

Is thyroid function related to masked hypertension?

İhsan Ateş¹, Mustafa ALTAY¹, Mustafa KAPLAN¹, Nihal ÖZKAYAR², Mehmet Erdem ALAGÜNEY¹, Fatih DEDE², Adem ÖZKARA³

¹Ankara Numune Education and Research Hospital, Department of Internal Medicine, Ankara, Turkey

²Ankara Numune Education and Research Hospital, Department of Nephrology, Ankara, Turkey

³Ankara Numune Education and Research Hospital, Department of Family Medicine, Ankara, Turkey

Objectives:

Thyroid hormones affect almost all the tissues of the body and their cardiovascular effects are very significant. The relationship between masked hypertension (MHT) and thyroid hormones is not known. Therefore we sought to investigate any relationship between patients with MHT, newly diagnosed by home blood pressure monitoring, and thyroid hormones.

Methods:

Patients older than 18 years of age without a previous diagnosis of hypertension and presenting to the outpatient department with hypertensive symptoms were enrolled. Patients were categorized into three groups as MHT, primary hypertension (PHT) and normotensive, according to blood pressures taken at home and office. The levels of thyroid stimulating hormone (TSH), free triiodothyronine (fT3) and free thyroxine (fT4) were measured by electro-chemiluminescence immunoassay in the three groups.

Results:

Of the 712 participants enrolled in the study, 206 had PHT, 73 had MHT and 433 were normotensive. The average log(TSH) level was higher while average fT4 level was lower in the PHT group as compared to the MHT and normotensive groups. Log(TSH) and fT4 levels were similar in the MHT and normotensive groups. Stepwise multiple regression analysis showed average systolic and diastolic blood pressures to be related to log(TSH), fT4 and presence of hypothyroidism in the PHT group. No such relationship was found in the MHT and normotensive groups.

Conclusions:

In conclusion, no relationship was found with thyroid hormones in patients with MHT in contrast to patients with PHT. Randomized controlled studies with a larger population size and longer follow-up duration are needed to understand the relationship between blood pressure values and thyroid hormones in patients with MHT.

References:

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