

"Hypertensive patients with mild hypothyroidism show less frequent spontaneous normalization of thyroid function than normotensive patients"

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Introduction: Overt hypothyroidism is associated with diastolic hypertension, but in subclinical hypothyroidism, data are inconclusive. HS tiroxina is a double-blind trial evaluating the effect of levothyroxine on blood pressure in patients with mild SH (TSH 5.0-9.9 mU/L, normal free T4) and moderate-to-high cardiovascular risk.

Methods: We analyzed baseline data of the first 46 patients screened. Confirmatory thyroid function tests were repeated 2-4 weeks after initial diagnosis. Only patients with persistent SH were randomized. Measurements included 24h-blood pressure monitoring, TPO antibodies, lipids and urinary sodium excretion. Patients were not taking drugs known to interfere with thyroid function tests. Factors associated with spontaneous TSH normalisation were assessed.

Results: Most patients were female (76.1%), their mean age was 59.83 (SD 7,18) years, BMI: 31,09 (5.39) kg/m<sup>2</sup>, 67.4% had diabetes, 8.69% prediabetes (HbA1c>5.7%) 69,6% had dyslipidaemia, 8.7% smoked and 69.6% were hypertensive. In the confirmatory measurement, 19.6 % showed normal thyroid function. This happened more frequently in normotensive patients (66.7 vs 21.6%, p=0.015). TSH was 6.6 (1.35) and 3.59 (0.7) mU/L in persistent SH and euthyroid subjects, respectively. No differences in anti-TPO antibody positivity, age, gender, urinary sodium excretion, prevalence of known dyslipidaemia or number of CVRF were found between patients who normalised TSH and those with persistent SH. However, differences were found in BMI (SH: 32.1(4.48) vs 26.17(7.0) Kg/m<sup>2</sup>, p= 0.015) and in LDL (SH: 105.9 (37.25) vs euthyroid 141.26 (38.95) mg/dL, p=0.015) and total cholesterol (186.6 (41.7) vs 224.2 (41.2) mg/dL, p=0.019). In SH, TSH was positively correlated with mean nocturnal blood pressure (R=0.49, p=0.017) and tended to be correlated with diurnal blood pressure (p=0.087), too.

Conclusions: In our population, spontaneous normalisation of TSH in SH is less frequent than previously reported. Hypertensive patients have a higher risk of persistent SH and TSH is correlated with blood pressure.