

EFFECT OF QUINOCARB SUBSTANCE ON BLOOD PRESSURE AND HEART RATE IN RATS AFTER A SINGLE DOSING

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Introduction (relevance). Pharmacological correction of arterial hypertension - one of the most common human diseases - is an urgent task of Cardiac Pharmacology. According to the information from the Ministry of Health of Ukraine, in the country is registered more than 9.8 million of hypertensive patients, representing 24% of the adult population and is observed a steady increase of this index. According to research by the Institute of Cardiology named after N.D. Strazhesk about 44% of the adult population has elevated blood pressure. In Ukraine level of cardiovascular mortality, which has always been closely associated with hypertension, is one of the highest in Europe - 2-4 times higher than in developed countries of the world.

Aim of the research – impact of Quinocarb substance on blood pressure and heart rate at experimental hypertensive rats after a single dosing.

Materials and methods. Research was carried out on female rats. During the experiment, animals were kept in a vivarium at the temperature 20-25 C, humidity less than 50%, natural light mode "day-night", in standard plastic cages, on a standard diet. Comparator drugs were Hydrochlorothiazide granules that contain 25 mg of Hydrochlorothiazide. After administration of a drug blood pressure and heart rate in rats was recorded in 2, 4, 6, 24 and 27 hours. Blood pressure and heart rate in the rat tail artery was recorded with a non-invasive method using blood pressure recorder BP Recorder («Ugo Basile», Italy). Effects of drugs that are compared, were evaluated by the change in blood pressure from baseline, taking it for 100%. Statistical analysis was performed using the spreadsheet package of statistical analysis. Probability of difference between mean values was determined using Student's t test. Validity of the

results was evaluated at the significance level of not less than 95% ($P \leq 0.05$).

Results and discussion. Quinocarb influence on blood pressure and heart rate in hypertensive rats was studied experimentally by measuring the baseline blood pressure and heart rate in all studied rats. Baseline blood pressure is on average $180,0 \pm 2,90$ mm of mercury, which is 38-50% higher than the physiological index of this indicator in normotensive animals (120-130 mm of mercury). Heart rate in all studied rats is on average $495 \pm 8,9$ beats / min.

Single dosing of Quinocarb to rats in a dose of 10 mg / kg resulted in all animals in the group gradually moderate and quantitatively different blood pressure reduction. Maximum anti-hypertensive effect of the drug reaches after 6 hours of observation, when the average blood pressure in the group decreased in average to 14%. Up to 24 hours of observation anti-hypertensive effect lasted up in 80% of the animals and the average blood pressure of rats in the group remained significantly lower than the initial level on 9.5%. In 27 hours after administration of Quinocarb substance average value of blood pressure returned to baseline. Comparator drug Hydrochlorotiazide caused similar to Quinocarb action in dynamics, but somewhat less pronounced. Over 27 hours of observation Quinocarb and Hydrochlorothiazide had no significant effect on the heart rate, levels of which were prone to minor fluctuations.

Conclusions. Thus, Quinocarb in single intragastric administration to experimentally hypertensive rats in a dose of 10 mg / kg provided a significant anti-hypertensive effect, maximum of which evolved after 6 hours, and its severity and duration exceeded anti-hypertensive activity of Hydrochlorotiazide.