Cardiotrophin-1 as a new metabolic biomarker in women with PCOS.

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Abstract:

Context: Cardiotrophin-1 (CT-1) is a key regulator of the energy metabolism and also plays a regulating role in fat and glucose metabolisms. Cardiotrophin-1 is not only a paracrin factor but also has endocrine functions and is linked with obesity, metabolic syndrome and insulin resistance. While evaluating polycystic ovary syndrome (PCOS) subjects, not only short term reproductive consequences but also long term cardiometabolic risks should be taken into consideration and at this point CT-1 may be beneficial for estimating the risk of long term adverse health consequences and establishing early intervention and preventation strategies.

Objective: To investigate cardiotrophin-1 levels as a new metabolic biomarker in women with PCOS.

Methods: One hundred consecutive women with PCOS were divided into two groups according to presence of metabolic syndrome as MetS+ and MetS-. Clinical, hormonal and metabolic parameters in addition to CT-1 levels were compared between the groups. Correlation analyses were performed between CT-1 and clinical and metabolic parameters in women with PCOS.

Patient(s): One hundred women with PCOS

Intervention(s): History and physical examination, peripheral venous blood sampling

Main Outcome Measure(s): Cardiotrophin-1 levels

 Results: One hundred PCOS subjects were enrolled in the study, of which 29 subjects were diagnosed with metabolic syndrome. There was no statistically significant difference between the groups in terms of age, BMI, low-density lipoprotein cholesterol, total testosterone and dehydroepiandrosterone sulfate levels. Waist/hip ratio, systolic and diastolic blood pressures, triglyceride (TG), total cholesterol, HOMA-IR, FAI, Ferriman–Gallwey score (FGS) and cardiotrophin-1 levels (8.45 ± 2.82 pg/ml vs 6.82 ± 1.79 pg/ml, $p=0.001$ respectively) were significantly higher in the MetS+ group compared with the MetS- group. HDL cholesterol was significantly higher in the MetS- group than the MetS+ one. Cardiotrophin-1 levels were found to be positively correlated with diastolic blood pressure ($r=0.293$, $p<0.01$), TG levels ($r=0.224$, $p<0.05$) and FGS ($r=0.250$, $p<0.05$).

Conclusions: CT-1 may be a promising new metabolic biomarker in women with PCOS. CT-1 may be beneficial for estimating the risk of long term adverse health consequences and establishing early intervention and preventation strategies.

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