

Results and discussion When calculating the health risk assessment in accordance with the «Guidelines for assessing the health risks of the public when exposed to environmental pollutants» (P. 2.1.10.1920-04), the following results were obtained: a risk profile for the development of non-carcinogenic effects with combined and complex effects chemical compounds is based on the calculation of the hazard index. In conditions of combined exposure, the total hazard index characterizes the risk of adverse effects on the critical organ (system). The total index of the hazard of exposure to the respiratory organs was 6.52, on the organs of the cardiovascular system 0.4; eyes 3.2. Thus, if the hazard index of substances does not exceed one, then the probability of human development of harmful effects during daily intake of a substance during life is insignificant and such an impact is characterized as permissible if it exceeds, then the probability of harmful effects in humans increases in proportion to the increase in the hazard index, however it is impossible to accurately indicate the magnitude of this probability. The complex effect of pre-threshold levels of chemical air pollution can affect the morbidity of the pulmonary system of the inhabitants of the Amur Region.

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INFLUENCE OF DRINKING WATER QUALITY ON THE FORMATION OF NON-INFECTIOUS DISEASES OF THE DIGESTIVE SYSTEM IN THE AMUR REGION

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Abstract The Amur Region is part of an extensive biogeochemical province in the Russian Far East characterized by a pronounced deficiency of biogenic elements in environmental objects. The geochemical situation in the region is most affected by the chemical composition of drinking water in the water supply systems of the population. Drinking water has a low content of calcium, fluoride, magnesium, potassium on a background of low overall hardness and high iron content.

Key words: drinking water quality, digestive system

Pollution of drinking water with chemical substances of technogenic origin is considered to be the priority factors that form negative trends in the prevalence of diseases of the digestive system [1]. According to the Ministry of Health of the Russian Federation, the disease of the digestive system as a whole in Russia is 3568.0 per 100 thousand people, in the Far East, 4263.2 per 100 thousand people, the Amur Region is «leading» in this indicator, where the incidence in 2016 was 9690.2 per 100 thousand people [2].

Thus, the territory of the Amur region is characterized by steady growth and a high incidence of non-infectious pathology of the digestive system. According to the scientific literature it is supposed that the leading factors of the risk of diseases of the digestive system can be regional features of the natural mineral composition of water in drinking water supply systems. The issues of assessing the dependence of the health status of the population

on the quality of the habitat in the developed on the territory of the Amur region are especially relevant.

Objective To establish the ecological and epidemiological component of the formation of the primary incidence of somatic pathology of the digestive organs of the population in the Amur Region.

Materials and methods The work used information about samples of drinking water, primary morbidity of the population with somatic pathology of the digestive organs, the following institutions and organizations of the region: the Amur Regional Center for Hydrometeorology and Environmental Monitoring, the Department of Rospotrebnadzor for the Amur Region, the territorial agency of the Federal State Statistics Service for the Amur Region, Amur Medical Information and Analytical Center; as well as a set of statistical analysis methods: paired and multidimensional correlation analysis by Pearson and Spearman, multidimensional linear regression analysis/

Results and discussion According to the office of Rospotrebnadzor for the Amur Region, the chemical composition of the natural waters of the Amur Region is primarily formed under the influence of natural factors characteristic of the Far Eastern region: physical and geographical and hydrological conditions, geochemical natural background lead to the fact that the drinking water of the water supply systems in the region is characterized by a high content iron (in some areas exceeding 5 MAC (maximum allowable concentration)) and manganese [3].

Concentrations of other chemicals do not exceed the MAC. The regional features of drinking water also include its low mineralization and a pronounced shortage of nutrients.

At present, the calculation of the health risk assessment is carried out in accordance with the «Guidelines for the assessment of the health risks of the public when exposed to pollutant chemicals» (P. 2.1.10.1920-04). Thus, the pathogenic effect of drinking water on the digestive organs of the population of the Amur region is possible.

