

Circulating levels of irisin is elevated in patients suffering from hypothyroidism and obesity in Hashimoto s Thyroiditis

İhsan Ateş¹, Mustafa Altay¹, Canan Topçuoğlu², Fatma Meriç Yılmaz²

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

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

Objectives:

Our objective in this study was to discover the relationship of irisin hormone, which acts on adipose tissue and the metabolism as thyroid hormones, with the thyroid functions and the obesity secondary to thyroid disease.

Methods:

A total of seventy-four patients were included in the study, of the patients, 37 were newly diagnosed with Hashimoto's thyroiditis dependent hypothyroidism but not received a treatment yet, and the remaining 37 were healthy volunteers with no known disease. Serum thyroid stimulating hormone (TSH), free thyroxin (fT4), anti-thyroglobulin (anti-TG) and anti-thyroid peroxidase (anti-TPO) were measured and thyroid ultrasonography was performed to both group. The serum irisin levels were measured using the commercially available ELISA

Results:

The hypothyroidism group had higher levels of irisin compared to the control group (2.77 ng/mL vs 2.15 ng/mL respectively; $p=0.017$). The hypothyroidism group had higher median levels of irisin in the obese patients than those in the control group (3.10 ng/mL vs 2.10 ng/mL relatively; $p=0.013$). The irisin level was negatively correlated with the age in the entire population and patients with hypothyroidism ($r:-0.255$, $p=0.028$; $r:-0.346$, $p=0.036$ respectively). The irisin level was positively correlated with the TSH ($r=0.247$, $p=0.034$) but negatively with the fT4 ($r=-0.316$, $p=0.006$) in the entire population. Obesity, fT4 and irisin level were identified to be independent predictors in the diagnosis of hypothyroidism in the multivariable logistic regression analysis.

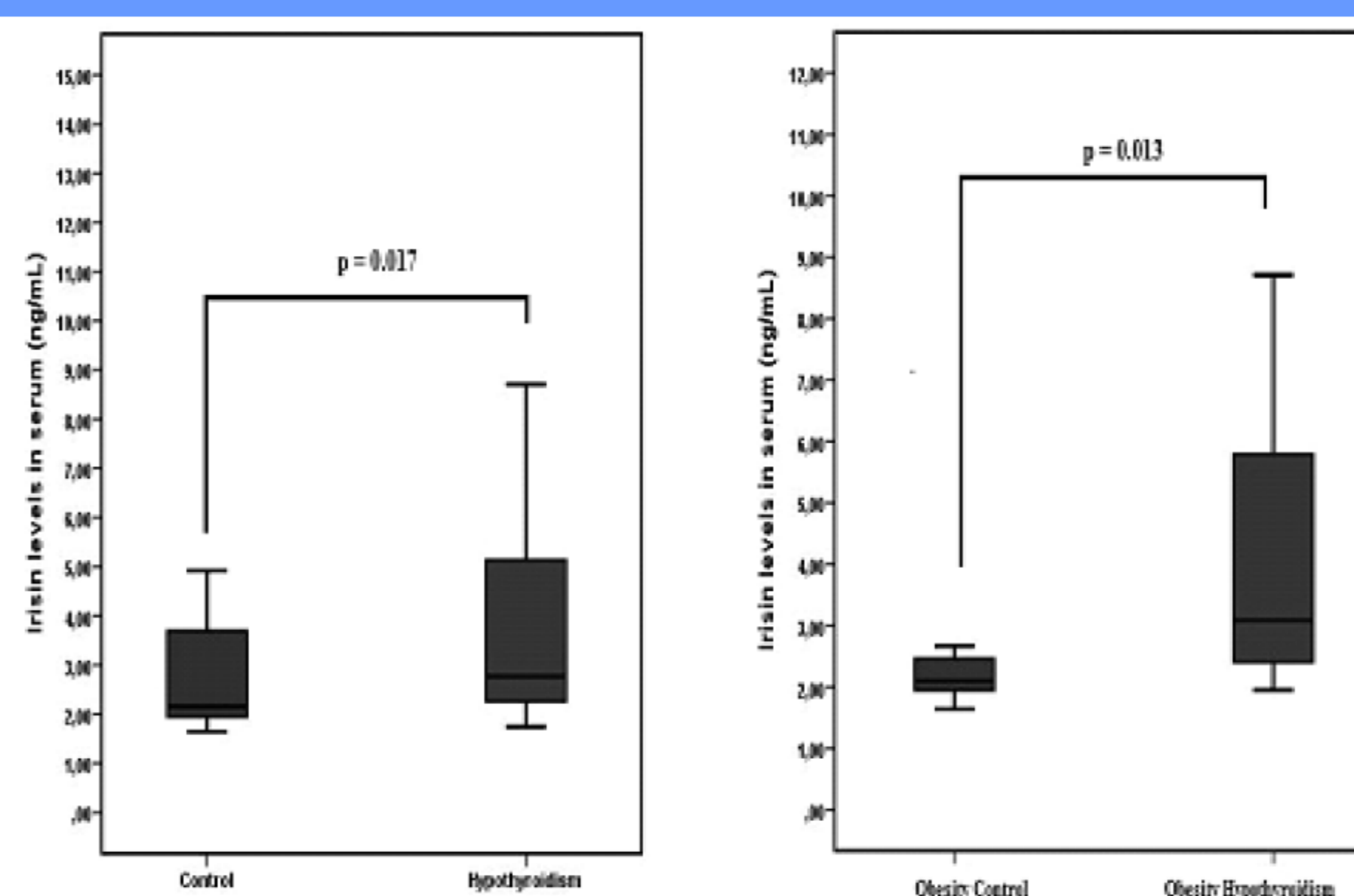


Figure 1. Serum irisin concentration in the all population and obesity population.

Conclusions:

To the best our knowledge, this study is the first in literature to identify that obesity, irisin level and fT4 level are independent risk factors on hypothyroidism

References:

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