

RESEARCH ARTICLE

The Prevalence of Thyroid Autoimmunity (Anti-thyroid Peroxidase and Anti-thyroglobulin) in Sera of Iraqi Women with Polycystic Ovaries

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ABSTRACT

Background: Thyroid disorders and polycystic ovarian syndrome (PCOS) are the commonest endocrine disturbance in Iraqi womankind.

Patients and Methods: During the period August 2019 to March 2020 collected about 75 blood samples from women 50 patients, aged 18 to 39 years, married, and 25 healthy women as control, who applied to Salah Al-Din Health hospital, Salah Al-Din, Iraq, was inclusive in our study. Estimation levels of antithyroglobulin (anti-TG), anti-thyroid peroxidase (anti-TPO) by used CL900i.

Results: The study considered age range of 18–39, about 38% of patients with polycystic ovaries were in age group (<30 years), while about 62% in age group (≥30 years), as well as serum Anti-TPO level, was significantly higher among cases than controls. In contrast, no significant difference was detected among controls and patients concerning anti-TG.

Conclusion: About 38% of patients with polycystic ovaries were in age group (<30 years), so Serum Anti-TPO level was significantly higher among cases than controls. In comparison, no significant difference was detected among controls and patients concerning for Anti-TG.

Keywords: Anti-thyroid peroxidase (Anti-T.PO), Aznti-thyroglobulin (Anti TG), Iraqi women, Polycystic ovaries (PCO)

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INTRODUCTION

The commonest endocrine disturbances involve 6–8% of women in reproductive time is PCOS which is characterized by increase in androgen level (HA)/oligomenorrhea, hirsutism, and polycystic ovaries (PCO).¹ PCOS definition is the presence of two of the next three norms: oligo-ovulation or anovulation, increased androgen clinically and or biochemically, and polycystic-ovaries appearance by ultrasound.²

The thyroid autoimmunity prevalence are recorded high level in PCOS people compared to women in general.³⁻⁵ The close association in between PCOS and auto-immune disorder of thyroid is seemingly conclusive,⁶ Hashimoto's thyroiditis (HT) is auto-immune disorder of thyroid in which the basic markers are Anti-peroxidase antibodies and anti-thyroglobulin antibodies,⁷ Low progesterone levels in

PCOS lead to overstimulation of immune system so leads to autoantibodies production, thus it can be classified as an auto-immune disturbance.⁸

Gleicher *et al.* suggested that PCOS development could be imputed to functional auto-antibodies, including thyroid auto antibodies like anti-thyroid per-oxidase (anti-TPO), and antibodies thyroglobulin antibodies (TG-ab).⁹

PATIENTS AND METHODS

Patients

During the period August 2019 to March 2020 collected about 75 blood samples from women 50 patients, aged from 18 to 39 years, married, and 25 healthy women as control, who applied to Salah Al-Din Health hospital, Salah Al-Din, Iraq, were included in the study.

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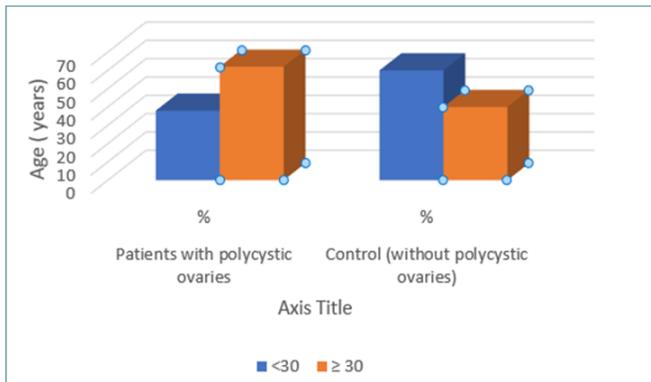


Figure 1: Distribution of Patients with polycystic ovaries and Control (Healthy) according to age.

