

Abstract

The objective of this study was to define if there is a mutual influence between the daily dose of levothyroxine, positivity/negativity of thyroid antibody, BMI, waistline, hip measurement and other anthropometric parameters. It was also to analyze if the daily dose of levothyroxine is being influenced by degree of hypothyroidism importance.

Methodology: There were 44 patients examined having hypothyroidism and who have been cured with levothyroxine so that their thyroid function has been normal at the time. I have examined those patients' body height, weight, BMI, waistline and hipline. Under the supervision of the medicine doctor I used records available for each of patients regarding concentration of TSH, TPOAb and TgAb, which were defined with patients' blood by a method of immunoassay.

Results: The average daily dose of levothyroxine in all patients sample has showed a positive correlation with BMI (Spearman rho coef. 0,429, P value=0,004) and with waistline of women (Spearman rho coef. 0,332, P value=0,028).

The concentration of thyroidantibody did not show a statistical relevance regarding the dependence with the dose of levothyroxine, BMI or other anthropometric parameters. The highest average daily dose of levothyroxine was confirmed for examined patients after total thyroidectomy (median of daily dose between 114 and 160,5 ug, average 135,4 ug), lower for patient sample with manifestation of hypothyroidism (median of daily dose between 87,5 and 100 ug, average 100 ug) and lowest for examined patients with subclinical hypothyroidism (median of daily dose between 81,5 and 100 ug, average 87,5 ug). The average daily doses did not differ significantly between examined men and women. For female patients there are negative correlations between the quality of remaining functional thyroid tissue in function of waistline (statistical probability of 98,04 %) and in function of BMI (statistical probability of 95,06 %).

Conclusion : The average daily dose of levothyroxine is in positive correlation with BMI and waistline at examined women. Waistline and BMI of female patients is in negative correlation with remaining functional thyroid tissue which implies another potential driver of obesity at patients with thyroid disease than the lack of thyroid hormones.

Key words: Thyroid disease, hypothyroidism, levothyroxine, obesity, body mass index