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Dudka Y.A.
INFLUENCE OF THE PINEAL HORMONE
ON THE FUNCTIONAL STATE OF THE KIDNEY

Ya.D. Kirshenblat Department of Physiology
Bukovinian State Medical University

A toxic effect of cisplatin, which is widely used in oncology, negatively affects the functions of various organs, including the kidneys. All this dictates the need to study nephroprotectors more and more. One of the leading substances is the hormone of the pineal gland - melatonin.

The aim of the study was to establish the nephroprotective potential of melatonin under conditions of the cisplatin model of acute kidney injury (AKI). The studies were carried out on 24 rats; total PL and PL fractions were determined by thin layer chromatography. Two hepatotrophic xenobiotics were used: carbon tetrachloride and the alkaloid heliotrin. Intoxication with carbon tetrachloride in rats was carried out by inhalation in the dose of 0.3–0.4 ml per 100 g of animal weight for 21 days; and heliotrin was injected subcutaneously, the control group consisted of rats receiving saline. As antioxidants, membrane stabilizers, the tested medicinal preparations (vitamin E, sodium selenite, liposome, LESE-complex of preparations containing liposomes, vitamin E and sodium selenite) were administered on 70–90 days from the beginning of the experiment.

The study of the content of total and individual PL during intoxication with carbon tetrachloride showed a decrease in the level of PC (phosphatidylcholine) by 1.6 times, PE (phosphatidylethanolamine) by 1.5 times, an increase in LPC (lysophatidylcholine) by 3 times, a decrease in total FL by 3 times. With the introduction of heliotrin, the same tendency towards a decrease in the amount of total and neutrophilic PL was observed. In rat liver on the 70th and 90th days of the study, the PL content increased under the influence of vitamin E by 38% and 41%; sodium selenite 10.5% and 21.8%; liposomes - 20% and 35.6%, and LESE - 45% and 49.2%, respectively, compared with the control group. The study of the content of neutrophilic fractions of PL 1.2–2.3 times increased.