Table 1: Tabulation polycystic ovaries Patients and Control (Healthy) according to age

Age (Years)	Patients with polycystic ovaries		Control (without polycystic ovaries)	
	No.	%	No.	%
<30	19	38	15	60
≥ 30	31	62	10	40
Total	50	100	25	100

Table 2: Levels of Anti-TG and Anti-T.PO in a woman with polycystic ovaries and control (Healthy)

Thyroid autoimmunity	PCOS (M ± SD)	Control (without polycystic ovaries) (M ± SD)	p-value
Anti-TPO	2.9 ± 2.5	1.64 ± 0.74	<0.001
Anti-TG	25.04 ± 16.50	25.00 ± 17.21	>0.001

Methods

Two cc of blood samples of venous origin were put into tubes of biochemistry which don't has anticoagulant material, for ten min four thousand rpm was centrifuged and collected promptly in eppendorf tubes then at -80°C were stored till time of test. anti-TG, anti-TPO, levels using CL900i.

Statistical Analysis

Analysis was done with SPSS 18.0 package. Descriptive statistics were offered with frequency, mean, percentage, median, standard deviation (SD), maximum (max), and minimum (min) values while evaluating all findings acquired in the study. p<0.05 values were considered as statistically significant.

RESULTS

Results in Table 1 and Figure 1 showed that: the age range of participants range between 18 and 39, about 38% of patients with polycystic ovaries were in age group (<30 years), while about 62% in age group (≥30 years), as well as a woman without polycystic ovaries (control) in age group (<30 years) as 60% compared to in age group (≥30 years).

Table 2 and Figure 2 showed that serum Anti-TPO level was significantly higher among cases than controls. While

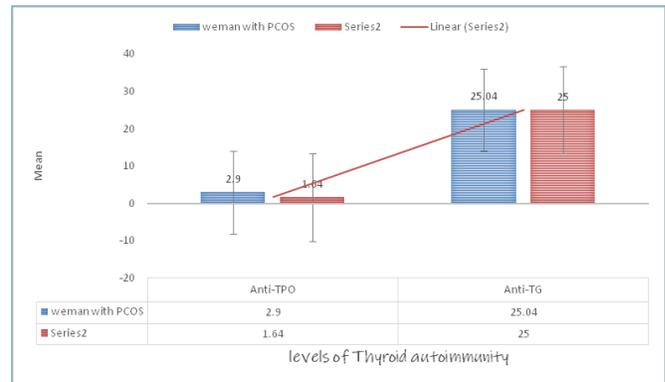


Figure 2: Levels of Anti-TG & Anti-T.PO in woman with polycystic ovaries and Control (Healthy).

no significant difference was detected between patients and controls regarding Anti-TG.

DISCUSSION

The frequency of PCOS in the results of the current study was 38% in women age group (<30 years) and 62% in the age group (≥30 years); these results were in complete agreement with previous researches¹⁰ as his community-based study showed that the frequency of PCOS in Sri Lanka was 6.3% in women their age ranging between 15 and 39 years. Also, a study conducted in Palestine showed that the prevalence of PCOS is about 7.3% among those aged 18 to 24 years.¹¹

Auto-immune thyroiditis is a consequence of auto-antibodies against (I) or extra ingredients of thyroid. Anti-thyroid antibodies against the thyroid including anti-thyroid peroxidase (anti-T.PO), thyrotrophic receptor (TR--abs), and antibodies against thyroglobulin.⁵

The current study showed that serum Anti-TPO level was significantly higher among cases than controls. At the same time, Anti-TG shows no significant difference among controls and patients. Patrikova *et al.* had suggested the potent association of PCO S, with anti-thyroid antibodies, for instance, anti-TPO 7.81%,¹² and Kachuei *et al.*, 2012 reported potent association of anti-thyroglobulin with p value = 0.275 and anti-TPO antibodies with p = 0.040 in patients with PCOS.¹³

CONCLUSION

1. About 38% of patients with polycystic ovaries were in the age group (<30 years), while about 62% were in the age group (≥30 years).
2. Serum Anti-TPO level was significantly higher among cases than controls. while Anti-TG shows no significant difference among controls & patients.

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