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Original Research Article

THYROID DISORDERS AND POLYCYSTIC OVARY SYNDROME

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Abstract

Background: Thyroid disorders and polycystic ovary syndrome (PCOS) are two of the most common endocrine disorders in the general population. To study the thyroid profile in polycystic ovarian syndrome.

Methods: 50 cases of women with PCOS based on Rotterdam's criteria and an equal number of age-matched controls (women without PCOS) were included in the study.

Results: In our study T4 level was significantly lower in PCOS group (0.69± 0.56 ng/ml) as compare to control (1.87± 0.86 ng/ml). T3 level was significantly higher in PCOS group (2.38± 1.09 ng/ml) as compare to control (2.11± 1.06 ng/ml). TSH level was significantly higher in PCOS group (8.12± 6.32 ng/ml) as compare to control (3.36± 1.06 ng/ml).

Conclusion: High prevalence of thyroid disorders in PCOS patients thus points towards the importance of early correction of hypothyroidism in the management of infertility associated with PCOS.

Keywords: T4, T3, TSH, PCOS

Introduction

Thyroid disorders and polycystic ovary syndrome (PCOS) are two of the most common endocrine disorders in the general population. Although the etiopathogenesis of hypothyroidism and PCOS is completely different, these two entities have many features in common. An increase in ovarian volume and cystic changes in ovaries have been reported in primary hypothyroidism. In the other direction, it is increasingly realized that thyroid disorders are more common in women with PCOS as compared to the normal population. Polycystic ovary syndrome (PCOS) is an endocrine disorder affecting women of reproductive age. The worldwide prevalence of PCOS ranges from 9 to 19.9%, depending on population characteristics and diagnostic criteria [1-2]

Material & Methods

Type of Study: Observational study

CASE - Women with PCOS which were diagnosed by Rotterdam's Criteria were cases.

Inclusion Criteria

- Age group - 13-45 years.
- Giving written informed consent

Exclusion Criteria

- Women on OCPs
- Women on steroids
- Hyperprolactinemia
- Congenital Adrenal Hyperplasia
- Cushing's Syndrome
- Virilizing tumor of ovary
- Vitiligo
- Endometriosis

CONTROL - Women of the same age group visiting OPD with problems unrelated to Rotterdam's Criteria of PCOS were controls.

Inclusion Criteria

- Age group - 13-45 years.
- Giving written informed consent

Exclusion Criteria

- Menstrual irregularity
- Hyperandrogenism
- With polycystic ovaries
- Insulin resistance
- Inflammatory and autoimmune disease
- Metabolic abnormalities

Results

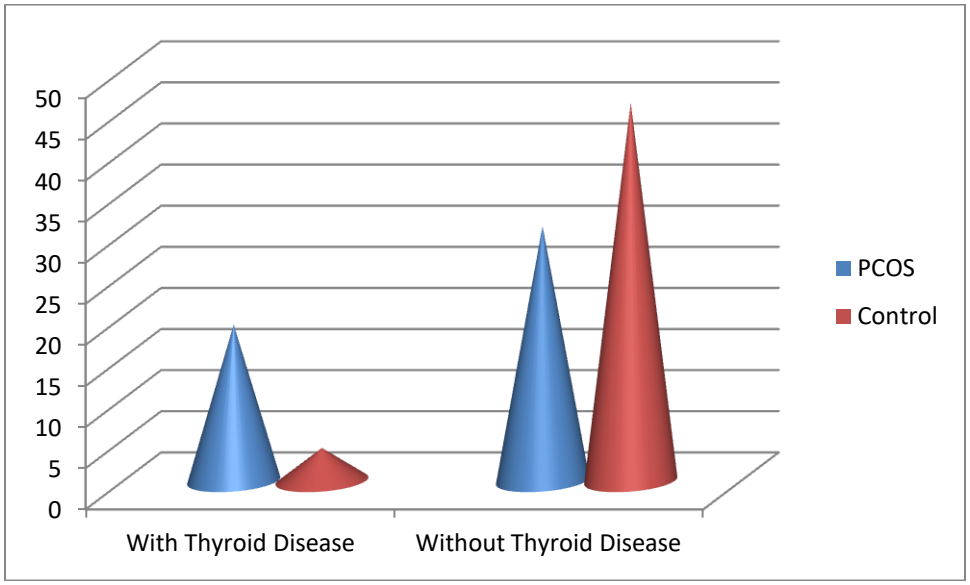

Figure 1: Risk of Thyroid Disorder in PCOS and Control Group

38.00% PCOS cases were present with thyroid disorder.

Table 1: Thyroid function test

Variables	Cases		Controls		p-value
	Mean	SD	Mean	SD	
T_3	2.38	1.09	2.11	1.06	0.06
T_4	0.69	0.56	1.87	0.86	0.001
TSH	8.12	6.32	3.36	1.06	0.001

T4 level was significantly lower in PCOS group (0.69± 0.56 ng/ml) as compare to control (1.87± 0.86 ng/ml). T3 level was significantly higher in PCOS group (2.38± 1.09 ng/ml) as compare to control (2.11± 1.06 ng/ml). TSH level was significantly higher in PCOS group (8.12± 6.32 ng/ml) as compare to control (3.36± 1.06 ng/ml).

Discussion

Dysfunction and anatomic abnormalities of the thyroid are among the most widely recognized maladies of the endocrine organ. Variations from the norm in the flexibly of thyroid hormone to the fringe tissue are related with adjustment in various metabolic procedures. Beginning phases of thyroid brokenness (before side effects are self-evident) can prompt unpretentious change in ovulation and endometrial receptivity, which may have significant impact on richness. Childish hypothyroidism if untreated prompts sexual adolescence. Untreated adolescent hypothyroidism causes a deferral in the beginning of adolescence followed by anovulatory cycles. In grown-up lady, extreme hypothyroidism might be related with reduced moxie and disappointment of ovulation. Essential ovarian disappointment can likewise be found in patients with Hashimoto's thyroiditis as a piece of immune system polyglandular disorder. Once in a while, in essential hypothyroidism, auxiliary misery of pituitary capacity may prompt ovarian decay and amenorrhoea. Pregnancy complexities are related with clear and subclinical hypothyroidism, in spite of the fact that the effect has fluctuated among various examinations.[3]

In our study T4 level was significantly lower in PCOS group (0.69± 0.56 ng/ml) as compare to control (1.87± 0.86 ng/ml). T3 level was significantly higher in PCOS group (2.38± 1.09 ng/ml) as compare to control (2.11± 1.06 ng/ml). TSH level was significantly higher in PCOS group (8.12± 6.32 ng/ml) as compare to control (3.36± 1.06 ng/ml).

Similar results were reported by Sinha U et al (2013).[4]In our study mean serum TSH level was found to be significantly higher in PCOS group and in control group. Significant difference was found between two groups. Similar correlation between TSH and Anti-TPO antibody level was reported by Janssen OE et al (2004)[5]

Conclusion

High prevalence of thyroid disorders in PCOS patients thus points towards the importance of early correction of hypothyroidism in the management of infertility associated with PCOS.

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