



emotional status (diuresis and defecation) in 80% of animals. In the third testing of animals, there was a complete loss of "research activity", passivity and fading in 1 place in 98% of the experimental group.

Conclusion. In connection with the cumulation of the toxic effect of polypropylene glycol in animals in a subacute toxicological experiment, the research activity decreased from 14 days and its loss by the end of the experiment. The obtained results of studying the individual-typological features of the behavior of rats with the help of the test "Open field" testify to the stress-resistance of rats under the influence of the xenobiotic under study.

Bezrodnaya A., Nicholas B., Gabriel A.

MORPHOLOGICAL CHANGES IN THE INTERNAL ORGANS OF WARM-BLOODED ANIMALS AFTER INFLUENCE OF POLYETHYLENE GLYCOL AND POLYPROPYLENE GLYCOL

Kharkiv national medical university
Department of Biological Chemistry
Kharkiv, Ukraine

Research advisor: prof. Nakonechna O.A.

Introduction. In the modern world, polymers of toxic monomers of ethylene oxide and propylene oxide are widely used for the production of glycols, glycol ethers, nonionic surfactants, polyesters, which form the basis for the production of plastic materials, antifreezes, solvents, cosmetics and household chemicals. Aim - to evaluate the morphological changes in the internal organs of warm-blooded animals under the influence of ethylene oxide and propylene oxide in a subacute toxicological experiment.

Materials and methods. In a subacute experiment, polyethylene glycol of molecular weight 400 (PEG-400) and polypropylene glycol of molecular weight 470 (PPG-470), synthesized by BARVA-Farm (Ivano-Frankovsk) were used. According to the study program, a subacute experiment was performed on white rats of the WAG population of both sexes (6-8 months) weighing 190-280 g and lasting 45 days. An aqueous solution of PEG-400 and PPG-470 was introduced into the stomach with a metal probe at a dose of 1/10 DL50 in the morning on an empty stomach in each group, there were 10 animals, both experimental and control. After euthanasia, the brain, liver, kidney was taken and fixed with 10% neutral formalin solution, carried out through a battery of spirits of increasing strength and filled in paraffin blocks. Micro-Med MC-2M was prepared with half-thin cuts (5-7 microns), stained with hematoxylin-eosin, and studied by light microscopy on a microscope Axiostar-plus (Zeiss, Germany).

Results. Glycols of ethylene oxide and propylene oxide when ingested orally enter the body as a protoplasmic poison. Morphological examination in the liver shows fatty degeneration. The



pronounced perivascular lymphoid infiltration along the periphery of the organ indicates the activation of protective processes at the local level. Sinusoids are wide with a large number of Kupffer cells. There are hepatocytes with very large nuclei and binuclear, as a consequence of the manifestations of compensatory regeneration processes, as well as with a rather depressed chromatin. Some cores are incorrectly oval, which can be observed with initial karyopycnosis and before cell death. In the kidneys in the proximal convoluted tubules, the epithelium is flattened, in some places, the apical poles of the cells are deformed, the nuclei are lysed. Crimped tubules have a destroyed upper part. There are very large hypertrophied glomeruli. Many macrophages. The glomeruli are irregular in shape. In the brain, the number of neurons is reduced. They have a hyperchromic core. Glial cells, neurons with signs of fragmentation, dominate. There is neuronal death, pronounced edema of the neuroglia. Also, the process of thrombus formation in capillaries is visible.

Conclusion. An analysis of the morphological studies of organs of white rats suggests that in the state of internal organs, marked morphological changes are observed under the influence of ethylene oxide and propylene oxide at a dose of 1/10 DL50, which can affect the functioning of the head, liver, and kidneys.

Bezrodnaya A., Mbonu F., Aladetoyinbo A.

INVESTIGATION OF ENZYME ACTIVITY UNDER THE CONDITIONS OF INFLUENCE OF SURFACE-ACTIVE SUBSTANCES IN RATS IN THE SUBACUTE TOXICOLOGICAL EXPERIMENT

Kharkiv national medical university
Department of Biological Chemistry
Kharkiv, Ukraine

Research advisor: prof. Nakonechna O.A.

Introduction. In connection with the wide use of surfactants in all spheres of vital activity of modern society, there is an undeniable threat of their negative influence on the metabolism, which is provided by enzymes. Alpha-amylase is one of the enzymes of the digestive system, which is synthesized mainly by pancreatic cells of the exocrine type and is responsible for the cleavage of complex carbohydrate components of food, starch and glycogen to simple carbohydrates (glucose). The key enzyme of anaerobic glycolysis is lactate dehydrogenase (LDH), which catalyzes the oxidation of lactic acid to pyruvate. Alkaline phosphatase is an enzyme-hydrolase that cleaves phosphate from many types of molecules, for example, nucleotides, proteins and alkaloids. Aim - determine the activity of alpha-amylase, lactate dehydrogenase and alkaline phosphatase in the blood of white rats under the influence of polypropylene glycol in a dose of 1/10 DL50.

Materials and methods. A subacute toxicological experiment was carried out in two groups of animals: control and experimental in the number of 10 white rats of the WAG population of both