STUDY OF CHRONIC TOXICITY OF A COLLECTION WITH ANTIDIABETIC EFFECT

Rakhimova M. Kh.,[1] Mishchenko O.Ya.,[2] Shpychak O.S.[2], Musozoda S. M.[1]

[1]Tajik National University, Dushanbe, Tajikistan

[2]Institute for Advanced Training of Pharmacy Specialists of the National University of Pharmacy, Kharkiv, Ukraine

Introduction. Currently, one of the priority areas for the development of pharmacy is the search for new sources of biologically active substances and the creation of innovative drugs based on them. Medicinal plants are of particular interest in this regard. Secondary plant metabolites, which are substances of natural origin, serve as the basis for the creation of medicines that combine the effectiveness of pharmacological action with minimal side effects.

Purpose of the study. Study of the chronic toxicity of an antidiabetic preparation at the stage of preclinical research.

Materials and methods. For the experiment, 36 rats weighing 165-180 g were used (males -18 and females -18). The experiment used an antidiabetic extract (ADC) prepared in a ratio of 1:10. The study of the chronic toxicity of ADS was carried out at a conditional therapeutic dose of 5 ml/kg and at a dose of 20 ml/kg, which was four times higher than the conditional therapeutic dose for a single intragastric administration through a tube. The duration of the experiment was 30 days, which is justified by the expected duration of use of ADS in clinical practice (21-30 days). At the end of the experiment, the toxic effect of ADS was assessed based on changes in peripheral blood, functional state of the liver, kidneys, central nervous (CNS) and cardiovascular systems. The body weight of the animals was recorded over time: initial state, 7, 14, 21 and 30 days. The effect of the drug on the state of the central nervous system of animals was assessed using the “open field” method at the end of the administration period (30 days).

Research results. As studies have shown, at a dose of 5 ml/kg and 20 ml/kg for 30 days, no signs of intoxication or deaths were observed in rats. The behavior of rats in the experimental groups did not differ from the control ones. The duration of administration of ADS to rats did not have a negative effect on the studied parameters in the blood serum, does not disrupt the processes of protein biosynthesis, does not affect the functional state of the liver and kidneys of animals, carbohydrate and lipid metabolism.

Conclusions. A study of chronic toxicity showed that with long-term (over 30 days) intragastric administration of ADS to rats at a conditional therapeutic dose of 5 ml/kg and at a dose of 20 ml/kg, which was four times higher than the conditional therapeutic dose, does not cause signs of intoxication in rats, does not affects general trophic processes, does not disrupt protein synthesis processes, does not affect the functional state of the liver and kidneys, carbohydrate and lipid metabolism, the state of the central nervous system and cardiovascular system. ADS belongs to toxicity class VI - relatively harmless substances (LD≥ 15 ml/kg).