# DOES RADIOACTIVE IODINE THERAPY AFFECT OVARIAN RESERVE?

**Berna Evranos[1], Sevgul Fakı [2], Sefika Burcak Polat [2], Nagihan Bestepe[1], Reyhan ERSOY [2], Bekir CAKIR [2]**

[1] Ataturk Education and Research Hospital, Department of Endocrinology and Metabolism, Ankara, Turkey
[2] Yildirim Beyazit University, Faculty of Medicine, Department of Endocrinology and Metabolism, Ankara, Turkey

## Introduction

➢ Thyroid carcinoma is common in young women. Radioactive iodine (RAI) therapy has been confirmed as a useful treatment in the management of differentiated thyroid carcinoma (DTC). For women with DTC, the effect of RAI therapy on gonadal and reproductive function is an important consideration. We aimed to evaluate effects of RAI therapy on ovarian function

## Methods

➢Women younger than 40 years old and diagnosed with thyroid cancer that required RAI therapy were enrolled in this study. Patients with ovarian insufficiency were excluded. Early follicular phase serum follicle stimulating hormone (FSH), luteinizing hormone (LH), estradiol and anti-müllerian hormone (AMH) levels were measured before and 3-6 months after RAI therapy. Friedman test is used to detect changes in FSH, AMH, LH and estradiol levels by RAI therapy with time.

## Results

➢ 18 patients with a mean age of 31.9 ± 4.9 years were enrolled in this study. Median AMH levels were 4.2 (2.96-17.42) ng/mL, 2.21 (0.84-3.69) ng/mL, 2.08 (0.86-6.12) ng/mL before and 3-6 months after RAI therapy, respectively. Median FSH levels were 5.5 (3.78-15.5) mIU/mL, 5.32 (4.19-35.36) mIU/mL, 6.07 (4.24-13.69) mIU/mL before and 3-6 months after RAI therapy, respectively. In addition to these findings, changes in LH and estradiol levels are shown in table 1. AMH levels before RAI therapy were higher than after RAI therapy(p=0.021).AMH levels at 3 and 6 months after RAI therapy were not different. FSH,LH and estradiol levels were similar before and after RAI therapy.

**Table 1 Assessment of ovarian reserve before and after RAI therapy**

| | Before RAI therapy | 3 months after RAI therapy | 6 months after RAI therapy | p |
|---|---|---|---|---|
| **AMH** ng/mL | 4.2 (2.96-17.42) | 2.21 (0.84-3,69) | 2.08 (0.86-6.12) | **0.021** |
| **FSH** mIU/mL | 5.5 (3.78-15.5) | 5.32 (4.19-35.36) | 6.07 (4.24-13.69) | **p>0.05** |
| **LH** mIU/mL | 5.45 (2.71-11.63) | 6.7 (1.79-35.37) | 5.79 (2.04-20.21) | |
| **Estradiol** pg/mL | 40.76 (24.06-115.4) | 59.02 (25.8-210.3) | 41.3 (26.46-162) | |

**AMH:** Anti-mullarian hormone**, FSH:**Follicle stimulating hormone**, LH:**Luteinizing hormone **RAI**:Radioactive iodine

## Conclusion

➢ AMH is considered an important marker of ovarian reserve. Ovarian reserve decreases in first 6 months after RAI therapy. Further large prospective studies are necessary to determine its predictive interest for post-treatment residual fertility.