

Radioactive iodine treatment in women affects ovarian reserve and may affect fertility

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Women of reproductive age who have thyroid cancer should be cautious about receiving radioactive iodine treatment, which affects their remaining egg supply - their ovarian reserve - and may affect their fertility, new research from Israel finds. The results of this ongoing study will be presented Saturday, April 2, at ENDO 2016, the annual meeting of the Endocrine Society in Boston.

"This is the first study ever to prospectively address the impact of [radioactive iodine treatment](#) on ovarian reserve. In our day and age, when growing numbers of women of reproductive age are diagnosed with thyroid cancer and when fertility problems are rampant, these findings should serve as an additional consideration for physicians contemplating radioactive iodine for their patients," said senior author Karen Tordjman, MD, associate professor of medicine at the Sackler Faculty of Medicine of Tel Aviv University. "Low-risk thyroid cancer patients may not derive any survival advantage from the treatment but may end up paying the cost of decreased fertility."

"Earlier menopause has been reported in women undergoing radioactive iodine treatment, and given the finite number of primordial follicles women start with at birth, radiation injury to germinal cells is not expected to be reversible," she cautioned.

Dr. Tordjman and her colleagues studied the effect of radioactive iodine treatment on the ovarian reserve of women treated for differentiated thyroid cancer (DTC) by measuring their blood levels of anti-Müllerian hormone (AMH) and following the patients for up to one year after treatment. (Higher AMH levels indicate more remaining eggs.)

They enrolled 30 premenopausal women between the ages of 20 and 45 who were scheduled to be

treated with radioactive iodine after their DTC surgery. In addition, the investigators also enrolled five women treated with radioactive iodine for Graves' disease. All 30 women reported having regular menses prior to treatment, and 19 of them had had children. Women with prior pelvic surgery or irradiation were excluded from the study. The researchers assessed blood AMH levels by immunoassay at baseline and every three months for up to a year after treatment.

High [radioactive iodine](#) doses appeared to impair ovarian reserve. Overall, the women showed a 45 percent decrease in AMH levels three months after treatment and the recovery after one year was not complete. Because most women received high doses, the researchers could not determine if the dosage affected the [ovarian reserve](#). So, to examine a potential dose effect, they grouped the four patients who had received low RAI doses for DTC with the five who had received low RAI doses for Graves' disease. Among these nine women, baseline AMH levels were low and remained low in later assessments.

To date, 23 women have received treatment. Of these, 18 have been reevaluated after treatment, and the study continues.

The Institute of Endocrinology, and the Racine IVF Unit at the Department of Obstetrics and Gynecology, both at Tel Aviv Sourasky Medical Center, conducted and supported this study.

Provided by The Endocrine Society

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