SUBCLINICAL HYPOTHYROIDISM in PATIENTS with POLYCYSTIC OVARY SYNDROME

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Objective: Polycystic ovary syndrome (PCOS) is a common endocrine metabolic disorder that affects 5-10 % of women of reproductive age. In various studies, it was found to be associated with subclinical hypothyroidism. Serum thyrotrophin (TSH) levels were also reported to be increased in obese individuals. In order to define the impact of obesity on the subclinical hypothyroidism observed in patients with PCOS, we aimed to investigate subclinical hypothyroidism both in normal weight and overweight or obese PCOS patients.

Methods: The study included 95 normal weight (Group-1) and 122 overweight or obese women (Group-2) with a diagnosis of PCOS defined in accordance with the Rotterdam criteria. The control group consisted of age and BMI matched healthy individuals and grouped as normal weight (n: 66, Group-3) and overweight or obese (n: 65, Group-4) controls. Women with chronic disease such as overt hypo- or hyperthyroidism, kidney or liver failure, hyperprolactinemia, late-onset adrenal hyperplasia, and diabetes were excluded from the study. Anthropometric data (BMI and waist circumference) was recorded and hirsutism in accordance with Ferriman-Gallway index was evaluated. Plasma glucose and lipid profile, TSH, free T3, free T4, anti-thyroperoxidase antibody, anti-thyroglobulin antibody and insulin levels were measured in all study subjects. FSH, LH, total testosterone, estradiol, progesterone and DHEA-S levels were measured in patients with PCOS.

Results: BMI and waist circumference was significantly different between four groups (pBMI:0,001, pwaist circumference: 0,001) and in the evaluation of hirsutism, ferriman-gallway index was higher in both PCOS groups with respect to controls (p:0,001). While mean fasting glucose was similar, insulin and HOMA-IR values were significantly higher in overweight or obese PCOS and control patients (pinsulin: 0,001, Phoma: 0,001). LDL-cholesterol was significantly lower in group-3 (p: 0,017), but it was similar in the other 3 groups. HDL-cholesterol was lower in group-2 and group-4, with respect to group-1 and group-3 (p: 0,001). Triglyceride level was significantly higher in group-2, with respect to the rest of the groups. All the groups were similar with respect to serum FSH, Estradiol, prolactine, DHEAS levels. While total testosterone and LH levels were higher in both PCOS groups, than in control groups (ptestosterone: 0,009, pLH: 0,002), progesterone levels were lower in both PCOS groups (pprogesterone:0,041). There were no significant differences between all groups with respect to glucose, free T3, free T4, anti-thyroperoxidase antibody and anti-thyroglobulin antibody levels. The prevalence of subclinical hypothyroidism was greater in both overweight or obese groups (Group-2 and 4) than normal weight groups (Group-1 and 3) (p: 0,044). TSH was only correlated with BMI (r: 0,122, p: 0,02).

Conclusion: The increased prevalence of subclinical hypothyroidism in women with PCOS might be the result of increased BMI. However; prospective, controlled trials with long term follow-up concerning the effect of weight loss on SCH in PCOS women and non-PCOS women are needed to clarify the impact of BMI on TSH.

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