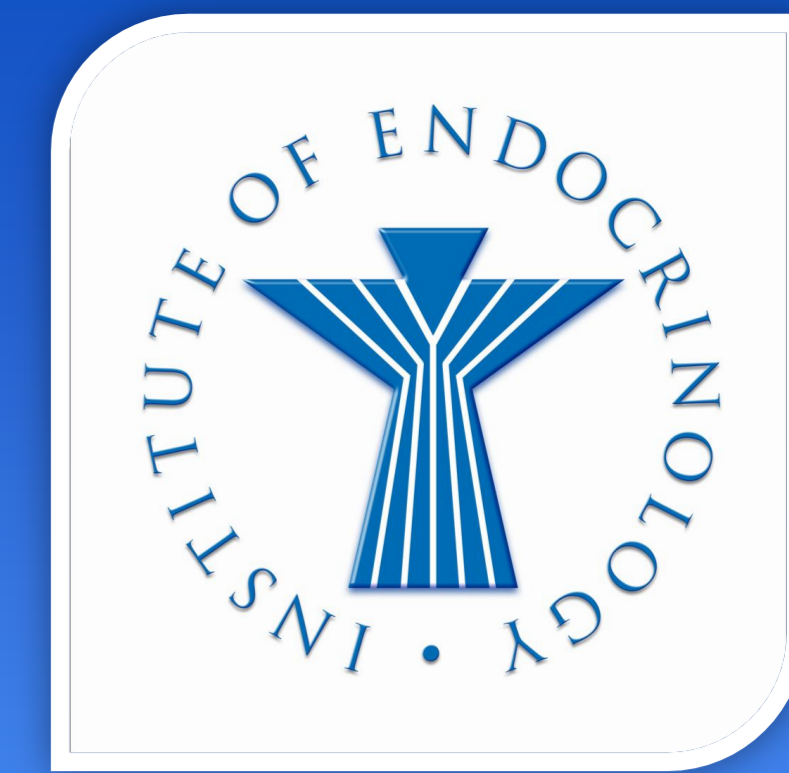




LITHUANIAN UNIVERSITY
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Polycystic ovary syndrome in overweight and obese adolescent girls and its association with insulin resistance and metabolic syndrome



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Background

The prevalence of polycystic ovary syndrome (PCOS) in adolescents is reported up to 38.9%.

Obesity is a known risk factor associated with PCOS increasing the risk of metabolic syndrome (MS).

Up to 25% of adolescents with PCOS may have derangements in glucose metabolism and insulin resistance (IR).

Aim

To evaluate PCOS prevalence in overweight / obese adolescent girls and to assess the association with body mass index (BMI), MS and IR.

Conclusions

Every 3rd overweight / obese adolescent girl has PCOS.

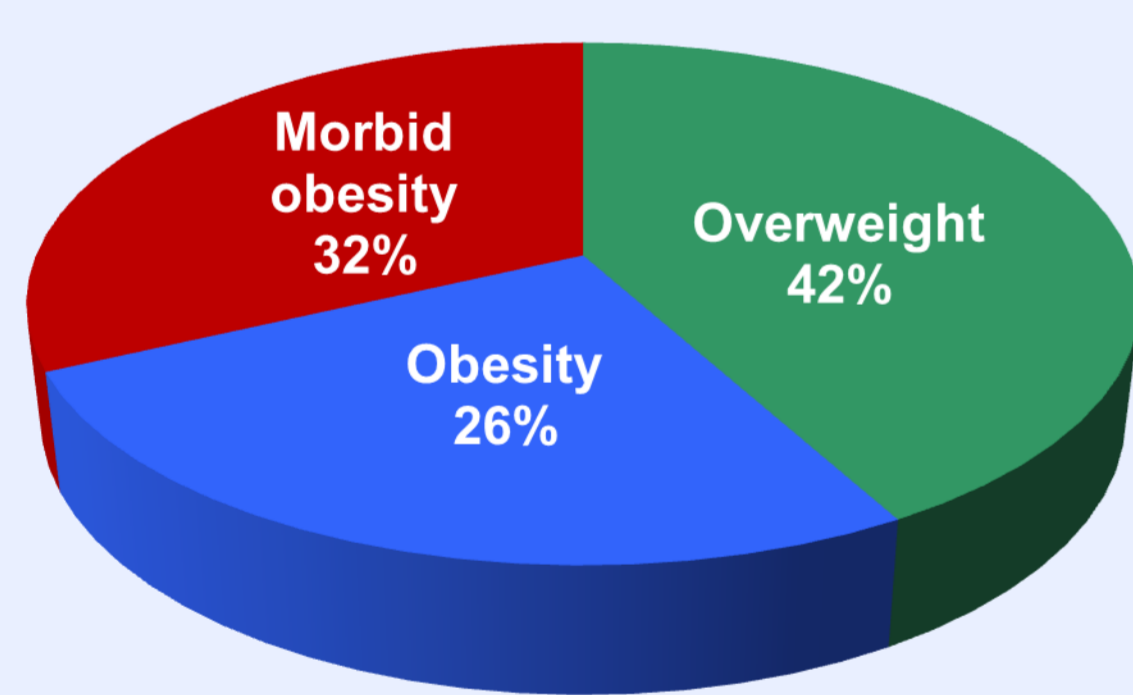
The prevalence of MS in overweight / obese girls is not increased in the presence of PCOS or polycystic ovary morphology.

