

THE PECULIARITIES OF PULSE PRESSURE VARIATION AND RENAL FUNCTION IN PATIENTS WITH ARTERIAL HYPERTENSION

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The purpose of the study was to establish the relationship between the pulse pressure (PP) changes and renal function in patients with arterial hypertension (AH).

Methods. 47 patients with AH of 2nd stage without diabetes and obesity were examined (25 males and 22 females, mean age – 52.5 ± 4.3 years, duration of AH – 8.7 ± 3.5 years; BMI 24.3 ± 3.7 kg/m²). The indexes of lipid blood profile, glycemia, and blood creatinine were assessed, as well as glomerular filtration rate (GFR, ml/min/m²) according to MDRD (Modification of Diet in Renal Disease Study) and standardized for body surface area - 1.73 m²; also ambulatory blood pressure monitoring was performed.

Results. The indexes of daily mean systolic (SBP) and daily mean diastolic (DBP) blood pressure were: 159.4 ± 8.3 mm Hg and 96.8 ± 5.4 mm Hg respectively. The changing of the circadian rhythm was observed in 94 % of patients, of which 73 % had «non-dipper» type; 19 % - «night-peaker», 8 % - «dipper». A direct correlation was established between the level of PP and SBP ($\tau = 0.788$; $p < 0.001$); PP and DBP ($\tau = 0.316$; $p < 0.005$). The increase of PP depended on the augmentation of SBP to the greater extent than of DBP. A direct correlation between PP and blood creatinine levels was found ($\tau = 0.36$; $p < 0.001$), as well as the inverse correlation between PP and GFR ($\tau = -0.284$; $p < 0.005$), which confirms the relationship between increasing levels of PP and decrease of the filtration capacity of the kidneys.

Conclusions. In patients with hypertension the increase of PP depends on the augmentation of SBP to the greater extent than of DBP. The relationship between the increase of PP and decreased functional capacity of the kidneys is confirmed. The management of antihypertensive therapy based on the dynamics of PP may prevent the development and progression of severe renal disease and renal failure.