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## **INFLUENCE OF OXIDE ETHYLENE AND PROPYL ON THE CONTENT OF CHOLESTEROL AND TRIGLYCERIDES IN RAT BLOOD IN THE TOXICOLOGICAL EXPERIMENT**

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**Introduction.** Today no one represents his life without the use of detergents and cosmetics, modern building materials, food without plastic packaging. Everywhere contains synthetic surfactants, which are products of polymerization of ethylene oxide and propylene. Numerous experimental data have shown that surfactants can influence the course of biochemical processes in the body, activate free radical reactions that disrupt the structural and functional state of cell membranes, the main components of which are lipids. Therefore, the study of key biochemical indices of lipid metabolism is a prerequisite for a primary before nosological assessment of membrane pathology. Aim - to determine the concentration of cholesterol and triglycerides in the blood of white rats under the influence of polyethylene glycol and polypropylene glycol.

**Materials and methods.** A subacute toxicological experiment was performed in three groups of animals: a control and two experimental animals in the number of 10 mature (6-8 months) white rats of both sexes of the WAG population in each. Aqueous solutions of polyethylene glycol (PEG) and polypropylene glycol (PPG) were injected daily intra-gastrically for 45 days at a dose of 1/10 DL50 with a metal probe. The control group of rats received the corresponding volumes of drinking water. Determination of cholesterol and triglycerides in the blood was performed after the subacute toxification of experimental animals was completed on day 45 of the experiment. The study was carried out on the biochemical analyzer "Lab Line-80" (Austria) with the help of reagent kits of the firm "Filisit-Diagnostika" (Ukraine).

**Results.** In groups of animals, PEG and PPG toxicity, blood cholesterol level was  $2.4 \pm 0.6$  mM / L and  $2.6 \pm 0.3$  mM / L and increased by 1.5 and 1.6 times, respectively, in comparison with a control group of animals whose blood cholesterol level was  $1.5 \pm 0.3$  mM / L. The level of triglycerides in the blood of animals, the toxicity of PEG and PPG, was  $1.78 \pm 0.38$  mmol / L and  $1.67 \pm 0.43$  mmol / L and increased by 5.9 and 5.3 times, respectively, compared with the control group animals, the content of triglycerides in the blood of which was  $0.31 \pm 0.09$  mM / L.

**Conclusion.** It has been established that during the subacute toxicological experiment in rats, polyethylene glycol and polypropylene glycol at a dose of 1/10 DL50 cause a change in lipid metabolism, namely an increase in the cholesterol content, which may be associated with an increase in the synthesis of cholesterol in the liver from acetyl-CoA, hormones of steroid nature (sex hormones, corticosteroids), the synthesis of bile acids. An increase in the content of triglycerides in



the blood of experimental animals may be associated with impaired functioning of the pancreas and thyroid glands.

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**INVESTIGATION OF BEHAVIORAL RESPONSES OF EXPERIMENTAL ANIMALS  
UNDER THE INFLUENCE OF POLYPROPYLENE GLYCOL**

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**Introduction.** In the various fields of bio-medical research, numerous behavioral tests are used to study the influence of environmental factors, pharmacological substances. Neuroethological test "Open field" is the most commonly used behavior test for studying the stress resistance of experimental animals. The "Open Field" facility is designed to study the behavior of warm-blooded animals (individual and typological features) and allows to assess: the motor research activity observed in animals in new places. Aim - to evaluate the individual-typological features of the behavior of white rats under the influence of polypropylene glycol in a subacute toxicological experiment.

**Materials and methods.** A subacute toxicological experiment was carried out on two groups of animals: control and experimental in the number of 10 white rats of the WAG population in each, at the age of 6-8 months of both sexes. Aqueous solutions of polypropylene glycol (PPG) were daily administered intragastrically 45 days at a dose of 1/10 DL50 with a metal probe. The control group of rats received the corresponding volumes of drinking water. Testing in the "open field" installation was carried out on the 1st, 14th and 45th days of the introduction of the xenobiotic. The influence of PPG on the coordination of movements was assessed, horizontal, vertical and research activity was recorded. The content and monitoring of animals was carried out in accordance with the provisions of the "General principles of animal experiments", agreed upon by the First National Congress on Bioethics (Kiev, 2001), "European Convention for the Protection of Vertebrates used for experimental and scientific purposes" (Strasbourg, 1986).

**Results.** The results of a study of "research" activity in animals in a subacute toxicological experiment showed its decrease. After the initial testing of the animals in the open field facility, horizontal motor activity (HMA), vertical motor activity (VMA), maximum number of intersections of squares and examination of holes in all animals were observed. In secondary testing of animals, there was a marked decrease in all types of research activity: HMA, VMA and intersections of squares decreased by 56%, 59% and 67%, respectively, compared with the control group of animals. Also, we observed long-term washing reactions (grooming) in 98% of animals and an increase in the indicators of