ACUTE TOXICITY OF THE DRUG THIOCINE IN EXPERIMENTAL STUDIES

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Actuality

In each country, the incidence of obesity is constantly increasing, and dyslipidemia often occurs in parallel. Every year, around 2.8 million people worldwide die due to being overweight or obese. If the current trend continues, by 2030, 86.3% of adults will be overweight, and the number of deaths will be very high [1].

Therefore, currently, there is a growing interest worldwide in the search for new drugs or substances that reduce dyslipidemic indicators and studying their properties.

Dyslipidemias are an active and expanding area of research, with recent studies providing insight into their molecular basis and genetic origin. These studies determine their role in the development of atherosclerosis and elucidate the ability of pharmacological agents to reduce the risk of cardiovascular disease in affected individuals.

Purpose of the study

Assess the acute toxicity of the new drug, as well as to identify a pronounced hypolipidemic property. Subsequently, to study the control of the level of triglycerides and lipoproteins in the blood of animals.

Materials and methods

In the vivarium of the Tashkent Pharmaceutical Institute, the level of acute toxicity of the new drug Thiocin was studied on white mice according to the method of Belenky M.L. [2]. For the experiment, white outbred male mice were used in the amount of 30 heads, weighing 19–21 g, kept in quarantine for 14 days.

Conducting the experiment: for the experiment, white mice were divided into 5 groups of 6 animals each. Mice of each group were injected once intragastrically with a 5% aqueous suspension (150 mg of powder + 3 ml of distilled water) of the drug Thiocine as follows: group 1 (6 mice) - per os at a dose of 250 mg/kg (0.1 ml); group 2 (6 mice) - per os at a dose of 500 mg/kg (0.2 ml); group 3 (6 mice) - per os at a dose of 750 mg/kg (0.3 ml); group 4 (6 mice) - per os at a dose of 1000 mg/kg (0.4 ml); group 5 (6 mice) - per os at a dose of 1250 mg/kg (0.5 ml).

Research results

When studying the acute toxicity of the drug Thiocin, the following data were obtained: Group 1 (dose 250 mg/kg): after administration of the drug during the day, mice remained active, no visible changes in behavior and functional state were observed. The condition of the coat and skin is normal without changes, they did not refuse food and water, the death of mice was not observed. On the second day and in the subsequent observation period, there were no pathological changes in the behavior and physiological parameters of mice. The consumption of water and feed is normal, there was no lag in growth and development. There was no death of mice within 14 days.

Group 2 (dose 500 mg/kg): after administration of the drug in mice, lethargy and immobility were observed. Two mice were observed in a lateral position. During the day, these mice died. On the second day, the surviving mice became active, the consumption of water and food was normal. On the third day and during the rest of the observation period, no deviations were observed in the behavior and physiological parameters of mice. No other mice died.

Group 3 (dose 750 mg/kg) - after the administration of the drug, mice were observed lethargy, immobility. In three mice, a lateral position was observed. During the day, these mice died. On the second day, the surviving mice remained lethargic, food and water consumption was passive. On the third day and during the rest of the observation period, no deviations were observed in the behavior and physiological parameters of mice. No other mice died.

Group 4 (dose 1000 mg/kg) - the introduction of the drug caused a lateral position in all mice in this group, 5 mice died during the day. On the second and third days, the remaining mice remained lethargic. On the fourth day and on the following days, no deviations and death were observed in the behavior and physiological parameters of the mouse.

Group 5 (dose 1250 mg/kg) - in this group, all mice in the group died from signs of intoxication.

Conclusion

The LD50 of the drug Thiocin, developed at the Tashkent Pharmaceutical Institute, was 660 (511 ÷ 851) mg/kg.

According to the classification of the toxicity of substances, the study drug was of low toxicity [3].

However, there are still no works on the combined use of lipoic acid and zinc sulfate (Thiocin) for the treatment of dyslipidemia in Uzbekistan, using a domestic drug, and therefore the potential for using Thiocin in medical practice seems to be much greater.

Literature

1. Hanson, Michael A., et al. "Crystal structure of a lipid G protein– coupled receptor." Science 335.6070 (2012): 851-855
2. Belenkij M.L. Elementy kolichestvennoj ocenki farmakologicheskogo effekta // Leningrad. -1963. -S. 81-90
3. Mironova A.I. Rukovodstvo po provedeniyu doklinicheskih issledovanij lekarstvennyh sredstv. Chast pervaya // pod red. Mironova A.I. OOO «Grif i K». –Moskva, 2012. -944 s.