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INTRODUCTION

Relationship between polycystic ovary syndrome (PCOS) and thyroid autoimmunity has been recently suggested by several authors. Autoimmune thyroiditis (AIT) is the most prevalent autoimmune disease and link between AIT and PCOS has been reported in adult women. There is a hypothesis that functional autoantibodies could contribute to the development of PCOS.

MAIN OBJECTIVE

The aim of the study was to evaluate the prevalence of thyroid autoimmunity in adolescent girls with PCOS.

MATERIAL AND METHODS

45 adolescent girls with diagnosis of PCOS (study group - SG)

- ✓ chronological age: **16.9±1.3y**,
- ✓ age of menarche: **12.2±1.4y**,
- ✓ BMI: **25.4±7.9kg/m²**

31 regularly menstruating girls (control group - CG)

- ✓ chronological age: **17.0±1.9y**,
- ✓ age of menarche: **11.8±1.9y**,
- ✓ BMI: **24.5±7.0kg/m²**

The study was approved by the Ethics Committee of Medical University of Silesia and informed consent was obtained from every subject or/and parent or guardian.

Medical history & Physical examination	menstrual pattern, BMI, hirsutism (in Ferriman-Gallwey scale) + Pelvis and Thyroid US
Metabolic profile	(fasting) Total cholesterol, triglycerides, HDL cholesterol, LDL cholesterol, glucose, insulin, HOMA
Hormonal profile	LH, FSH, testosterone, DHEAS, 17OH-progesterone, androstenedione, estradiol, TSH, free levothyroxine (fT ₄)
Immunological tests	Anti-thyroid peroxidase antibodies (anti-TPO Ab), thyroglobulin antibodies (anti-TG Ab)

CONCLUSION

The study does not confirm the relationship between PCOS and thyroid function in adolescent girls, however high prevalence of indices of thyroid autoimmunity in euthyroid patients with PCOS may suggest that further monitoring of their thyroid function is warranted.

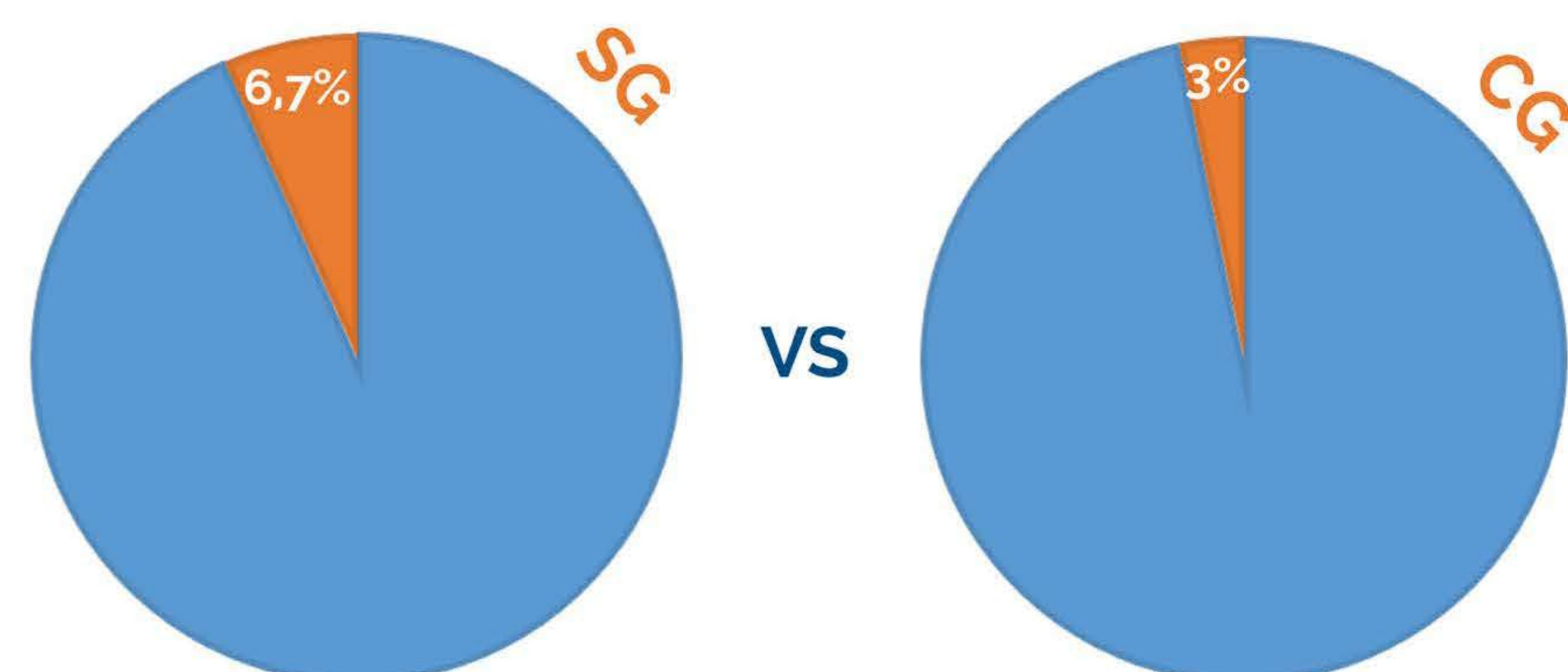
RESULTS



Elevated anti-TPO Ab, anti-Tg Ab, hypoechogenic US pattern of thyroid



Elevated anti-TPO Ab alone



Elevated anti-Tg Ab alone

Figure 1. Prevalence of thyroid autoimmunity in study and control group

No significant associations were found between antibodies, hormones level and volume and pattern of the ovaries.

	Study group n=45	Control group n=31	p
Age [year]	16.9 [16.17-17.50]	17.0 [15.42-17.33]	ns
BMI [kg/m ²]	25.4 [22.57-30.50]	24.5 [20.57-27.56]	ns
Total cholesterol [mg/dl]	174.9 ± 31.0	161.9 ± 30.3	ns
HDL-cholesterol [mg/dl]	54.5 ± 10.5	55.4 ± 10.0	ns
Triglycerides [mg/dl]	88.5 [77.00-119.50]	100.5 [79.00-126.00]	ns
LDL-cholesterol [mg/dl]	99.8 ± 2 5.5	87.6 ± 25.5	ns
Testosteron [ng/dl]	55.0 ± 18.4	40.3 ± 14.5	<0,01
DHEA-S [ug/dl]	296.2 ± 100.5	290.8 ± 88.2	ns
17-OH [ng/ml]	2.4 [1.94-2.88]	2.2 [1.78-2.60]	ns
Androstendion [ng/ml]	4.1 [2.97-5.37]	3.0 [2.02-4.03]	ns
HOMA	2.3 [1.02-4.29]	2.7 [1.82-3.77]	ns
fT ₄ [ng/dl]	1.3 [1.12-1.42]	1.2 [1.11-1.35]	ns
TSH [uIU/ml]	2.0 [1.38-3.09]	1.8 [1.38-2.45]	ns
Ovarian volume [ml]	4.3 [3.92-5.35]	5.2 [3.38-5.65]	ns
Age of menarche [year]	12.2 ± 1.3	11.9 ± 1.9	ns
Hirsutism [F-G scale]	4.0 [0-7.00]	1.5 [0-9.50]	ns

Table 1. Clinical, hormonal and metabolic characteristics of study and control group

