



POSTNATAL FORMATION OF LYMPH NODES OF OFFSPRING UNDER THE INFLUENCE OF PESTICIDES¹⁰

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Article history:	Abstract:
Received: August 17 th 2022 Accepted: September 17 th 2022 Published: October 20 th 2022	The developing immune system, along with the endocrine and nervous systems, is most sensitive to the effects of various environmental pollutants. Immunotoxicity of pesticides is a global problem, and our republic is no exception in this regard. In recent years, extensive research has been conducted around the world to identify the mechanisms of adverse effects of various types of pesticides on the immune system of humans and animals, to develop methods for early diagnosis of IV and their prevention. It should be noted that most of these studies were conducted in adults or mature animals. Uncovering the laws of growth and formation of the immune system of offspring in such conditions is of great scientific and practical interest.
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INTRODUCTION. To reveal the structural and functional characteristics of the postnatal growth of the immune system and the formation of peripheral organs of the offspring obtained under the influence of pesticides. Experiments were performed in white adult female rats treated with the pesticides lambda-cyhalothrin or fipronil during pregnancy and lactation, respectively. The offspring of experimental and control animals were examined by morphology, electron microscopy, immunohistochemistry and biochemical methods on the 3rd, 7th, 14th, 21st and 30th days after birth. It has been shown that the toxic effect of pesticide exposure during pregnancy and lactation is manifested in the form of growth retardation and the formation of peripheral immune organs - lymph nodes and spleen. In the mechanism of the toxic effect of pesticides on the peripheral immune system, the imbalance between cell proliferation and apoptosis caused by the direct toxic effect of drugs plays a leading role. mother and offspring. This requires early detection of hypothyroidism and oxidative stress in pregnant women and newborns, and their subsequent pharmacological correction.

It was to determine the structural and functional characteristics of the growth and the formation of the peripheral organs of the immune system of the offspring obtained through the mother's organism under the influence of pesticides.

Experiments were performed on white mature nulliparous female Wistar rats weighing 150-180 g, mature male rats were used only for insemination. Female rats were divided into three groups of 45 rats each. Lambda-cyhalothrin (LCT) diluted in physiological solution was administered orally to the

first (experimental) group of rats at a rate of 8 mg/kg/day by gavage. The second (experimental) group of rats was similarly administered fipronil (FPN) at a dose of 3.6 mg/kg/day, which was 1/100 of the LD50 of the drug. The third group (control) received an equal volume of sterile saline. Both pesticides were administered to experimental groups of rats daily for 75 days until the end of the experiments. On day 31 of the experiments, females from all groups mated with males for insemination. The beginning of pregnancy was observed by the presence of spermatozoa in vaginal tampons.

Studies have shown that exposure to pesticides through the mother's body causes significant postnatal growth retardation and the formation of mesenteric lymph nodes (MDR) in the offspring. Compared to controls. In addition, the slowing of the formation of MDR zones was more pronounced with FPI intoxication compared with LST exposure. Electron microscopic studies revealed high functional activity of macrophages and destructive changes in subcellular organelles of lymphoid cells.

The immunotoxic effect on the developing immune system of offspring in the conditions of ingestion of pesticides through the mother's organism can be carried out by several mechanisms. It cannot be denied that this is the result of the direct toxic effect of pesticides and their metabolites on the immune cells of the developing organs.

However, as our previous studies have shown, pesticides cause significant changes in the hormonal homeostasis of the mother. and progeny organism as well as distinct oxidative stress. First of all, it is necessary to emphasize the effect of pesticides that



destroys the thyroid gland, which leads to hypothyroidism in the mother and the offspring. Thyroid hormones play an important role in regulating cell proliferation and apoptosis.

A decrease in the level of thyroid hormones together with the accumulation of free radicals formed under oxidative stress inhibits cell proliferation and at the same time stimulates their death process, apoptosis. This imbalance between proliferation and apoptolymphoid cells in the peripheral organs of the immune system is the main mechanism that leads to the slowing down of the formation of the structural and functional zones of MDR and Cel.

A more pronounced slowing down of the rate of formation of T. -dependent zones of organs compared to these B-dependent zones, in our opinion, is explained by the violation of hormone-producing IT-lymphopoietic functions of the thymus. Hypothyroidism and oxidative stress also play a leading role in the basis of these diseases, which leads to a violation of the balance between the processes of proliferation and apoptosis.

In this way, the obtained data show that the exposure of pesticides to the external organism (in utero and through the mother's body) leads to serious complications in the postnatal period and the establishment of peripheral organs (MLU and Sel) in the immune system. Oni proyavlyayutsya v vide zamedeniya rosta i formirovaniya lymphoidnoitkani organov i ix strukturno-funktsionalnyxzon.

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