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Association of serum procalcitonin as an inflammatory biomarker with obesity in women with polycystic ovary syndrome

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Background: Procalcitonin (PCT) is a potential biomarker of obesity related low-grade inflammation in polycystic ovary syndrome (PCOS). It was aimed to investigate whether serum procalcitonin, high-sensitivity C-reactive protein (hs-CRP), white blood cell (WBC) and neutrophil counts are associated with polycystic ovary syndrome and with obesity.

Methods: A case-control study included 107 women with PCOS and 93 healthy controls, they were then stratified according to their body mass index (BMI) into three subgroups; lean, overweight and obese. Serum PCT levels were measured using enzyme linked immunosorbent assay.

Results: PCOS patientshad significantly higher levels of serum PCT, hs-CRP, WBC, and neutrophil counts than healthy women. In control and PCOS groups, serum PCT, hs-CRP levels, WBC, and neutrophil counts were significantly increased in overweight and obese women compared with lean subjects. Serum PCT levelswere positively correlated with BMI, waist/ hip ratio, total cholesterol, serum triglycerides, LH/FSH, hs-CRP values, WBCand neutrophil counts in PCOS women. It was also observed that the increasing obesity was accompanied by a significant increase in the mean values of serum PCT and neutrophil counts in PCOS patients.

Conclusion: Serum PCT is a novel biomarker for low-grade chronic inflammation in PCOS patients, especially in obese women. Thus, PCT is a promising useful marker for accurate diagnosis of the inflammatory activity of body fat and of PCOS.

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