Abstract: **P539**

Nesfatin-1 activity in hypertensive obese patients changes with the duration of hypertension

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Background:
Nesfatin-1 was discovered in 2006 as a satiety peptide produced by hypothalamus and adipose tissue mainly. It was found that activity of nesfatin-1 may be related to the occurrence of hypertension, obesity, type 2 diabetes mellitus and thereby affect the cardiometabolic risk. However, the mechanisms which lead to progressive deterioration after long-term hypertension remain unclear.
Objective:
The study aimed at identifying the relationship between nesfatin-1 activity and duration of elevated blood pressure in patients with arterial hypertension and abdominal obesity.
Methods:
83 patients with essential hypertension and abdominal obesity were divided by known hypertensive anamnesis into group A (< 5 years of hypertension), group B (5-10 years) and group C (> 10 years). The control group D consisted of 12 healthy individuals. The levels of nesfatin-1 (ng/ml) as well as parameters of carbohydrate and lipid metabolisms were determined by enzyme immunoassay method. Obtained data were analyzed with the methods of nonparametric statistics by Statistica10.0 software with the significance (p) < 0.05.
Results:
The hypertensive patients had higher nesfatin-1 levels compared with the control group (7.51 [6.76;8.17] vs 4.53 [4.23;4.87], $p < 0.001$). Short-term hypertension was associated with higher activity of nesfatin-1 (7.74 [7.40;8.12]) compared with results of the group B (7.41 [6.70;8.10], $p = 0.007$) and the group C (7.21 [6.44;8,07], $p = 0.04$).
Cardiometabolic features of the group A showed lower levels of fasting glucose compared with both, B ($p = 0.04$) and C ($p < 0.001$), postprandial glucose compared with the group C ($p < 0.001$), higher levels of insulin compared with the group B ($p = 0.007$), higher index of insulin resistance HOMA-IR than in the group C ($p = 0.009$), lower index of ß-cell activity HOMA-ß than in groups B ($p < 0.001$) and C ($p < 0.001$) and higher levels of triglycerides compared with the group C ($p < 0.001$).
Nesfatin-1 correlated with systolic ($r = 0.475$; $p < 0.01$) and diastolic blood pressure ($r = 0.486$; $p < 0.01$), fasting glucose ($r = 0.601$; $p < 0.001$), insulin ($r = 0.325$; $p < 0.01$), index of insulin resistance HOMA-IR ($r = 0.334$; $p < 0.01$), index of ß-cell activity HOMA-ß ($r = -0.566$; $p < 0.001$) and triglycerides ($r = 0.431$; $p < 0.001$) in patients with short-term hypertension (< 10 years) only.

Conclusions:

Presence of hypertension is associated with higher levels of nesfatin-1 compared with those in healthy individuals and slight gradual decreasing of its levels with the duration of the disease. In case of concomitant abdominal obesity nesfatin-1 may be involved in metabolic control processes during first years of hypertension.