



## THYROID CANCER

### Radioactive iodine therapy and pregnancy in women

#### BACKGROUND

Radioactive iodine therapy is an important part of the treatment of advanced thyroid cancer. It works because the radioactive iodine is taken up and concentrated in thyroid cells, both normal and cancerous, and destroys these cells. However, the radiation from the radioactive iodine circulating in the blood after the treatment may affect other tissues in the body. In particular, the ovaries may be particularly sensitive to the radiation from radioactive iodine and this may lead to future problems with fertility. In women, radioactive iodine therapy has been associated with irregular menstrual cycles, earlier menopause, and delayed pregnancy. Women who receive radioactive iodine therapy are generally advised to avoid pregnancy in the 6-12 months after treatment, due to the risks of radiation to the eggs within the ovaries.

In women, one way of measuring ovarian reserve (i.e. the ability to achieve a pregnancy) are blood levels of anti-Mullerian hormone (AMH). This study was done to examine the changes in blood AMH levels among women with thyroid cancer who receive radioactive iodine therapy.

#### THE FULL ARTICLE TITLE

Yaish I et al. A single radioactive iodine treatment has a deleterious effect on ovarian reserve in women with thyroid cancer: Results of a prospective pilot study. *Thyroid*. 2018 Feb 21. doi: 10.1089/thy.2017.0442. [Epub ahead of print]

#### SUMMARY OF THE STUDY

This study evaluated 24 premenopausal women who received radioactive iodine following thyroid cancer surgery. The researchers measured blood levels of AMH before radioactive iodine was given and 3, 6, 9, and 12 months after the treatment. After three months, blood levels of AMH were lower than before the RAI treatment. At the end of one year, average AMH blood levels remained low at approximately 32% less than initial levels. The dose of radioactive iodine therapy was not related to the blood AMH levels. However, there were more women age 35 years who had lower AMH levels, compared to those younger than age 35.

#### WHAT ARE THE IMPLICATIONS OF THIS STUDY?

The findings of this study are relevant to women who receive thyroid cancer treatment. Thyroid cancer occurs over three times more commonly in women than men, and at least a third of women are diagnosed during their childbearing years. The results show that women who receive radioactive iodine therapy for their thyroid cancer have lower blood levels of AMH in the first few months after treatment. Further research is needed to confirm these findings, to see how good of a marker AMH levels are for future fertility, and to evaluate how long the lower AMH levels persist in individuals.

— Angela M. Leung, MD, MSc

#### ATA THYROID BROCHURE LINKS

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

Pregnancy and Thyroid Disease: <https://www.thyroid.org/thyroid-disease-pregnancy/>

#### 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*).

