NESFATIN-1-RELATED HYPERTRIGLYCERIDEMIA

IN HYPERTENSIVE OBESE PATIENTS

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Background:

Triglycerides (TG) are known to be an independent risk factor of cardiovascular pathology. One of the metabolically active substances, nesfatin-1, was recently found as a peptide secreted by adipose tissue, hypothalamus and some internal organs. Nesfatin-1 seems to have multisystem action and is considered to be an integrating link between different components of cardiometabolic risk.

Objective:

The study aimed at identifying the association between TG levels and nesfatin-1 activity in patients with arterial hypertension and obesity.

Methods:   
83 patients of 61 [55;66] years old with essential hypertension were included. Abdominal obesity was confirmed using waist circumference (WC) measurements according to World Health Organization recommendations. All participants were divided into group 1 (54 patients with hypertension and obesity) with WC = 111.0 [101.0;124.0] cm and group 2 (29 patients with hypertension and normal anthropometric findings) with WC = 78.5 [76.0;88.0] cm. The levels of nesfatin-1 (ng/ml) and TG (mmol/l) were determined by enzyme immunoassay method. Hypertriglyceridemia was confirmed at TG cut-off level of 1.7 mmol/l.

Results:

The TG levels had significant difference in 1 and 2 groups (1.61 [1.22;2.18] vs 1.36 [1.13;1.52], p = 0.01).

Despite the generally low level of nesfatin-1 among obese patients compared to data of group 2 (7.50 [6.76;8.16] vs 8.27 [7.75;9.04], p<0.001), it showed positive correlation with WC (r = 0.622; p<0.001) and TG level (r = 0.204; p = 0.004) in case of comorbidity.

Detailed data analysis of group 1 confirmed that patients with the highest levels of nesfatin-1 (4th quartile) had significantly higher level of TG than patients with hyponesfatinemia (1st quartile), 1.88 [1.29;2.24] vs 1.31 [1.11;1.76], p = 0.003. Patients with hypertriglyceridemia (n = 25) had significantly higher level of nesfatin-1 than patients with normotrigyceridemia (n = 29), 7.67 [6.94;8.39] vs 7.24 [6.67;8.11], p = 0.02.

Conclusions:

Higher levels of nesfatin-1, produced by adipose tissue in hypertensive patients with abdominal obesity, are associated with hypertriglyceridemia and, consequently, increased cardiometabolic risk.