P-171

Association of Serum Betatrophin with Fibroblast Growth Factor-21 in Women with Polycystic Ovary Syndrome

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Abstract

Betatrophin and fibroblast growth factor-21 (FGF-21), as recently discovered members of hepatokine/adipokine family, have been proposed to be associated with some metabolic disorders in which insulin resistance plays a major role. We aimed to investigate serum betatrophin and FGF-21 concentrations in women with polycystic ovary syndrome (PCOS).

In this cross-sectional study, we recruited 34 women with PCOS and 31 women as healthy controls. Serum betatrophin level and its relationship with serum FGF-21 level as well as other metabolic parameters were examined.

Serum betatrophin level was significantly higher in women with PCOS than the control group (1.10 (0.20-4.20) vs 0.70 (0.20-3.50) ng/ml, p=0.004), whereas, FGF-21 did not differ between the groups (74.80 (7.80-435.90) vs 119.30 (10.50-443.40) pg/ml, p=0.13). Serum betatrophin correlated positively with LH levels (r=0.26, p=0.03). After controlling BMI, there was a significant positive correlation between betatrophin and FGF-21 (r=0.25, p=0.04). Multivariate regression analysis revealed that FGF-21 and presence of PCOS were the significant predictors of betatrophin concentrations (R^2=0.22, F=2.56, p=0.03).

Our results indicate that betatrophin levels are increased and associated with LH and FGF-21 levels, not insulin resistance, in women with PCOS.

Keywords: Betatrophin, body mass index, fibroblast growth factor-21, luteinizing hormone, polycystic ovary syndrome

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