Serum galanin-like peptide (GALP) levels in patients with polycystic ovary syndrome and its relationship to hormonal and metabolic parameters

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Background: PCOS is a highly prevalent heterogeneous disease characterized by ovulatory dysfunction, hyperandrogenism and metabolic alterations. Women with PCOS commonly display dysregulated gonadotropin secretion with higher LH pulsatility and perturbed LH-FSH ratios. GALP is a hypothalamic neuropeptide that has been implicated in the control of feeding, metabolism and reproduction.

Aim: The aim of the study was to evaluate the serum level of GALP in patients with PCOS and its relationship to hormonal and metabolic parameters.

Patients and methods: The study included 42 women with PCOS according to the recent ESHRE-ASRM criteria. Serum levels of LH, FSH, Estradiol, Testosterone, SHBG, fasting glucose and insulin were measured at follicular phase of the menstrual cycle. Serum GALP levels were determined by the quantitative sandwich enzyme immunoassay (ELISA) technique. Free androgen index (FAI), homeostasis model assessment of insulin resistance (HOMA-IR) and body mass index (BMI) were calculated.

Statistical analyses were performed using SPSS Ver. 16.0. The data are presented as mean±SE or as frequency with percentages. A P-value less than 0.05 was considered statistically significant.

Results: The patients were at average age 25.17±0.77. Serum GALP levels were 2.36±0.48 ng/ml, LH - 8.39±0.95 IU/l, FSH - 6.57±0.25 IU/l, Estradiol - 264.57±17.7 pmol/l, Testosterone - 0.72±0.04 ng/ml, SHBG - 37.25±4.07 nmol/l, FAI - 11.62±1.81, BMI - 25.89±0.90 kg/m2. There was a significant positive correlation between GALP and FAI (R = 0.355; P = 0.034). We did not find any significant correlation between GALP and LH (R=-0.48, P = 0.76), FSH (R= 0.24, P = 0.12) or BMI (R= 0.13, P = 0.38).

Conclusion: Our study suggests that GALP may participate in the pathophysiological process in PCOS presumably by stimulating ovary androgen production.

Key words: PCOS, GALP, FAI.