

Comparison of serum leptin and thyroid hormones levels in obese and non-obese women

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Abstract

Background and Objective: Many factors are known to be involved in a number of human pathologies of obesity including serum leptin and thyroid hormones levels. The purpose of this study was to compare the serum levels of leptin and thyroid hormones in obese and non-obese women, in Shiraz-Iran during 2006.

Materials and Methods: In this case- control study, 35 women with BMI \geq 30 Kg/m² recruited as an obese group (Case group) and 35 women with healthy BMI (BMI $<$ 25 Kg/m²) were selected as a control group. General information data were gathered from each sample using questionnaires and face-to-face interviews. Body weight, height, waist and hip circumferences were measured and BMI, WHR and percent of body fat (%TBF) were calculated for each subject. Venous blood samples were drawn from subjects and serum was separated to determine the concentrations of serum leptin and thyroid hormones (T4, T3 and TSH) levels.

Results: Mean serum concentration of leptin was significantly higher in obese group than control group (p $<$ 0.001). Serum leptin levels positively correlated to anthropometric indices (BMI, WHR, %TBF). No significant difference was observed between obese and non-obese groups in serum thyroid hormones concentration. Serum leptin levels positively related to serum T3 levels (P $<$ 0.05).

Conclusion: This study indicated that obese women had higher leptin levels compared to non-obese. The interaction between thyroid hormone in particular T3 and leptin can be one of the reason for increasing the serum leptin level among obese women.

Keywords: Obesity, Leptin, Thyroid hormones, Women

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