

**THE BENEFICIAL EFFECT OF L-THYROXINE ON CARDIOVASCULAR RISK FACTORS IN PATIENTS WITH SUBCLINICAL HYPOTHYROIDISM CAUSED BY AUTOIMMUNE THYROIDITIS**

Neves C.<sup>1</sup>, Alves M.<sup>1</sup>, Pereira M.<sup>1</sup>, Ramalho R.<sup>2</sup>, Ramos J.P.<sup>2</sup>, Guimaraes C.<sup>2</sup>, Carvalho E.<sup>1</sup>, Carvalho D.<sup>1</sup>, Delgado J.L.<sup>2</sup>, Medina J.L.<sup>1</sup>

<sup>1</sup>Endocrinology Service, S. Joao Hospital, Faculty of Medicine, University of Porto, Portugal, <sup>2</sup>Immunology Service, S. Joao Hospital, Faculty of Medicine, University of Porto, Portugal

**Background:** Subclinical hypothyroidism (SCH) is defined as raised serum TSH levels with circulating thyroid hormones within the reference range. It is uncertain whether treatment of SCH with L-thyroxine improves cardiovascular (CV) risk factors.

**Objective:** To evaluate the therapeutic effect of L-thyroxine in lipid profile, CRP (C-reactive protein) and homocysteine levels in SCH caused by autoimmune thyroiditis (AIT).

**Patients and methods:** We recorded total cholesterol (TC), HDL and LDL-cholesterol, triglycerides (TG), apolipoprotein B (ApoB), ApoA1, lipoprotein (a) (Lp[a]), homocysteine, CRP, folic acid and vitamin B12 levels, before and 6 months after starting treatment with L-thyroxine in 120 patients (mean age  $45.7 \pm 12.2$  yr, 80 females, mean BMI  $28.35 \pm 0.8$  Kg/m<sup>2</sup>) with SCH (mean TSH  $6.429 \pm 0.534$  mIU/liter) not previously treated for thyroid or vascular disease. Statistical analysis was performed with Students t-test.

**Results:** are expressed as means  $\pm$  SD. A two-tailed p value  $< 0.05$  was considered significant. Results -There were no significant differences between folic acid, vitamin B12, homocysteine, CRP, and TG levels before and after L-thyroxine treatment. TC and LDL levels significantly decreased ( $199.29 \pm 20.39$  mg/dl vs  $152.25 \pm 19.12$  mg/dl,  $p < 0.01$ ;  $116.12 \pm 34.23$  mg/dl vs  $91.22 \pm 16.25$  mg/dl,  $p < 0.01$ , respectively). Apo B levels also significantly decreased with L-thyroxine treatment ( $128.32 \pm 44.11$  mg/dl vs  $97.84 \pm 29.31$  mg/dl,  $p < 0.01$ ). Lp(a) levels were significantly lower after L-thyroxine treatment ( $31.96$  mg/dl  $\pm 19.11$  mg/dl vs  $21.42 \pm 18.12$  mg/dl,  $p < 0.01$ ). HDL and Apo A1 levels increased significantly after L-thyroxine treatment ( $45.18 \pm 15.29$  mg/dl vs  $58.47 \pm 18.10$  mg/dl,  $p < 0.01$ ;  $124.48 \pm 43.26$  mg/dl vs  $136.52 \pm 56.39$  mg/dl,  $p < 0.01$ , respectively).

**Conclusions:** Autoimmune SCH treated with L-thyroxine leads to significant improvement in CV risk factors.