



THYROID CANCER

Higher initial doses of radioactive iodine therapy for thyroid cancer may decrease recurrence and improve long-term survival in older patients

BACKGROUND

The treatment of thyroid cancer usually involves surgery (total thyroidectomy) and often includes radioactive iodine therapy. Radioactive iodine has been shown to improve survival and decrease recurrence rates with aggressive thyroid cancer, but not in small, low risk thyroid cancer. This is especially true in young patients with small papillary thyroid cancers. As such, low risk patients with thyroid cancer are often not treated with radioactive iodine therapy and, when they are treated, lower doses of radioactive iodine are often used. Studies of these patients over many years are lacking, as this is a relatively recent topic of study. Because of this, there is some concern we are underestimating the potential impact of this lower dose treatment on cancer recurrence. This study was done to compare different initial doses of radioactive iodine therapy on rates of complete remission, recurrence, and thyroid cancer deaths, as well as impact on life expectancy.

THE FULL ARTICLE TITLE

Verburg FA et al. Long-term survival in differentiated thyroid cancer is worse after low activity initial post-surgical ¹³¹I therapy in both high- and low-risk patients. *J Clin Endocrinol Metab* 2014;99:4487-96.

SUMMARY OF THE STUDY

A review of records was performed in a University Hospital setting in Germany. This included 1298 patients with papillary or follicular thyroid cancer treated with total thyroidectomy and at least one radioactive iodine treatment between January 1980 and June 2008. Radioactive iodine treatment doses changed over time, ranging from 27-95 mCi, based upon the physician

preference at the time. Prior to treatment, radioactive iodine imaging and ultrasound was performed. Further surgery was done prior to radioactive iodine therapy if findings on imaging suggested that was necessary.

Using this strict definition of complete remission, patients required more numerous treatments with radioactive iodine if they received low initial radioactive iodine doses. Death from thyroid cancer was low in older patients with low risk cancer. However, if the patients were followed longer, it was noted that the patients in the lower radioactive iodine dose group had a higher death rate at 10-15 years than in the middle and high dose groups. In high risk patients without spread of the cancer outside of the neck, recurrence rates were higher in the low radioactive iodine dose group. Life expectancy was not changed in any of the three groups in younger patients but was decreased in both the low dose and high dose groups of older patients.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

A lower dose of radioactive iodine in older patients (in both low and high risk cancers) was associated with higher death rates from thyroid cancer. Patients over the age of 45 may require higher initial doses (>54 mCi) of radioactive iodine to have lower recurrence rates and improved survival. This study suggests that older patients with thyroid cancer may need for higher doses of radioactive iodine therapy.

— Julie E. Hallanger Johnson, MD

ATA THYROID BROCHURE LINKS

Thyroid cancer: <http://www.thyroid.org/cancer-of-the-thyroid-gland>

ABBREVIATIONS & DEFINITIONS

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 CANCER, continued

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

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