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ABSTRACT
BOOK

Genetic Engineering

WHEN CHANCE
MEETS CHOICE

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252 Histopathology of the spleen due to exposure of polyethers in experimental study

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ABSTRACT TITLE: Histopathology of the spleen due to exposure of polyethers in experimental study

INTRODUCTION: Wide use of polyethers in the different fields of our lives dictates the need for thorough study of the impact of such chemicals on human's health. The immune system reacts sensitively to a concentration of chemical substances that are not yet toxic to other organism systems.

METHODS: We investigated 36 white Wistar rats which were divided into 6 groups – 3 control, day 7, 15 and 30 of administration. Rodents obtained water solution of tryglycidyl ether of polyoxypropylene triol (TEP) in a dose measuring 20 mg/kg 1/10 LD50 via gavage daily. After cervical dislocation the spleen was dissected and processed by standard way for histological examination. Sections were stained by hematoxylin eosin. Volume of red (RP) and white pulp (WP,%), number of lymphocytes (per 1000 μ m²), and lymphocyte diameter (mm) were evaluated using software Image ProPlus. Obtained data were processed using the software GraphPad. Reliable probability of error is taken less than or equal to 5% ($p \leq 0.05$).

RESULTS: The mean proportion of the experimental groups WP ranged from 15,64% to 38,12%. Statistically significant differences were observed only on 30st day of the experiment. In the control groups WP constituted 21.2 \pm 1.0% of the relative spleen volume and RP reached 78.84 \pm 1%. The number of lymphocytes in the investigated groups ranged from 20.97% to 34.03% in comparison with the control group treated with TEP showed a significant increase in lymphocyte number. The diameter of spleen lymphocyte in investigated groups varied between 2.98% and 3.36%. On day 15 we observed a significant increase in diameter.

CONCLUSION: The administration of TEP resulted in reduced relative proportion of white pulp in favor of red pulp, except day 30. The number of lymphocytes increased significantly in all experimented groups but their diameter was increased only on day 15 following administration of TEP. The results of our study determined structural alterations in the spleen structure after TEP administration which is probably causes alteration in the immune system. This data is useful to implement the mitigation of such chemical in wide use.