The degree of IR is similar in overweight / obese adolescent girls with and without PCOS.

Objective

Study included 49 overweight (BMI >1.0 standard deviation score (SDS)) and obese (BMI >2.0 SDS) girls (mean age 15.75 ± 1.3 years) at least 2 years post menarche.

Mean BMI-SDS was 2.36 ± 0.9 (57.9% were obese). Distribution of studied girls by obesity level is presented in fig.1.



Overweight – BMI-SDS 1.0-2.0
Obesity – BMI-SDS 2.0-3.0
Morbid obesity – BMI-SDS >3.0

Figure 1. Obesity level of study cohort

BMI evaluated according to International Obesity Task Force (IOTF) criteria for children.

PCOS was diagnosed according to Rotterdam criteria.

MS was diagnosed according to IDF consensus for MS in children.

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Results

PCOS was identified in 36.7% of overweight / obese adolescent girls.

Girls with PCOS had lower BMI-SDS, waist circumference SDS and sum of skinfold thickness (fig.2).

24.0% of girls without PCOS had polycystic ovary morphology on ultrasound, normal menstrual cycle and normal androgen levels.

Polycystic ovaries by ultrasound were found in 83.3% of girls with PCOS.

MS was not more common in girls with PCOS (fig.3).

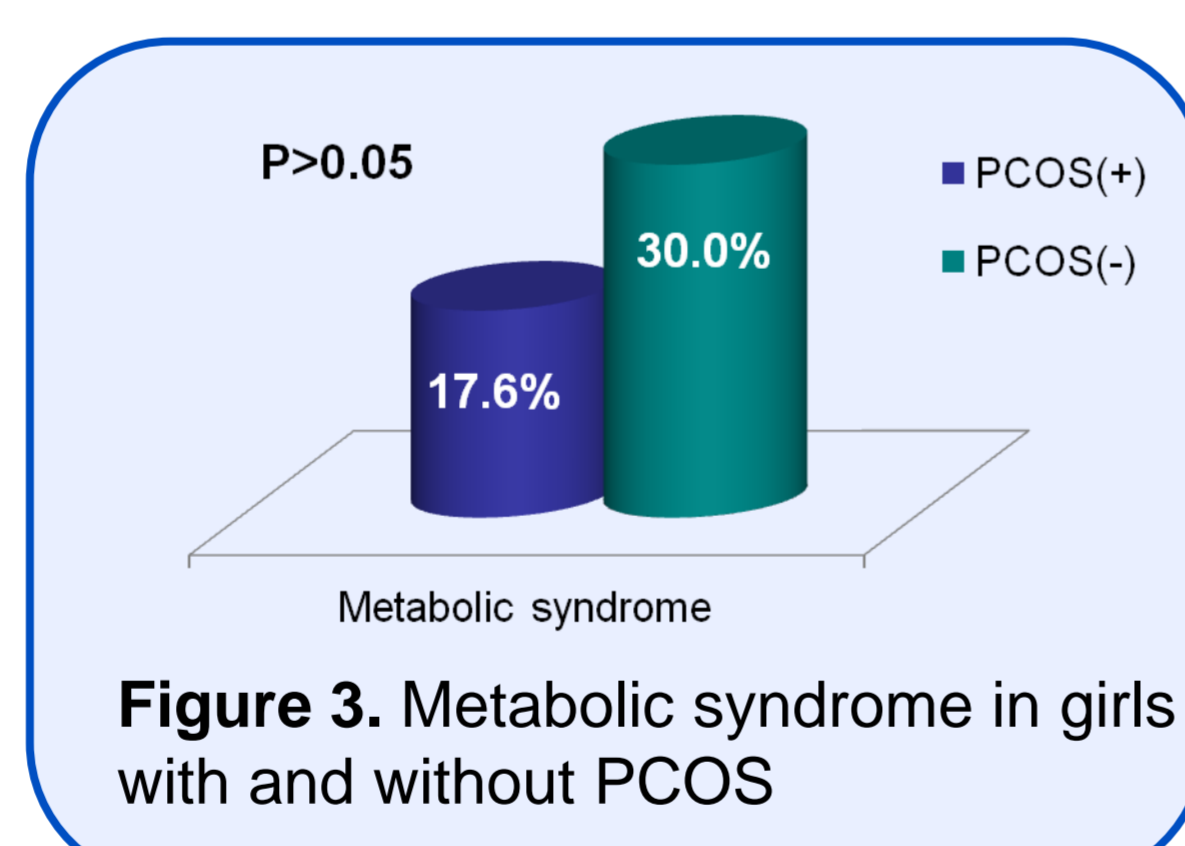


Figure 3. Metabolic syndrome in girls with and without PCOS

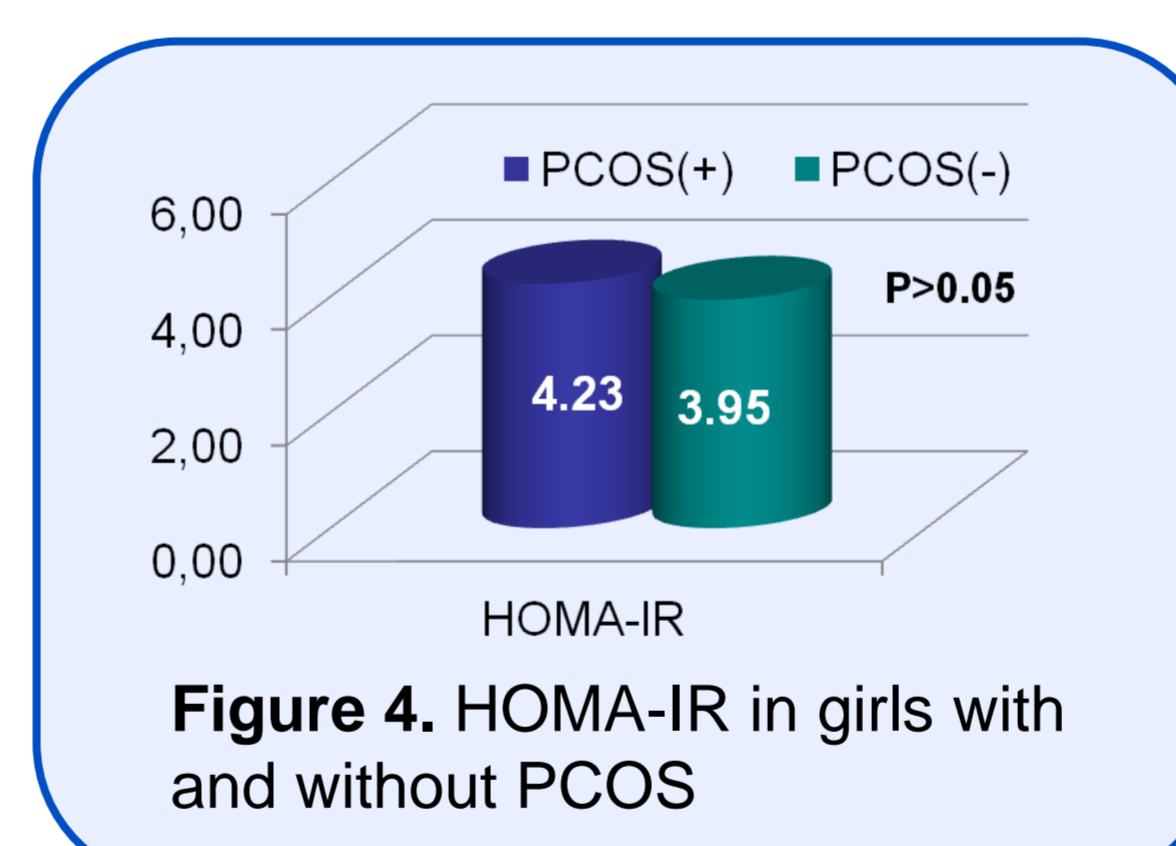