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ANTIOXIDANT PROPERTIES OF REAMBERIN IN THE CONDITIONS OF ACUTE NEUROSURGICAL PATHOLOGY

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Summary. Studied the antioxidant activity of reamberin in acute neurosurgical pathology: 13 patients with standard therapy received the drug reamberin (Polysan, St.Petersburg, Russia) intravenously 400 ml of the solution for infusion of 1,5% at a rate of 90 drops/min (1-4,5 ml/min) 1 times a day; 10 patients (control group) received only standard

therapy. Efficacy was evaluated by the content of lipid hydroperoxides, diene conjugates, malonic dialdehyde and activity of the major components of the antioxidant system (ceruloplasmin, vitamin E) in blood of patients. The introduction of reamberin patients contributed to a significant decrease in plasma lipid hydroperoxides on 7%, diene conjugates – by 6%, malonic dialdehyde – on 12% compared with patients in the control group. While analyzing the effect of the succinate containin drug on the activity of components of antioxidant system it was found that the levels of ceruloplasmin in the blood was higher than in patients of control group in 16%, vitamin E – 9%. Thus, the inclusion of reamberin in the treatment of patients with acute traumatic brain injury should be considered as pathogenetically justified, clinically justified and promising.

Key words: reamberin, traumatic brain injury, lipid peroxidation, lipid hydroperoxides, diene conjugates, malonic dialdehyde, antioxidant system, patients.

Today, the problem of craniocerebral trauma remains relevant, as it affects up to 2% of the population annually. In recent decades, not only the number of craniocerebral injuries has been increasing, but also their more severe course. An urgent task of critical care medicine is the search for effective drugs, contributing to the maintenance of adaptive reactions in the course of traumatic disease and improving outcomes trauma. The action of the multi-component drug Reamberin is aimed at eliminating tissue hypoxia, normalization of impaired tissue metabolism, elimination of toxic products, which has been used in various fields of medicine. In our opinion, the possibility of Reamberin use in acute neurosurgical pathology is promising, which was the basis for this study.

Materials and methods. The patients were divided into 2 groups: 10 patients (control group) received only standard therapy; 13 patients with standard therapy received the drug reamberin (Polysan, St.Petersburg, Russia) intravenously 400 ml of the solution for infusion of 1,5% at a rate of 90 drops/min (1-4,5 ml/min) 1 times a day. Efficacy was evaluated by the content of lipid hydroperoxides, diene conjugates, malonic dialdehyde and activity of the major components of the antioxidant system (ceruloplasmin, vitamin E) in blood of patients. The results obtained were subjected to statistical analysis with calculation of parametric criteria Student.

As a result of the studies, it was found that in the group of patients receiving standard therapy, the content of lipid hydroperoxides at stage II (after treatment) was significantly lower than the similar index at stage I (before treatment) by 8.4% ($p < 0.05$), diene conjugates by 11.4% ($p < 0.01$), malonic dialdehyde by 10.6%. In the group of patients treated with standard Reamberin therapy, the level of lipid hydroperoxides was significantly lower by 11.3% ($p < 0.05$) compared to the indicator before treatment, diene conjugates – by 10%, malonic dialdehyde – by 15.8% ($p < 0.05$). The introduction of reamberin patients contributed to a significant decrease in plasma lipid hydroperoxides on 7%, diene conjugates – by 6%, malonic dialdehyde – on 12% compared with patients in the control group. While analyzing the effect of the succinate containin drug on the activity of components of antioxidant system it was found that the levels of ceruloplasmin in the blood was higher than in patients of control group in 16%, vitamin E – 9%.

Thus, the inclusion of reamberin in the treatment of patients with acute traumatic brain injury should be considered as pathogenetically

justified, clinically justified and promising.

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USE OF NATURE ADAPTOGENES FOR BIO-REGULATION OF ORGANISM IN CONDITIONS OF LOW AND HIGH TEMPERATURES

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Abstracts They use digidroverzitin and pants of dabbed deer for adaptation of warm-blooded organism towards of pathogenic influence of cold and heat. They following mixture of substances possesses huge antioxidant activity and is safe according to the criteria of ecological and hygienic concept of human nutrition.

Key words

Pants, digidroverzitin, adap-