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## PESTICIDE NTUROTOXICITY AS A MEDICAL AND ENVIRONMENTAL PROBLEM

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Nowadays the redundancy of environmental pollution caused by chemicals makes it possible to consider the chemical factor as universal and one of the leading ones within the problem of human ecology. The purpose of the study is to assess the effect of various pesticides as an environmental factor on the central nervous system of a person. First of all, chemical factor includes pesticides, the production and use of which poses a potential danger to public health. Such a fact is confirmed by many man-made disasters that have already arisen: a toxic gas leak at a pesticide plant in the city of Bhopal (30,000 people died, more than 120,000 people subsequently suffered from 530 neurological and mental disorders); about 1000 people were poisoned with watermelons processed with Aldicarb in 1985 in California; 4,500 people were fatally poisoned due to consuming bread processed with seeds treated with Hexachlorobenzene in Anatolia. The terrible consequences of these catastrophes are only minimal known data compared to the general harm of pesticides to human health. According to estimates, in 2002 the global consequences of pesticides' influence, which could have been prevented, manifested in death of 186 thousand people and led to an increase in the DALY indicator up to 4,420,000 (years of life lost due to disability). It is worth noting that most of the pesticides are neurotoxic. It may be mediated by the manifestation of damage to other organs and systems, or due to the direct action of a substance on the nervous system. Therefore, almost any acute intoxication in one degree or another is accompanied by impaired functions of the nervous system. According to the WHO classification, pesticides are classified according to the degree of toxicity. For consumer demand, it is more convenient to classify them by chemical composition. The most commonly used chemicals are known to be organochlorine and organophosphorus compounds, carbamates, chloracene as well as pyrethroids. Pesticides enter the human body

directly with the poisoned fruits consumed. Many domestic animals are poisoned by pesticides, thus, the meat and milk obtained from these animals are also poisoned with harmful substances. In addition, some of the pesticides are washed into the water. In this case, they get in the body when eating fish or consuming polluted water. The other ways of poisoning may be the aerogenic and contact path of impact. All organochlorine pesticides have the same effect on the central nervous system. By accumulating in human adipose tissue, they disturb the lipid balance of the membranes of nerve cells and prevent the passage of nerve impulses. The intoxication manifests in headache, weakness, nausea, changes in the nervous system such as polyradiculoneuritis, encephalomyelopathy, autonomic neurosis with symptoms of toxic polyneuritis. All organophosphorus compounds and carbamates inhibit anticholinesterase. The characteristic symptoms of poisoning correspond to those of a cholinergic crisis. The mechanism of action of chloracetylcholinesterase inhibitors aim to block the enzymes containing sulfhydryl groups; such a block leads to the suppression of oxidative phosphorylation, and consequently to the violation of protein synthesis (nitrogen metabolism). The clinical picture of an acute poisoning includes ataxia, convulsions, tremor, salivation, diarrhea. Pyrethroids disrupt the exchange of sodium and calcium ions during the passage of a nerve impulse through the synaptic cleft, which can lead to nausea, vomiting, diarrhea, hyperexcitability, tremors, convulsive twitching, bloody tears, and incontinence. Findings. Due to the global use of pesticides, these chemicals have developed a harmful effect on the human body, primarily on the central nervous system. Depending on the chemical composition, the mechanism of their influence and, as a result, the clinical picture of intoxication may be different.