Figure 4. HOMA-IR in girls with and without PCOS

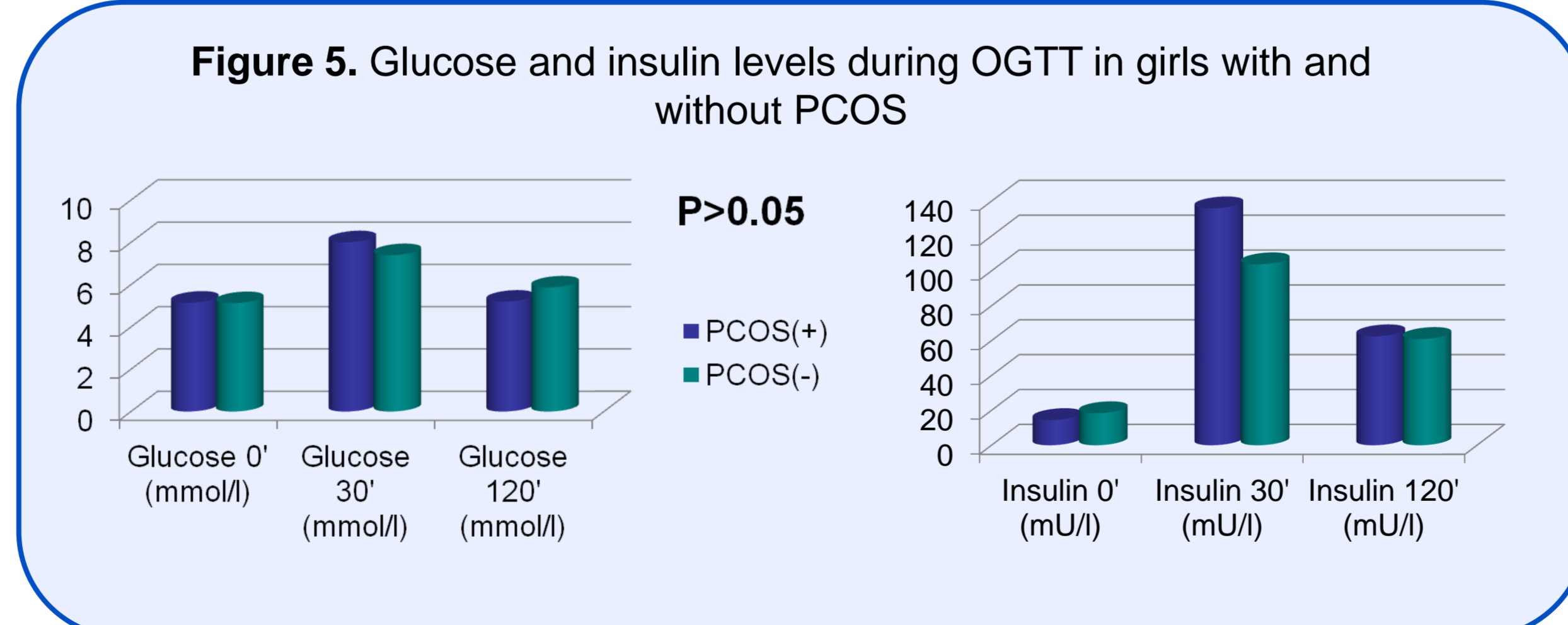


Figure 5. Glucose and insulin levels during OGTT in girls with and without PCOS

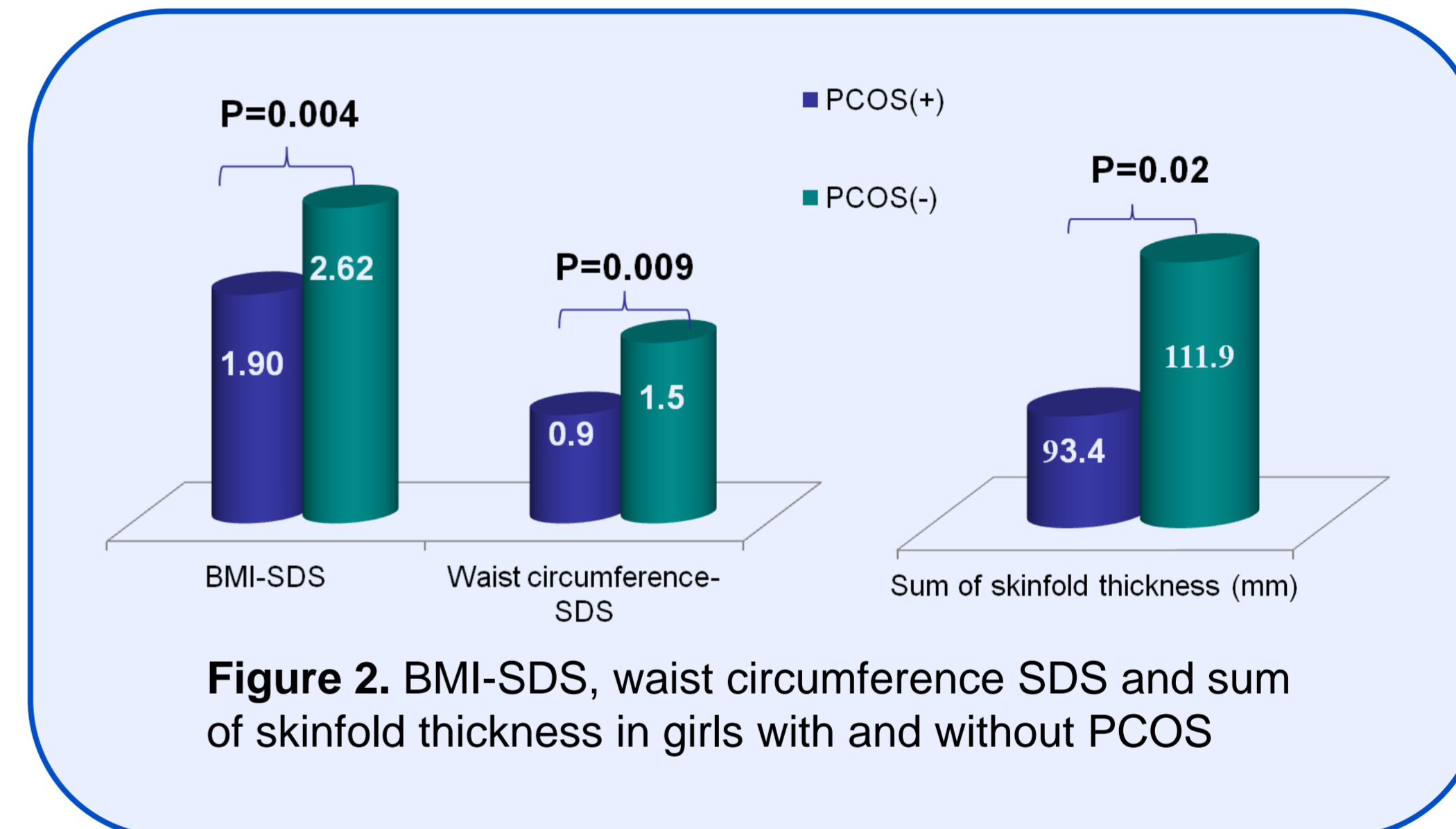


Figure 2. BMI-SDS, waist circumference SDS and sum of skinfold thickness in girls with and without PCOS

Insulin resistance HOMA-IR index (fig.4) and fasting glycaemia (fig. 5) did not differ in girls with and without PCOS (p=0.08).

