ANTIOXIDANT ACTIVITY OF HYNALONAMYDITIN

V.A. Sereda, E.V. Kirshenbaum, M.Ye. Berezniakova, L.V. Karabut
The National University of Pharmacy, Kharkiv, Ukraine
klinlab@nuph.edu.ua

Conducted research showed that use of hynalonamyditin significantly reduced the content of primary molecular products of lipid peroxidation in cardiac tissue and blood, reduced cholesterol/phospholipids ratio [2, 6], and stimulated superoxide-dismutase activity of myocardial tissue and superoxide-entraining activity of blood serum.

By its impact on lipid peroxidation processes, hynalonamyditin had greater impact than vitamin E.

The purpose of the research were confirmed by submicroscopic examination of myocardium, when attention was paid to ultrastructure of cardiomyocyte nucleus, sarcoplasm, availability of mitochondria in juxtanuclear area, borders of "insert disc" between sarcomeres, etc. After administration of hynalonamyditin in animals, number of mitochondria significantly increased, borders of "insert discs" between sarcomeres slightly "expanded", a lot of different organelles appeared in sarcoplasm. Restoration of myocardiocyte ultrastructure was confirmed by detected changes which appear as a result of hypoxia and in case of antioxidant action of both, tocopheryl acetate and hynalonamyditin.

Materials and methods of research Acute regional myocardial ischemia was caused by RB Jennings method under ethaminal-sodium anesthesia (40 mg/kg intravenous). Activity of lipid peroxidation and key anti-oxidase system enzymes was determined by means of sampling in decapitated animal blood serum and myocardium.

Analysis of data in literature, which speak of the ability of tocopheryl acetate to improve metabolism and contractive activity of myocardium, reduce oxygen consumption by myocardium, take part in tissue respiration and in other important processes of cell metabolism, allows with great probability, while taking into account results of own research, assuming that hynalonamyditin possesses similar properties.

Summary. Antioxidant effect of hynalonamyditin is realized as a result of reduction of primary molecular products of lipid peroxidation in myocardium and blood, stimulation of superoxide-dismutase activity of cardiac muscle and superoxide-entraining activity of blood serum.