N.V.Stanishevskaya

State institution "Dnipropetrovsk medical academy of the Ministry of Health of Ukraine"

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MORPHOFUNCTIONAL CHANGES IN THE MYOCARDIUM OF THE RAT HEART VENTRICLES WITH NONCORONAROGENIC NECROSIS IN DIFFERENT STAGES OF ISCHEMIC PRECONDITION

ABSTRACT. Background. . The incidents of the cardiac ischemic disease and it's complications for the last years increase in all over the world. Some authors think that short periods of ischemia make myocardium more resist to long coronary occlusion. This cardioprotective mechanism was named ischemic preconditioning(IPC). Some authors believe that short periods of hypoxia contribute to the resistance to hypoxic myocardial injury . Today, however, poorly understood mechanisms of cardioprotective action IPC. **Objective.** The purpose of the study was to determine the effectiveness of ischemic preconditioning to increase the body resistance and morphofunctional adaptation of the heart to noncoronary necrosis of myocardium **Methods and results.** The study was carried out on the white Wistar rats. Exposition dynamics of sorption in the myocardium of heart ventricules was studied. This score was studied by the intracardiac entering 0,5% water solution neutral red with next getting alcoholic extract from myocardium tissue. This extract was studied with concentration photocolorimeter. Sorption index was calculated in micrograms / mg by dividing the quantitative indicator of the concentration of neutral red on the weight of solids piece myocardium. Also histological sections of the myocardium of ventricls were studied at different stages of ischemic precondition and noncoronarogenic necrosis. **Conclusion.** Positive dynamics of functional scores manifested in the fact that the exposition dynamics of sorption in the myocardium of the heart ventricles was increased in all the experimental series, compared to the control and to a greater extent after the modeling of the necrosis of myocardium in ischemic precondition first step. In second step this score was lower. Changes in the functional parameter correlated with the morphological changes in the myocardium.

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✉ **nataly2004_lg@mail.ru**

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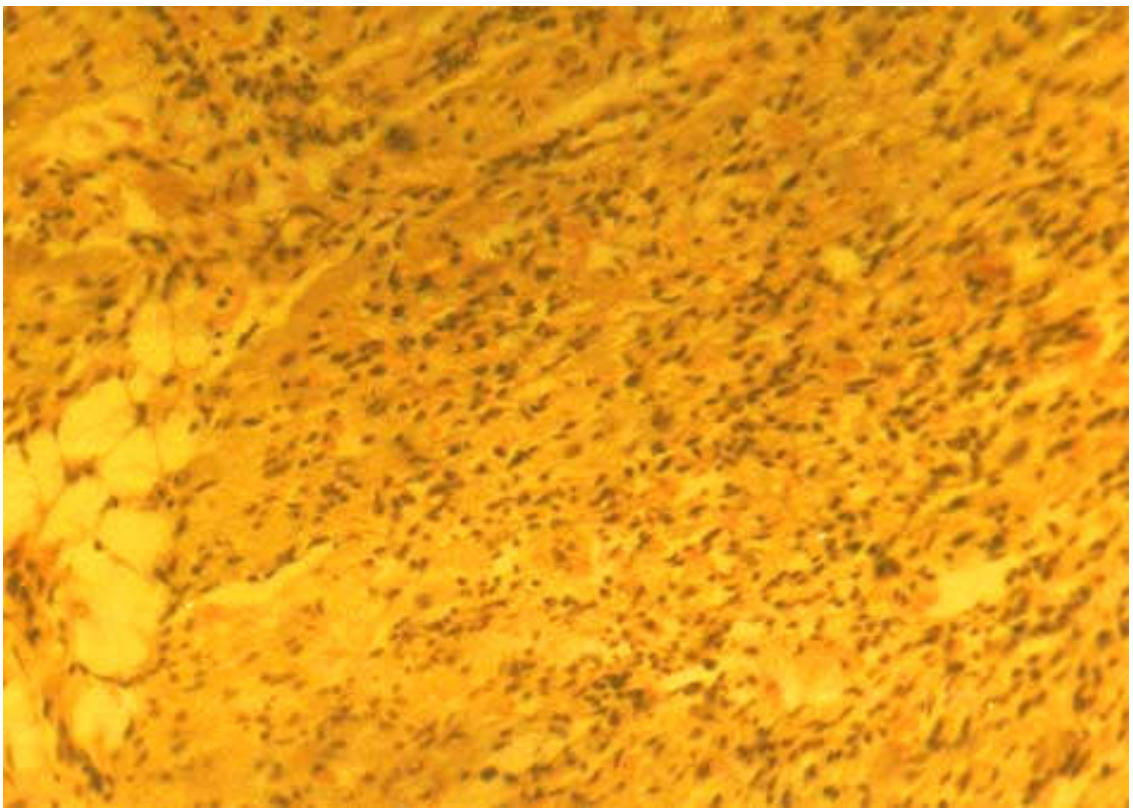

Fig. 1. Ventricular myocardium of the control group animal. Muscular fibers stained yellow-brown, nuclei stained brown to dark-brown. Haematoxylin-basic fuchsin-picric acid staining. ×80.

