

P55. Serum levels of TNF- α and IL-6 in women with polycystic ovary syndrome

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Context: Visceral adipose tissue (AT) is considered to be a major source of low-grade inflammatory factors in insulin resistance (IR). Macrophages from AT are responsible for the secretion of almost all of the total amount of tumor necrosis factor alpha (TNF- α) and a significant proportion of interleukin-6 (IL-6).

Objective: To perform an intergroup comparison of TNF- α and IL-6 between overweight/obese women with polycystic ovary syndrome (PCOS) and body mass index (BMI)-matched clinically healthy women without metabolic disorders (metabolically healthy obese, MHO).

Patients and Methods: The study included 34 overweight/obese women with established PCOS and 20 metabolically healthy obese women (MHO). The following measurements and laboratory tests were conducted: weight, height, waist and hip circumferences, levels of glucose (GLU) and insulin (IRI) measured 0, 60 and 120 minutes after oral 75 g glucose administration, serum levels of total cholesterol (TC), HDL-cholesterol, triglycerides (TG), TNF- α and IL-6, values of systolic (SBP) and diastolic blood pressure (DBP). Body mass index (BMI) = weight(kg)/height(m)², waist-to-hip ratio (WHR) and homeostasis model assessment insulin resistance index (HOMA-IR) = (GLU 0' (mmol/l) x IRI 0' (μ IU/ml)/22,5) were calculated.

Results: Comparable values of the investigated anthropometric parameters were established in the two groups of women. The mean values of age were significantly lower in the women with PCOS. No significant differences in the levels of GLU 0', 60' and 120', lipid parameters and values of SPB and DBP were found. The values of IRI 0', 60', 120' and HOMA-IR were significantly higher in the women with PCOS. The evaluation of the specific hormonal parameters showed comparable levels of IL-6 but significantly higher serum TNF- α concentrations in the PCOS group compared to those in the MHO group. No correlations between the specific hormonal parameters and the other investigated parameters were determined in the PCOS group.

Conclusion: In our study the higher levels of TNF- α in the significantly younger overweight/obese women with polycystic ovary syndrome (PCOS) compared to those in the BMI- and other anthropometric parameters-matched healthy women without metabolic disorders suggest a specific role of this adipocytokine as a biomarker of PCOS. The weight of our studied women is most likely the main predictor of the measured circulating levels of IL-6.