



THYROID CANCER

Long-term salivary gland function in thyroid cancer survivors who received radioactive iodine

BACKGROUND

Radioactive iodine is commonly used in the treatment of thyroid cancer. Long-term side effects of radioactive iodine treatment in thyroid cancer survivors may include damage to the salivary glands. Symptoms may include: dry mouth (xerostomia), pain or swelling in the glands (sialadenitis) and changes in taste. The authors of this study examined the effect of a single dose of radioactive iodine treatment on salivary gland function of thyroid cancer survivors. The authors examined salivary gland function using nuclear medicine testing before and about 5 years after a single dose administration of radioactive iodine, as well as salivary gland symptoms at follow-up. Risk factors for the development of abnormal salivary function were also examined.

THE FULL ARTICLE TITLE

Jeong SY et al. Salivary gland function five years after a radioiodine ablation in patients with differentiated thyroid cancer: direct comparison of pre and post-ablation scintigraphies and their relation to xerostomia symptoms. *Thyroid*. November 15, 2012.

SUMMARY OF THE STUDY

The authors studied 213 thyroid cancer patients who were treated at a single hospital in Korea. The patients all received one dose of radioactive iodine with doses ranging from 100 mCi to 150 mCi. None of the patients had salivary gland symptoms before radioactive iodine treatment and no one had external beam radiation treatment to the neck. Salivary gland function was checked prior to radioactive iodine treatment, as well as 5-6 years later. About 16% of survivors (35/213) reported having a dry mouth at follow-up about 5 years after radioactive iodine treatment. Furthermore, about 18% of survivors reported having short-term pain or salivary

gland swelling after radioactive iodine treatment. About 20% of salivary glands had some evidence of worsening salivary function on nuclear medicine testing. There was a direct relationship between the patients' reported salivary symptoms and the presence of significant abnormalities on salivary gland nuclear medicine testing. Significantly higher rates of dry mouth were reported by patients who were treated with about 150 mCi of radioactive iodine (17.9%), compared to those who received about 100 mCi (7.8%). Also, on nuclear medicine testing, moderate to severe worsening of salivary gland function was more commonly seen in patients treated with 150 mCi of radioactive iodine compared to 100 mCi.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study suggests that radioactive iodine therapy at doses of 100 - 150 mCi causes salivary gland dysfunction in 16% - 20% of patients. Thus, salivary gland symptoms are not uncommon in thyroid cancer patients treated with radioactive iodine therapy. In general there is a trend for using less radioactive iodine therapy and at lower doses when used in low risk patients and this study certainly supports this approach. More research is needed to examine the risk of salivary gland side effects in thyroid cancer patients treated with doses lower than those examined in this study.

— Anna Sawka, MD

ATA THYROID BROCHURE LINKS

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

Radioactive Iodine Therapy: <http://www.thyroid.org/radioactive-iodine>

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THYROID CANCER, continued

ABBREVIATIONS & DEFINITIONS

Papillary thyroid cancer: the most common type of thyroid cancer.

Follicular thyroid cancer: the second most common type of thyroid cancer.

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

Total thyroidectomy: surgery to remove the entire thyroid gland.

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.

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

Sialadenitis: inflammation of salivary gland.

Xerostomia: dry mouth due to lack of saliva, frequently observed after radiation to the head and neck and after I-131 therapy.