EFFICACY OF QUERCETIN COMBINED WITH DICLOFENAC SODIUM IN MODEL OF ALTERATIVE MYOCARDIAL LESION IN RATS

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Purpose. To determine the pharmacologic efficacy of quercetin combined with diclofenac sodium by evaluating morphofunctional changes in myocardium with alterative lesion after oral administration in rats. ***Methods.*** Alterative lesion in rat`s myocardium provided by intraperitoneal injection of furazolidon in dose 200 mg / kg and after go an hour intramuscular injection of isoproterenol in dose 40 mg / kg. (O.V.Stefanov, 2001). Alterative myocardial inflammation caused by specific cardiotoxic furazolidon activity on the ground cardiac muscle depletion under action of isoproterenol. This model permit thoroughly evaluate the pharmacologic efficacy of research object. ECG, activity of enzymes markers of cardiomyocytes damage (AST, LDH), level in the blood serum of TBA-reactive substances (TBARS) and conjugated dienes (CD), the value / mass ratio of the heart also were assessed during this research. Standard methods of light microscopy were conducted research of myocardium structure. ***Results.*** The level of enzymes markers cardiomyocytes damage has been significantly reduced at background of quercetin combined with diclofenac sodium in dose 18.2 mg / kg. The level of lipid peroxidation has been normalized: the level of TBA-reactive substances and conjugated dienes decreased in 1.3 times relative to untreated animals. In applying of quercetin combined with diclofenac sodium to treat rats with alterative myocardial inflammation caused by specific cardiotoxic furazolidon activity on the ground cardiac muscle depletion under action of isoproterenol was observed following morphological picture. Cellular infiltrates, scattered deep in the myocardium or localized papillary muscles, has been isolated. The degree of maturity of the cells is higher than in the control group. Average score for the treated group is 1.0, which is significantly lower than in the untreated group animals. Individual muscle fibers or their fragments basophilic cross-striated myofibrils has been shaded in such areas. Condition of nucleus of cardiomyocytes changed around lesioned tissue cells: they increased in size and became rounded; chromatin was located near the membrane of this cells. Venous hyperemia was same as at untreated control group. That is indicating to a high level of protective properties of research object to the rats myocardium.

Conclusions. Myocarditis due to the alterative lesion in rat`s myocardium provided by intraperitoneal injection of furazolidon and isoproterenol has been formed and morphologically confirmed on day 5 this pharmacological research. Efficacy of study composition in dose 18.2 mg / kg has been most pronounced cardioprotective effect on model alterative lesion in rats myocardium after oral administration. Research object onset reduce the expressed alteration and prevent the development of degenerative lesions of cardiomyocytes. Mechanism of cardioprotective action has been determined primarily due to antialterative, antioxidant, membrane stabilization and anabolic activity of quercetin and diclofenac sodium combination.