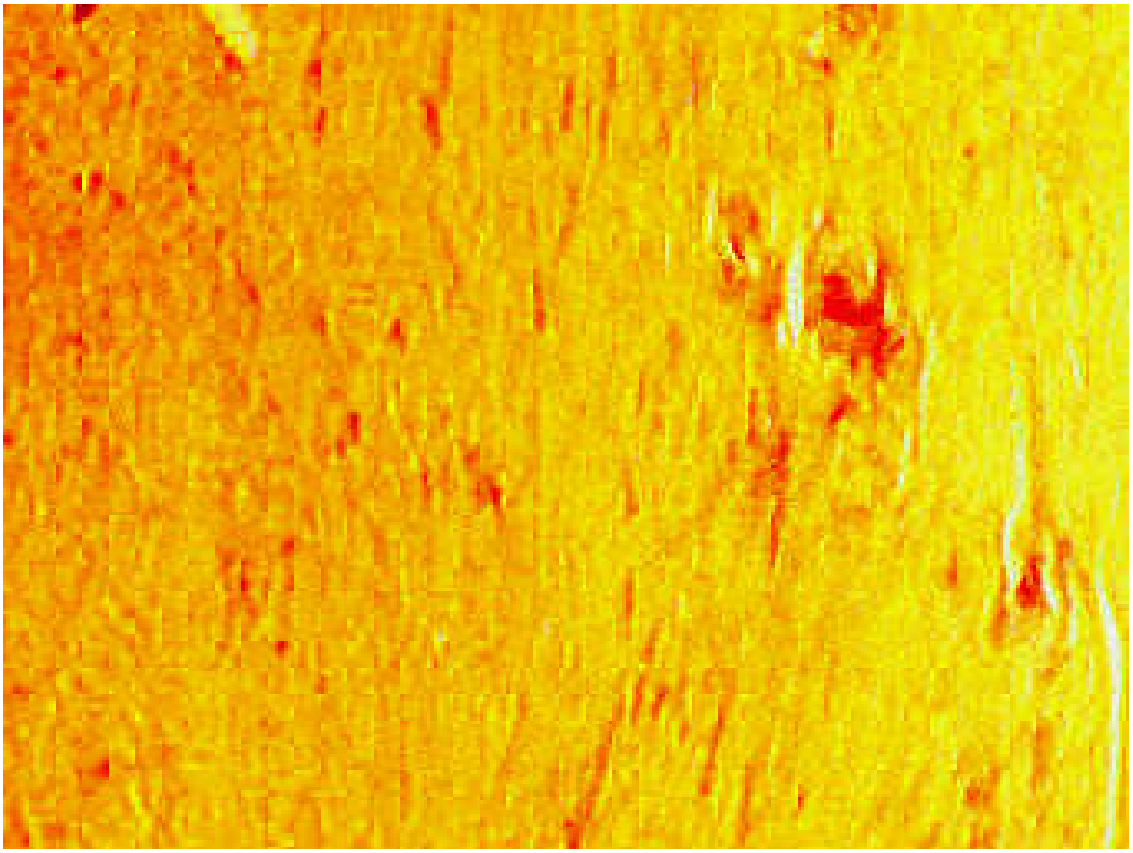

Fig. 2. Ventricular myocardium on stage 1 ischemic preconditioning. Haematoxylin-basic fuchsin-picric acid staining. ×140.

