in the muscle. On the basis of all these findings post-traumatic microangiopathies can be regarded as leading factors in the genesis of the late dystrophic disorders in injured muscle.

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VOLUME BLOOD FLOW IN THE POPLITEAL LYMPH NODE REGION AFTER EXPERIMENTAL MYOCARDIAL INFARCTION AND ITS TREATMENT WITH DOGROSE POLYPHENOLS PREPARATION

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UDC 616.127-005.4-092.9-085.322:582.734.4:547.56]-07:616.428-031:611.983]-005-07

KEY WORDS: experimental myocardial ischemia; lymph node; volume blood flow; correction

Myocardial infarction causes considerable disturbances of the blood and lymph circulation throughout the body. The degree of these disturbances differs at different periods of the disease. The aim of the present investigation was to study the dynamics of the blood flow in the zone of a somatic lymph node in experimentally myocardial ischemia and during its correction. The blood flow was recorded by polarography based on hydrogen clearance [1, 2].

EXPERIMENTAL METHOD

Noninbred male rats aged 2 months and weighing 160-200 g were used. The test object was the popliteal lymph node. The animals were divided into 10 groups with 10 rats in each group. Animals of group 1 served as the control. Myocardial ischemia was induced in the rats of the remaining groups under ether anesthesia by thoracotomy and ligation of the left coronary artery at a distance of 3-4 mm from its origin from the aorta, followed by closure of the operation wound in layers. The volume velocity of the blood flow in group 2 was recorded on the 1st day after the operation, in group 3 on the 3rd day, and in group 4 on the 7th day. The times of investigation of the volume blood flow corresponded to the acute period of myocardial infarction, accompanied by marked clinical manifestations. Once a day the animals of groups 5, 6, and 7 received the dogrose polyphenols preparation through a gastric tube in a dose of 1 mg/50 g body weight [4]. The volume velocity of the blood flow in group 5 was recorded on the 1st day after the operation, in group 6 on the 3rd day, and in group 7 on the 7th day after the operation.

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(Presented by Academician of the Academy of Medical Sciences of the USSR Yu. I. Borodin.) Translated from Byulleten' Éksperimental'noi Biologii i Meditsiny, Vol. 112, No. 7, pp. 107-107, July, 1991. Original article submitted February 14, 1990.

0007-4888/91/0007-1048$12.50

The principle of the polarographic method is recording the curve of clearance of the tissue from hydrogen entering it with the blood flow. The experimental results are shown in the form of graphs recorded by means of an electric circuit consisting of an active platinum electrode, an Ag–AgCl reference electrode, and LP-9 polarograph, equipped with automatic writer [2]. The slope of the hydrogen clearance curve on the graphs on a logarithmic scale is determined by the volume velocity of the blood flow, and the time taken for the hydrogen concentration in the tissue to be reduced by half was calculated by the "initial slope" method [3]. The active platinum electrode, 0.2 mm in diameter, was inserted into the lower third of the adductor magnus muscle of the rat thigh to a depth of 1 mm. The reference electrode was applied through a salt bridge to the base of the rat's tail. Hydrogen was given by inhalation. The results were subjected to statistical analysis.

EXPERIMENTAL RESULTS

The volume velocity of the blood flow in the intact animals of control group 1 was 60.48 ± 5.8 ml/min/100 g tissue. In the animals of group 2 the volume blood flow fell significantly to 41.65 ± 3.8 ml/min/100 g tissue, or 69% of the control level. The maximal decrease in the volume blood flow was down to 28.9 ± 2.7 ml/min/100 g tissue, or 48% of the control, and was observed in the animals of group 3. In the animals of group 4 there was a tendency for the volume velocity of the blood flow to be restored to 33.0 ± 3.2 ml/min/100 g tissue, or 55% of the control. On the basis of these results a decrease in the volume velocity of the blood flow and worsening of tissue drainage in the region of the popliteal lymph node of the rat in the acute period of experimental myocardial infarction can be postulated. In groups of animals in which correction by the dogrose polyphenols preparation was used, the dynamics of the blood flow was altered. In group 5, for instance, the volume velocity of the blood flow was 43.73 ± 3.5 ml/min/100 g tissue, or 72% of the control, in group 6 it was 37.68 ± 2.1 ml/min/100 g tissue, or 62% of the control value, and in group 7 it was 38.26 ± 3.7 ml/min/100 g tissue, or 63% of the control.

It can be concluded from these results that the use of the dogrose polyphenols preparation helps to restore the normal volume velocity of the blood flow in the tissue after creation of experimental myocardial ischemia, and the effect is particularly pronounced on the 3rd and 7th days after the operation.

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