Are serum chemerin levels different between obese and non-obese women with polycystic ovary syndrome?

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Objective: To measure serum chemerin levels in women with polycystic ovary syndrome (PCOS) and assess their relationship with clinical, metabolic, and hormonal parameters.

Methods: Clinical study.

Patient(s): 118 PCOS women (obese, n = 60; non-obese, n = 58) and 33 healthy women (obese n=15, non-obese 18, control group).

Intervention(s): Observational study.

Main Outcome Measure(s): Blood pressure, body mass index (BMI), waist to hip ratio (WHR), fasting insulin (FIN), fasting plasma glucose (FPG) and blood serum sex hormone and blood lipid were measured. Serum chemerin, leptin and adiponectin were measured by ELISA.

Result(s): Serum chemerin was significantly higher in obese PCOS group compared with non-obese PCOS and the obese and non-obese control groups. (47.62 ± 11.27 ng/mL versus 37.10 ± 9.55 ng/mL, 31.32±8.74ng/mL and 27.13±8.93ng/mL, p<0.05). Serum chemerin was positively related to BMI, waist circumference, WHR, systolic blood pressure, testosterone (T), FPG, FIN, homeostasis model assessment of insulin resistance (HOMA-IR), total cholesterol (TC), triglyceride (TG), low-density lipoprotein (LDL-C), low-density lipoprotein/high-density lipoprotein, total cholesterol/high-density lipoprotein and serum leptin, while negatively related to the level of fasting plasma glucose/fasting insulin, high-density lipoprotein (HDL-C), adiponectin levels. Multiple linear regression analyses revealed HOMA-IR, leptin and TC were the significant influencing factors of chemerin (p<0.05).

Conclusions: Serum chemerin level was increased in PCOS woman with or without obesity. This suggested that chemerin may be involved in the development of the pathogenesis of PCOS.