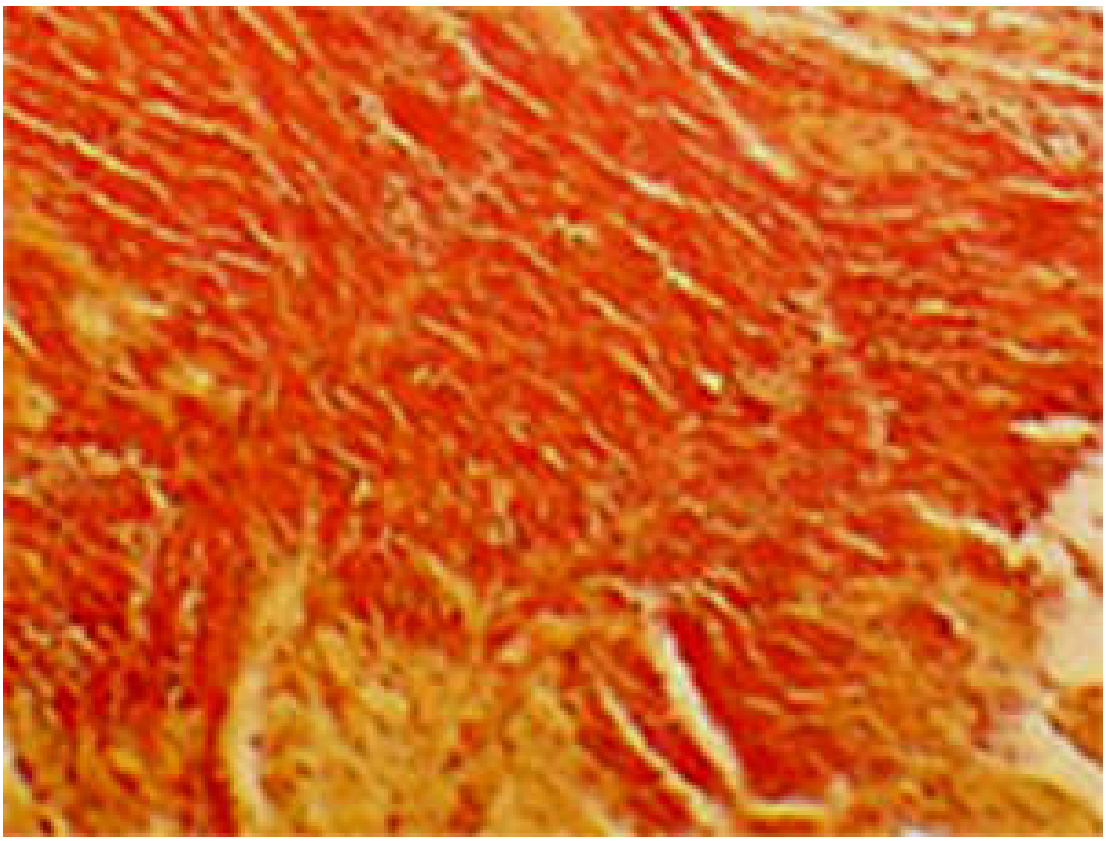

Fig. 3. Ventricular myocardium after modeled noncoronarogenic myocardial necrosis. Haematoxylin-basic fuchsin-picric acid staining. ×140.

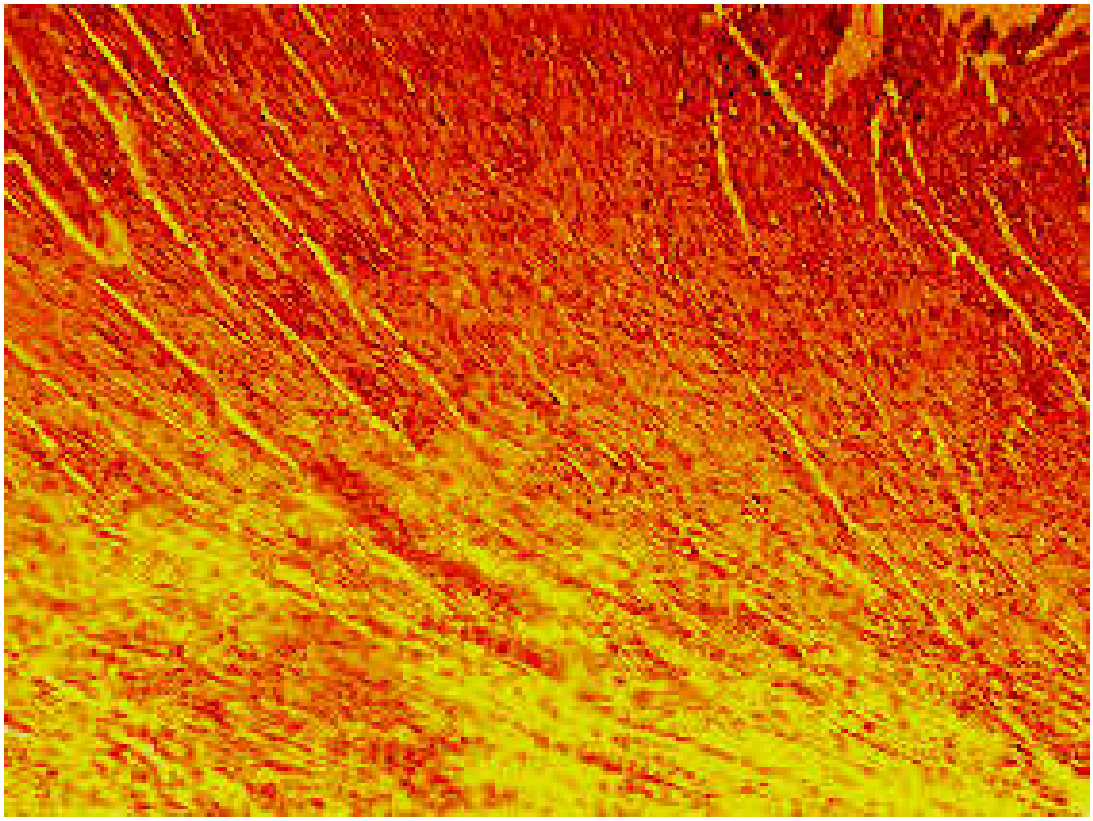

Fig. 4. Ventricular myocardium after modeled noncoronarogenic myocardial necrosis on stage 1 ischemic preconditioning. Haematoxylin-basic fuchsin-picric acid staining. ×120.

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