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The influence of 'Hepafisan' capsules upon processes of free radical oxidation under conditions of chronic hepatitis

O. Gerush¹, L. Yakovleva², O. Lenytska² and I. Gerush¹

¹*Bukovinian State Medical University, Chernivtsi, Ukraine,*

²*National Pharmaceutical University, Kharkiv, Ukraine*

Activation of free radical oxidation (FRO) processes in a liver pathology results in destruction of the cellular membrane and later to death of the cells. The search of new medicine able to regulate FRO processes with liver pathology is topical nowadays. The objective of the study was to examine 'Hepafisan' capsules effect upon the activity of FRO processes under conditions of chronic hepatitis caused in rats by tetrachloroethane and ethanol. 'Hepafisan' capsules (54 and 108 mg/kg) and 'Hepabene' capsules (88 mg/kg), as a referent medicine were administered orally.

The content of the products characterizing lipid peroxidation (LPO) condition was studied in the liver homogenate – thiobarbituric acid (TBA)-reagents, diene conjugates (DC), reduced glutathione (RG), one of the component of the antioxidant system (AOS), as well as the content of cholesterol and general protein in the blood serum. Administration of 'Hepafisan' capsules resulted in the inhibition of free radical pathology development: DC content was three times lower with the dose of 54 mg/kg and two times lower with the dose of 108 mg/kg as compared with the indices of untreated animals. But reliable increase of RG level in 2.7 times was observed only in the dose of 108 mg/kg, which is indicative of the ability of 'Hepafisan' capsules to inhibit LPO processes on the early stage at the expense of AOS activation. This 'Hepafisan' capsules action is directed on homeostasis renewal in the liver, increased resistance of the organ to the influence of pathogenic factors, normalization of functional activity and stimulation of reparative-regenerative processes, which is indicative of increased survival ability of the animals to 88% (56% in the untreated animals with hepatitis), 1.5 times decreased mass liver coefficient and 2.3 times decreased cholesterol level, 1.5 times increased level of general protein as compared with the indices of the untreated animals with chronic hepatitis.

Under the influence of 'Hepabene' capsules the content of DC was two times lower, RG level was 1.7 times higher in the liver of animals with toxic hepatitis as compared with the indices of untreated animals. The results of the research detected dose-dependent antioxidant activity of 'Hepafisan' capsules, which is higher than the activity of the referent medication. 'Hepafisan' capsules can be considered highly effective hepatoprotector with antioxidant mechanism of action preventing lesion of the cellular membranes and renewing the function of damaged hepatocytes in case of liver pathology by means of inhibition of FRO activation.