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**DIAGNOSIS OF ACUTE RADIATION DISEASE BY ENZYME IMMUNE-ASSAY (EIA)**

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Diagnosis of the acute radiation disease by the method of immune enzyme assay is a simple and efficient tool of evaluating and biological dosimetry and forecasting of development of the acute radiation defeats as at group of population so at individuals locating in the zone polluted by the radiation. We use as biological markers the group of essential radiotoxins - high molecular mass glycoprotein ( molecular mass – 200 – 250 kDa ) – radiation antigens (SDR – specific radiation determinant ) accumulated in the lymphoid system. with epitopes specific to each form of radiation syndrome, after animals have been irradiated in doses inducing the development of the cerebral (1) , toxic ( 2), gastrointestinal ( 3 ) and typical ( 4 ) forms of acute radiation sickness. These two phenomena allowed us to develop a technologies for diagnosis, prophylaxis and therapy of radiation disease – enzyme immune assay ( EIA ), antiradiation vaccine, antiradiation serum, method of immune-lymph-plasmosorption. The important first step in effectiveness of therapy is an accurate assessment of severity of disease in early period after irradiation. The ideal markers for early and accurate assessment is high weight glycoprotein with specific radiation induced features (SDR) mentioned above. This biology active substance isolated from lymph can induce the symptoms of radiation syndrome without previously radiation when it is administrated intramuscularly or intravenously to healthy animals. Enzyme immune assay (EIA) allowed researchers to indicate the significant levels of different forms of SDR in peripheral blood of animals in first 24 hours after radiation. Indication of high level of SDR -1 allowed to forecast a fast development of cerebral form of acute radiation disease. Determination of high levels of SDR-2, SDR-3 and SDR-4 in peripheral blood allowed to recognize early periods of toxic, gastrointestinal and typical forms of acute radiation sickness. Recognition of significantly high levels of SDR-4 is important for assessing radiation risks of mild typical radiation diseases (SDR-4/1), of moderate typical radiation diseases (SDR-4/2), of severe typical radiation diseases ( SDR-4/3), of extremely severe typical radiation diseases (SDR-4/4). The important goal of early assessment with enzyme immune assay is the accurate description of started disease and most effectively managed therapy. The SDR EIA kit is a complete kit for the quantitative determination of different forms and levels of SDR -1, SDR-2, SDR-3, SDR-4 in a serum. This kit is a solid phase sandwich ELISA using 4 kinds of high specific antibodies. Visual assessment utilizes a 4 point scale (++++). The test was considered positive if the assessment was (++) or higher. Positive test allowed us to detect the presence and severity of radiation injury by identifying SDR forms and each from them was specific for different radiation energy and depended on a volume of absorbed doses of radiation.