



ASSESSMENT OF INDICATORS OF CENTRAL HEMODYNAMICS IN PATIENTS WITH CHRONIC GLOMERULONEPHRITIS.

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Abstract

The article describes the results of a study carried out in patients with chronic glomerulonephritis of the first and second degrees, indicators of their central hemodynamics and differences in both stages of the disease.

Key words: EDD, BAT41-2 LLC, hypertension, , LVH and diastolic dysfunction

Introduction

Chronically the glomerulonephritis (CG) -is a factor in the high cardiovascular risk. Of particular interest is the study of indicators of central hemodynamic and morph functional parameters of the heart in patients with chronic hepatitis with arterial hypertension (AH) .

Purpose of the study. The aim of the study was to study the morph functional parameters of the heart and the state of the kidneys in hypertension in patients with CG .

Materials and methods. The study included 70 patients with chronic glomerulonephritis with hypertension, stationed at the hospital Mr. treatment and clinic summit №1 The study included patients with hypertension I-II degree classification GFCF 2008 Age was 23 to 50 years. 36 patients with CH and AH made the 1st (main) group (22 men and 14 women, average age 36 , 5, 1.4 years). 34 patients with essential hypertension made up the 2nd (control) group (23 men and 11 women, mean age 36.2 + 1.2 years, duration AG 11.1 + 0.9 years). Along with general clinical methods, all patients underwent Doppler echocardiography. The systolic function of the heart was assessed by the value of the ejection fraction (EF-norm more than 55% according to Simpson), diastolic function was assessed by the ratio of peak E to peak A (E / A), time of deceleration of transmittal blood flow (DT), time isovolumetric reductions (IVRT), abdominal cardiac dimensions -by quantities left ventricular posterior wall thickness (TZSLZH), interventricular





septum (IVS), the end-systolic dimension (DAC), the end-diastolic dimension (EDD), myocardial mass index left ventricle (LVMI), relative wall thickness (RWT) of the left ventricle. For 5-7 days before the study of blood pressure, patients were discontinued antihypertensive drugs (washing period).

Patients underwent 24-hour monitoring of blood pressure (ABP) using a portable device BAT41-2 LLC "IKS-Techno". Standard ABP parameters were analyzed: maximum, minimum, mean values of systolic (SBP), diastolic (DBP) BP, heart rate (HR), pulse BP (PAP, rate less than 53 mm Hg), time index (TI) SBP and DBP (norm less than 25%, more than 25% - unstable arterial hypertension, more than 50% - stable arterial hypertension), variability of SBP, DBP during periods of wakefulness, sleep and in 24 hours the type of daily curve was determined. The severity of the two-phase BP rhythm was assessed by the daily index (CI) using traditional criteria for determining the severity of the biphasic rhythm: dipper with a CI value of 10-20% (normal), nondipper - CI 0-10% (insufficient nighttime decrease in blood pressure), over-dipper - SI: 20% (excessive decrease in blood pressure at night), night-peaked -CB ^ (nocturnal hypertension). The relative density of urine in the morning portion, the excretion of albumin in the urine (microalbuminuria -MAU) was determined by the albumin / creatinine ratio in the morning portion of urine, blood creatinine (CC) with the calculation of the glomerular filtration rate (GFR) according to the formula MDRD: $GFR (ml / min. / 1.73 m^2) = 186 \times (Cr \text{ serum, mg / dl})^{-1.154} \times (\text{age, years})^{-0.203} \times K$, where K-factor equal to 0.742 and 1,210 for females, for persons Negroid race. HCG in all patients was in remission.

Results and Discussion

There were no significant differences between the groups in terms of EF, which characterizes the systolic function of the heart. LVTDV, IVS, DAC and CRD are significantly higher in patients with hypertension and chronic hepatitis as compared with patients with essential hypertension. It is known that left ventricular hypertrophy (LVH) is an important BP-independent risk factor for cardiovascular morbidity and mortality. Only 15% of patients with chronic kidney disease starting replacement therapy have normal left ventricular structure and function. In our study, the incidence of LVH among patients with hypertension and chronic hepatitis was 71.2% versus 19% in patients with essential hypertension ($p < 0.05$), and LVMM was significantly higher in the main group compared with the control group (134.5 ± 3.5) versus $103.6 \pm 4.5 \text{ g / m}^2$, respectively). Pathological hypertrophy is characterized by the growth of not only cardiomyocytes, but also





connective tissue elements, as a result of which the rigidity of the left ventricular myocardium increases and its diastolic properties are disturbed. Diastolic dysfunction of the left ventricle was significantly more frequent in patients of the main group (60% versus 43.6, respectively). In this case, all patients in both groups was detected stage I-diastole cal dysfunction (delayed relaxation). When analyzing the results of ABPM, it was revealed that the time index of systolic blood pressure (IV SBP_{day}) and diastolic blood pressure during the day (IV DBP_{day}) was significantly higher in patients with hypertension in combination with chronic hepatitis than in essential hypertension (39.0 + 3.1% versus 43, 2 + 3.2% and 43.2 + 3.2% and 43.8 + 3.6% versus 41.1 + 3.8%, respectively) The number of patients with increased variability of SBP (IRBP) and DBP (IDBP) during the day is higher among patients with hypertension and chronic hepatitis than in patients with essential hypertension (49.1% versus 21.1% and 45.3 versus 22.5%, respectively, p-0.05). The increase in the BP variability index is a reflection of the involvement of vital organs in the process and the acceleration of the progression of renal failure. There were no significant differences in the level of pulse blood pressure (PAP), although in both groups the mean values exceed the norm (57.2 + 0.9 mm Hg in hypertension and chronic hepatitis versus 55.3 + 0.9 mm Hg. in patients with essential hypertension). PBP: 53 mm Hg. is associated with an increase in the stiffness of the great arteries and is an independent marker of cardiovascular mortality. When analyzing the distribution of patients according to the daily SBP index (SI SBP), it was revealed that the number of patients with the non-dipper and night-peaker curves is higher in the study group than in the control group (48.8% versus 25.4%, respectively, p-0, 05). It was found that the number of patients with SI DBP -10% was also significantly higher among patients with hypertension in combination with chronic hepatitis (34.1% versus 18.2%, respectively). An insufficient decrease in blood pressure at night, provided that there are no subjective sensations in the sleeping person, indicates a violation of the circadian rhythm of blood pressure and has a significant effect on the progression of renal pathology.

Conclusion

Thus, we can conclude that in patients with chronic hepatitis in combination with hypertension, compared with patients with essential hypertension, there are pronounced disorders of central hemodynamics. In this group of patients, LVH and diastolic dysfunction of the left ventricle were reliably noted. This study showed that in patients with hypertension in combination with chronic hepatitis, compared





with patients with essential hypertension, there are significantly more pronounced violations of the daily profile of blood pressure - higher IV SBP and DBP day and night, more often there is no or insufficient decrease in blood pressure at night, as well as excessive fluctuations in blood pressure during the day.

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