Skeleton muscles and tissues metabolic activity in Greek adolescent PCOS

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BACKGROUND

The skeleton, which is strongly controlled by endocrine factors, has recently been shown to play an active endocrine role itself, specifically influencing energy metabolism. However, its role in polycystic ovary syndrome (PCOS) phenotype is underinvestigated.

OBJECTIVES & HYPOTHESES

Herein, we sought to identify novel factors involved in the regulation of both bone mass and whole-body homeostasis relevant to the disease.

METHODS

In this pilot study, 10 PCOS (mean age 15.8 ± 3.2 years) and 14 non-PCOS adolescents (mean age 15.1 ± 1.9 years), age- and body mass index (BMI)- matched underwent a body composition analysis by bioelectrical impedance, using a BIA phase-sensitive system (single-frequency 50 kHz). All participants did not have metallic implants of any kind in their body. The measurements took place at the Biomedical Research Foundation of the Academy of Athens (Stress and Metabolism Laboratory of the Clinical, Translational and Experimental Surgery Research Centre). Analysis included non-parametric in SPSS 21.

BODY COMPOSITION	PCOS (n=10)	Non-PCOS (n=14)	p-value
BMI	26.18 (4.04)	26.90 (5.89)	p>0.05
BCM	10.62(3.38)	6.13(2.99)	p>0.05
ECM	14.8(4.15)	15.3(1.76)	p>0.05
Skeleton muscles	97.66(35.8)	135.3 (29.5)	p>0.05

RESULTS

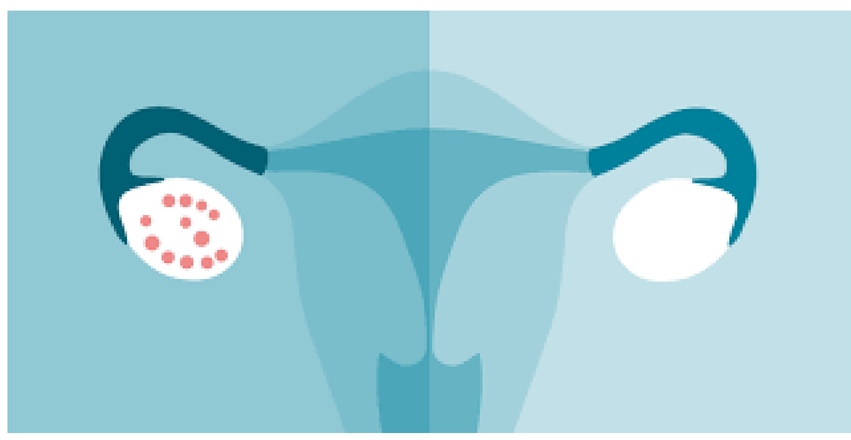
No differences in body cell mass (BCM) (p=0.716), extracellular mass (ECM) (p=0.128) or skeletal muscle (p=1.00) were observed.

CONCLUSIONS

Metabolically active (BCM) and inactive (ECM) tissues of the body, as well as skeleton muscles showed no differences between the two groups, perhaps due to the young age of participants. Future research should give a deeper insight to the subject by investigating more markers with the use of bioimpendance and/or biochemistry.

References

1. Geronikolou S, Bacopoulou F, Cokkinos D. Bioimpendance measurements in adolescents with PCOS: a pilot study. Adv Exp Med Biol. 2017;987:291-299.



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