

Vitamin D deficiency in polycystic ovary syndrome

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Context. Polycystic Ovary Syndrome (PCOS) is the most common endocrine-metabolic disease, affecting about 10% of reproductive-age women. The pathogenesis is multifactorial and polygenic, determining different phenotypes of the syndrome. PCOS is also associated to several metabolic disorders, especially insulin resistance, obesity and diabetes, and to an increased cardiovascular risk.

Recent

studies have shown that PCOS women often show vitamin D deficiency and that 25(OH)D levels are inversely related to BMI and insulin resistance. The mechanisms underlying the association between low 25(OH)D levels and PCOS are not fully understood.

Objective. Purpose of the study was to investigate serum vitamin D levels and their relation to some metabolic parameters in PCOS patients.

Protocol and methods. Fiftytwo PCOS patients according to Rotterdam Criteria were enrolled and compared with 20 female healthy subjects, matched for age and BMI. None of the patients had metabolic syndrome or diabetes or were taking hormones or other medications interfering with the interpretation of our results. Vitamin D was measured in all women from November to March and correlated with BMI, HOMA and fasting and OGTT stimulated insulin and glucose levels.

Results. Vitamin D levels were significantly lower in PCOS compared with controls. 25(OH)D levels were significantly negatively correlated with BMI. Insulin levels were increased during OGTT in PCOS, mainly in overweight patients. Considering only data from patients with BMI <25, HOMA-IR was positively correlated with OGTT stimulated insulin levels in PCOS patients. Vitamin D resulted lower in PCOS than in controls and was significantly inversely related to HOMA-IR.

Conclusions. PCOS patients show low levels of Vitamin D regardless of obesity. The negative correlation between HOMA-IR and Vitamin D suggests a possible involvement of 25(OH)D in the pathogenesis of insulin resistance even in PCOS. Further study are needed to better evaluate this relation and a possible therapeutical role of Vitamin D to improve insulin resistance in PCOS.

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