# Evaluation of serum osteoprotegerin and soluble receptor activator of nuclear factor κB ligand in obese and non-obese patients with polycystic ovary syndrome

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## *Introduction*

Polycystic ovary syndrome (PCOS) is a common endocrinopathy associated with increased cardiovascular risk in reproductive aged women. Circulating osteoprotegerin (OPG) and soluble receptor activator of nuclear factor κB ligand (sRANKL) are associated with subclinical atherosclerosis. Our aim is to evalutate serum OPG and sRANKL levels and their relations with cardiovascular and metabolic markers in paients with obese and non-obese PCOS.

## *Methods*

Overall 25 patients with PCOS (14 obese, 11 non-obese, group 1 and group 2, respectively) and 27 age matched controls (group 3) recruited to the study. Metabolic and hormonal profiles, carotid artery intima-media thickness (CIMT), serum OPG and sRANKL levels were assessed.

## *Results*

Mean OPG and sRANKL levels were similar between three groups ($p>0.05$). Serum HDL levels were similar in group 1 and 2, but significantly different in group 2 and 3, group 1 and 3 ($p=0.4$, $p=0.04$, $p=0.001$ respectively). Serum total testosteron levels were similar in group 1 and 2, group 1 and 3 but significantly different in group 2 and 3 ($p=0.11$, $p=0.31$, $p=0.02$ respectively). Homeostasis model assesment-insulin resistance was similar in group 2 and 3,whereas different in group 1 and 3, group 1 and 2 ($p= 0.7$, $p=0.001$, $p=0.001$ respectively). hsCRP levels were significantly higher in group 1 than in group 2 ($p=0.04$).However, CIMT measurements were similar in three groups. Furthermore, no significant correlation between OPG, sRANKL and cardiovascular and metabolic parameters.

## *Conclusions*

PCOS is associated with increased cardiovascular risk particularly in obese patients. Based on the results of this study, OPG and sRANKL had not taken a critical role on the development of preclinical atherosclerosis in PCOS. Further prospective studies are needed in large number of patients on this issue.