ADIPOKINES, GLUCOMETABOLIC DISORDERS, ABDOMINAL OBESITY IN HYPERTENSIVE PATIENTS

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Objective. It has been demonstrated that obesity, especially abdominal obesity, is associates with low-grade inflammation and cardiometabolic risk. The aim of our clinical study was to analyze circulating adipokines levels: adiponectin, tumor necrosis factor-alpha (TNF-alpha), interleukin-6 (IL-6) in relation to glucometabolic profile of hypertensive patients with abdominal obesity.

Design and methods. 85 hypertensives were examined by anthropometry (body mass, height, body mass index, waist circumference). Plasma adiponectin, TNF-alpha, IL-6 by ELISA were measured. Fasting glucose, insulin levels were detected, HOMA-IR index was calculated. Abdominal obesity (AO) was diagnosed according to IDF, 2005 criteria.

Results. Patients were divided depend on AO presence: 1st group – 63 hypertensive patients with AO, 2nd group – 22 hypertensives without AO. Circulating adiponectin levels of general 1st group patients with AO (5.91±0.42 µg/ml) was statistically lower than in 2nd group patients without AO (6.39±0.77 µg/ml; p<0.05). No difference was found in females adiponectin plasma levels in comparison group (6.05±0.52 µg/ml vs 6.40±1.01 µg/ml; p>0.05, correspondingly). Whereas, males adiponectin levels in 1st group with AO (5.52±0.68 µg/ml) were significantly reduced as compared with 2nd group hypertensive males without AO (6.38±1.28 µg/ml; p<0.05). No difference was observed between IL-6 levels in examined hypertensives with AO (12.40±0.87 pg/ml) and without AO (10.92±10.92 pg/ml; p>0.05). Circulating TNF-alpha means of 1st group patients with AO presence were significantly elevated (20.09±3.29 pg/ml) vs 2nd group patients with AO absence (13.71±2.87 pg/ml; p<0.05). Glucometabolic profile analysis showed that glucose (6.52±0.29 mmol/l), insulin (21.09±1.79 µU/ml) fasting levels, and HOMA-IR index (6.77±0.87) means were significantly higher in patients with AO compared with those without AO in which glucose (5.59±0.22 mmol/l), insulin (14.69±1.88 µU/ml) concentrations, HOMA-IR (3.86±0.63) index were evaluated (p<0.05 in all cases). Multivariate regression analysis of adiponectin predictor variables (age, SBP, DBP, BMI, waist circumference, W/H ratio, glucose, insulin, HOMA-IR, TNF-alpha, IL-6) showed that waist circumference (β=-0.284; р=0.006), W/H ratio (β=-0.268; р=0.01), body mass (β=-0.29; р=0.004) and insulin (β=-0.225; р=0.031) were independent factors related to adiponectin levels (r2=0.29, р=0.031).

Conclusion. Our results suggests that hyperTNF-alpha activity and hypoadiponectinemia are closely related to glucometabolic disorders in hypertensive patients with abdominal obesity.