Interleukin-18, interleukin-10 plasma levels in patients with arterial hypertension depend on type 2 diabetes mellitus presence

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Objective.Some investigators have discussed that both proinfalmmatory cytokine - interleukin-18 (IL-18) and anti-inflammatory cytokine – interleukin-10 (IL-10) are closely associated with metabolic syndrome.

The aim of our study was to investigate plasma IL-18 and IL-10 levels in hypertensive patients depend on type 2 diabetes mellitus (type 2 DM) presence.

Design and methods. 99 patients with arterial hypertension were examined which have been divided into 2 groups: 1 gr – 67 hypertensive pts, 2 group – 32 patients with type 2 DM associated hypertension. Plasma IL-18 and IL-10 levels by ELISA were measured. Fasting glucose, insulin plasma levels were measured, HOMA was calculated.

Results. Patients of 2nd group with type 2 DM-associated hypertension characterized by statistically higher circulating plasma IL-18 levels (183.3±1.41 pkg/ml) as compared with 1group hypertensive patients (144.±2.21 pkg/ml, p<0.05). Plasma IL-10 levels were reduced in 2nd group patients (77.00±0.52 pkg/ml) vs 1st patients (90.22±0.27 pkg/ml, p<0.05). Positive correlations between IL-18 and glucose, insulin, HOMA, and negative – between IL-10 and insulin, HOMA were found in hypertensive patients with type 2 DM.

Conclusion. Obtained results suggest that elevated circulating IL-18 plasma levels, proinflammatory cytokine, the member of the IL-1 family cytokines, have been involve in glucometabolic disorders in the patients with type 2 DM-related arterial hypertension. Low IL-10 circulation levels predispose and associated with type 2 DM development in hypertensive patients.