Apelin as a marker of an insulin resistance in patients with essential hypertension

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Aim of investigation was to estimate a serum level of apelin in patients (pts) with essential hypertension and insulin resistance.

Methods: 94 patients with EH were examined. Carbohydrate and lipid metabolisms were investigated. Apelin’s blood levels were estimated by ELISA «Phoenix»,USA. Insuline resistance (IR) criteria was insulin level more than 12,2 mkU/ml. Data is present as Median (Q25 and Q75). FINDRISK questionnaire was used to estimate risk of type 2 diabetes development.

Results: IR was estimated in 60,0 % pts with EH. Pts were divided into 2 groups according fasting insulin level: 1gr. – 57 pts with EH and IR (age - 58,0 (51,5;65,0), 21 male, 36 female); 2 gr. - 37 pts with EH without IR (age - 59,5 (49,0;63,0), 19 male, 18 female). Apelin’s activity was higher in pts with EH (0,24 (0,15; 0,46) ngr/ml comparing with control group 0,13(0,12; 0,17) ngr/ml, р<0,001). In pts of 1gr. apelin was significantly higher - 0,32 (0,14; 0,44) ngr/ml than in pts of 2 gr. 0,23 (0,16; 0,43) ngr/ml, <0,05. Apelin correlates with IR index (r=-0,38; <0,05) and fasting insulin (r=0,49; <0,05). In pts of 2 gr. apelin correlates with HbA1c(r=0,52<0,05). FINDRISK questionnaire results showed increased risk of T2D development in pts of 1 gr. (12,5 (9,0; 15,0) vs 9,0 (8,0; 13,0), <0,05).

Conclusion: IR was estimated in 60,0 % pts with EH and was accompanied by overexpression of apelin, increased risk of type 2 diabetes development, pronounced changes in lipids and high atherogenic index. It’s possible to use apelin activity as a marker of insulin resistance in patients with essential hypertension.