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(54) METHOD FOR EARLY DIAGNOSIS OF VIOLATION OF CHILDREN ADAPTATION UNDER CHEMICAL HAZARDS OF ENVIRONMENTAL FACTORS

(57) Abstract:

FIELD: medicine.

SUBSTANCE: areas highly exposed to harmful chemical agents are chosen. A random group of children without clinical signs of living in this territory is tested using chemical laboratory tests of blood to identify the content of chemical compounds, which are priority chemical environmental factors on the selected area of residence and clinical and laboratory studies are conducted to determine a set of laboratory indicators of adaptation system. Then using the results of the study the average values of chemical compounds in the blood are fixed and then they are compared to the background and average values for each of the above laboratory parameters are fixed and compared to the physiological norm; deviation of this value from the normal rate reveals children bodies response to chemical exposure. Next, a causal relationship is established between the level of content of chemical compound in the blood and the response of the child body through deviation of laboratory parametres from the norm using a logistic regression model. Using method based on analysis of odds ratios the maximally inactive level of marker of exposure and corresponding response marker based on the conditions are determined under which the odds ratio that characterises the degree of the connection between exposure to a chemical compound and the body's response will be greater than or equal to one; for this a model of dependence between the level of a marker of exposure and the specified index odds ratio is designed, the parametres of the model are determined and they reflect the change in the probability using which the value of the maximally inactive level of marker of exposure is calculated, i.e. maximum ineffective concentrations of chemical compounds. From the entire spectrum of defined concentrations of certain chemical compounds for each laboratory parametre of adaptation systems choose the smallest value that is accepted as the maximally inactive concentrations C^i_{max} on a child adaptation system for a given chemical compound i. In future diagnosis of violation of adaptation of children living in the selected area is performed by comparing the content C^i of certain chemicals in

RU 2419795 C1

RU 2419795 C1