ADIPOKINE APELIN ACTIVITY IN PATIENTS WITH ESSENTIAL HYPERTENSION AND CENTRAL OBESITY

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Obesity has been consistently associated with hypertension and increased cardiovascular risk.

BMI as a measure of obesity is a good predictor of all-cause and cardiovascular mortality, cardiovascular mortality seems to be better predicted by abdominal or central obesity in addition to BMI.

Aim of the study: to investigate apelin’s activity in patients with essential hypertension with obesity according to the type of obesity.

Materials and methods: 96 patients with essential hypertension were examined. Inquiring, inspection and laboratory investigations were provided. Diagnosing was done according ESH 2009 guidelines. Apelin-12 plasma levels were detected using ELISA (Phoenix pharmaceuticals).

Results: the average means of BMI – Me-Q25-Q75 (30,47 (27,70; 33,70) kg/m2) and apelin level (0,28 (0,16; 0,48) ng/ml) in total group were significantly higher in comparing with control group (BMI – 21,23 (18,96; 23,12) kg/m2and apelin – 0,12 (0,10; 0,15) ng/ml). Patients were categorized into 4 cluster groups based on k-means according apelin and BMI data. No significance were in WC data between patients of 3rd and 4th clusters, but the opposite apelin activity was detected. In cluster 4, adipokine’s activity was the lowest one from total amount of patients and in cluster and was associated with pronounced carbohydrate disorders and dyslipidemia. In patients of 3rd cluster apelin level was the the highest one and was associated with lowest IL-6 range. Analysis of apelin’s interrelations in total group showed significant correlations with WC (R=0,23, p<0,05), fasting insulin (R=0,29, p<0,05), -post OGTT glucose and insulin levels (R=0,39, R=0,41 respectively, p<0,05), -HOMA index (R=0,24, p<0,05) and HbA1c (R=0,24, p<0,05).

Summary: the increased level of peptide apelin in hypertensive patients with central type of obesity was detected. Overexpression of apelin in hypertensive patients with moderate abnormalities in lipid and carbohydrate metabolism is considered as compensatory reaction. Increasing of plasma apelin level in initial stage of obesity may play protective role by delaying the development of type 2 diabetes mellitus.