be done to confirm these findings.

— M. Regina Castro, MD

ATA THYROID BROCHURE LINKS

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

Radioactive Iodine Therapy: http://thyroid.org/patients/patient_brochures/radioactive.html

Hypothyroidism: http://thyroid.org/patients/patient_brochures/hypothyroidism.html

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THYROID CANCER, continued

ABBREVIATIONS & DEFINITIONS

Hypothyroidism: a condition where the thyroid gland is underactive and doesn't produce enough thyroid hormone. Treatment requires taking thyroid hormone pills.

Thyroid Stimulating Hormone (TSH): produced by the pituitary gland that regulates thyroid function; also the best screening test to determine if the thyroid is functioning normally.

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).

Recombinant human TSH (rhTSH): human TSH that is produced in the laboratory and used to produce high levels of TSH in patients after an intramuscular injection. This is mainly used in thyroid cancer patients before treating with radioactive iodine or performing a whole body scan. The brand name for rhTSH is Thyrogen™.

Thyroid Hormone Withdrawal (THW): this is used to produce high levels of TSH in patients by stopping thyroid hormone pills and causing short-term hypothyroidism. This is mainly used in thyroid cancer patients before treating with radioactive iodine or performing a whole body scan.