THYROID DISORDERS IN YOUNG FEMALES WITH POLYCYSTIC OVARY SYNDROME: IS THYROID VOLUME ASSOCIATED WİTH SERUM INSULIN LIKE GROWTH FACTOR-1 LEVEL?

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BACKGROUND

- Polycystic ovary syndrome (PCOS) is one of the most common disorders affecting at least 5 to 10% of women of reproductive age.
- Increased prevalance of autoimmune thyroiditis and goiter were reported in PCOS patients.
- This study investigated the prevalance of hypothyroidism, thyroid autoimmunity, ultrasonographic features and presence of nodules in PCOS patients and compare them with the control group. We also aimed to detect correlation of thyroid volume (TV) with serum insulin-like growth factor-1 (IGF-1) and the other hormon levels in patients with PCOS.

MATERIALS AND METHODS

- Seventy PCOS patients and 84 age matched controls were enrolled in this study. Patient group and the control group were compared with each other according to hormonal parameters, anthropometric measures, thyroid volume, echogenicity on ultrasonography (USG) and autoimmunity.
- We also investigated the correlation between TV and IGF-1 levels in the PCOS group.

RESULTS

- Body mass index (BMI), Ferriman Gallwey score (FGS), fasting insulin level, dehydroepiandrosterone-sulfate (DHEA-S), total and free testosterone, luteinizing hormone (LH), thyroid volume and insulin like growth factor binding protein-3 (IGFBP-3) levels were significantly higher in PCOS patients compared to the control group.
- Thyroid volume was similar in patients with or without insulin resistance diagnosed with HOMA-IR.
- There was no differences according to prevalence of hypothyroidism or ultrasonographic features, in between the groups. We have detected a positive and significant correlation between TV and BMI.

Table 1. Correlation of different hormonal and antropometric parameters with thyroid volume

Variables	Correlation Coefficient	p-value
BMI	0,278	**0,020**
IGF BP3	0,152	0,210
IGF-1	-0,118	0,332
TSH	-0,280	**0,019**
HOMA	0,079	0,515
LH	0,429	<0,01

Table 2. Comparison of the groups according to ultrasonographic findings

Thyroid parenchyme	PCOS (n=70)	CONTROL (n=84)	p
Homogenous	40 (57%)	60 (71,4%)	0,064
Heterogenous	30 (43%)	24 (28,5%)	
Nodularity present	53 (75,7%)	69 (82,2%)	0,716
Nodularity absent	17 (24,3%)	15 (17,8%)	

CONCLUSION

- As a conclusion, we found that thyroid autoimmunity and nodularity were similar between PCOS and control subjects whereas TV was more in the PCOS group. Two parameters that were found to be positively associated with TV were BMI and serum LH level.
- Oral cantraceptives which are the mainstay of PCOS treatment can reduce LH and decrease TV and the number of patients with goiter.
- There is need for further studies measuring pre and post therapy thyroid volume and its association with serum LH measurements in PCOS patients receving oral contraceptives in order to prove aforementioned hypothesis