**CYTOKINES ACTIVITY AND COMPONENTS OF THE RENIN-ANGIOTENSIN SYSTEM AT PATIENTS WITH ARTERIAL HYPERTENSION AND DISORDERS OF CARBOHYDRATE METABOLISM**

M. Kulikova, T. Ashcheulova. Kharkiv National Medical University, Kharkiv, Ukraine

**Objective:** It has been found in previous researches that adverse options of I/D gene ACE genotypes polymorphism - ID and DD are associated with arterial hypertension development. Recently the great interest causes studying of cytokines role in formation of arterial hypertension, and also of diabetes mellitus 2 type (DM 2 type). The purpose of our research was to study features of activation of the pro-inflammatory cytokine - interleukin - 18 (IL- 18) and anti-inflammatory cytokine - interleukin - 10 (IL-10), I/D gene ACE polymorphism at patients with arterial hypertension anddisorders of carbohydrate metabolism.

**Design and Methods:** 103 hypertensive patients by clinical, anthropometric methods were examined, which have been divided into 3 groups depending on glycaemic profile: 1st group- 60 patients without carbohydrates metabolism disorders, the 2nd group – 39 patients with prediabetes, the 3rd group – 30 patients with DM 2 type. IL-18 and IL-10 by ELISA were determined. Plasma fasting levels of glucose, insulin, HbA1c were measured, HOMA was calculated. I/D gene ACE polymorphism were determined by PCR.

**Results:** When studying I/D gene ACE polymorphism in all studied groups prevalence of adverse genotypes of ID and DD was established. In the 1st group ID genotype – 23 patients (38.33%), DD genotype – 25 patients (41.67%); in the 2nd group - ID genotype – 21 patients (53.85%), DD genotype – 12 patients (30.77%); in the 3rd group - ID genotype – 16 patients (53.33%), DD genotype – 10 patients (33.33%). Also, at patients of 1st and 2nd groups statistically significant elevation of anti-inflammatory IL-10 levels (90.2 (71.2-97.5) pg/ml; 90.8 (88.1-94.4) pg/ml, p<0.05) was detected respectively in comparison with the 3rd group of patients with DM 2 type associated hypertension (77.4 (71.0-97.0) pg/ml) against elevation of pro-inflammatory IL-18 levels in all three groups (176.5 (125.0-205.0) pg/ml; 177.0 (170.0-205.0) pg/ml; 170.0 (125.0 – 210.0) pg/ml).

**Conclusion:** Obtained results allow assuming that patients with arterial hypertension presence of ID and DD genotypes of I/D gene ACE polymorphism can be associated with disorders of carbohydrate metabolism. Increase of anti-inflammatory IL-10 levels at patients with arterial hypertension accompanied by prediabetes is probably of compensatory character, and can have important diagnostic value in prevention of further development of DM 2 type which was characterized by significant decrease of anti-inflammatory marker and by shift towards pro-inflammation activation.