High density lipoproteins were significantly higher in girls with PCOS (p=0.04).

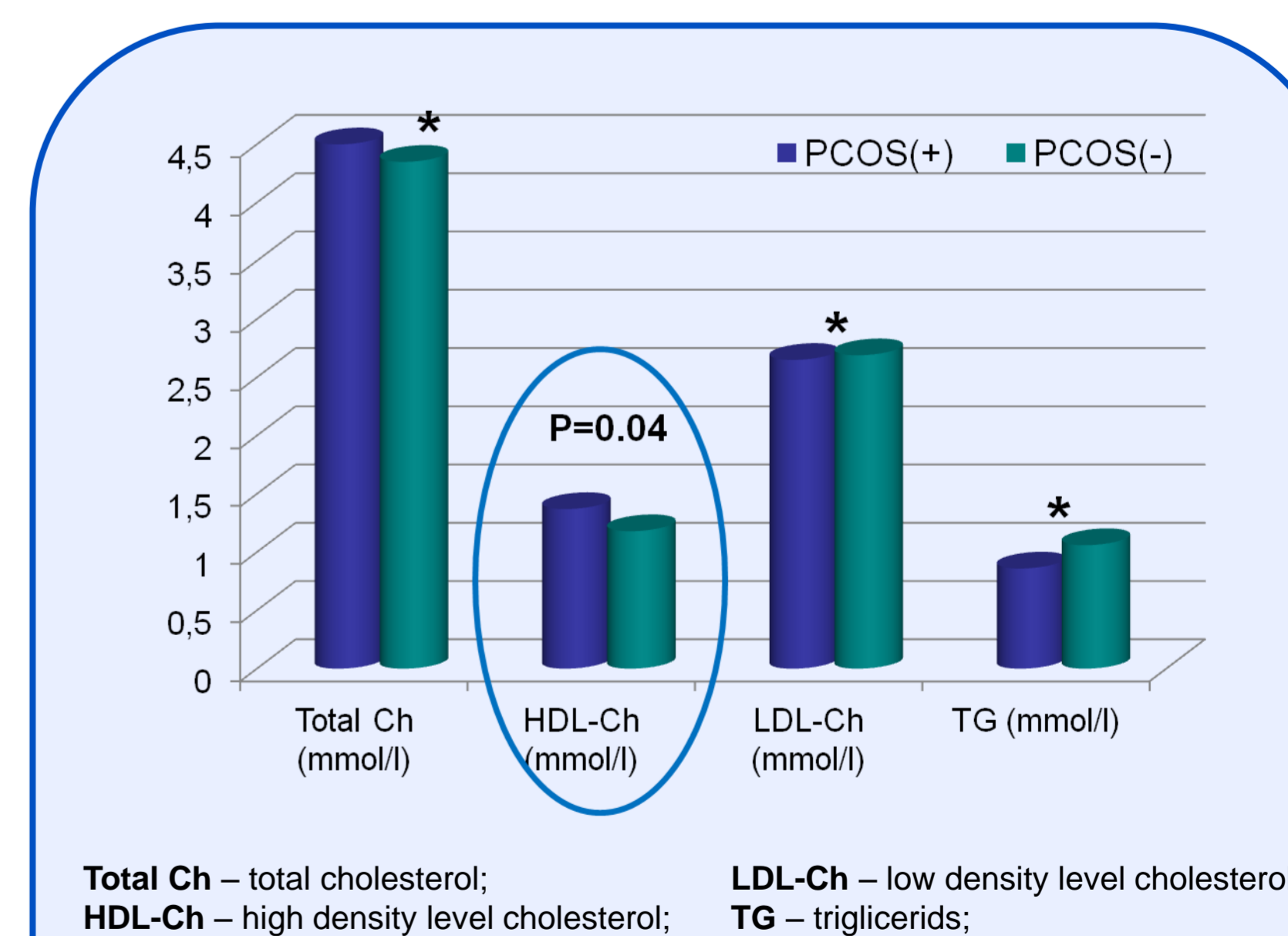


Figure 6. Lipid profile in girls with and without PCOS

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Acknowledgements

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