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TITLE

Plasma concentrations of tumor necrosis factor α (TNFα) and retinol binding protein 4 (RBP4) as markers of cardiovascular risk in women with polycystic ovary syndrome (PCOS)

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ABSTRACT

CONTEXT: Obesity and dysfunction of the adipose tissue are key players in the pathogenesis of PCOS. Both TNFα and RBP4 belong to adipokines – cell signaling proteins, secreted by adipose tissue. OBJECTIVE: To determine the relationship between TNFα, RBP4 plasma concentrations and the lipid profile in PCOS. METHODS: A cross-sectional study. PCOS was diagnosed according to Rotterdam criteria. Nutritional status was assessed using WHO guidelines. PATIENTS: The study group consisted of 85 women with PCOS (48 obese). The control group consisted of 72 women without PCOS (41 obese). INTERVENTIONS: Serum levels of TNFα, RBP4 and lipid profile, after 12 hours of fasting, were analyzed. Anthropometric measurements were taken. MAIN OUTCOME MEASURES: Serum levels of: TNFα, RBP4, total cholesterol, LDL cholesterol, HDL cholesterol and triglycerides. RESULTS: Concentrations of the LDL and triglycerides was significantly higher in obese patients (with and without PCOS). The concentration of the HDL was significantly lower in the PCOS group. There were no significant differences in TNFα and RBP4 levels between the study and control group.In the PCOS group, TNFα concentration correlated positively with the level of LDL (R=0,25; p<0,05) and triglycerides (R=0,22; p<0,05), but negatively with HDL (R=-0,25; p<0,05). While, in the control group TNFα correlated only with triglycerides (R=0,3; p<0,05). Considering the relationship between RBP4 and lipid profile, only in non-obese PCOS patients correlations occurred. Namely, negative correlation between RBP4 and HDL (R=-0,38; p<0,05), but positive with LDL (R=0,44; p<0,01). In contrast, in the control group positive correlations with total cholesterol, LDL and triglycerides were evidenced. CONSLUCIONS: TNFα and RBP4 may serve as markers of cardiovascular risk in women with PCOS. RBP4 may be a useful marker in non-obese PCOS patients.

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