

EFFECTS OF HELIOGEOMAGNETIC DISTURBANCES IN HAEMORHEOLOGICAL PARAMETERS OF HUMAN

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The changes of the rheological characteristics of blood at the healthy people and in the patients with cerebrovascular pathology during 23 geomagnetic disturbances were studied. The analysis of dynamics of haemorheological parameters of both human groups has shown that the most of parameters are beginning statistically authentically to fall outside the normal limits already prior the beginning of the magnetic disturbance, others - per day of a beginning of disturbance. This fact specifies at an increase of fibrinogen concentration and the variability of functional platelets activity and of markedly enhanced red cells (RBC) aggregation in conditions of geomagnetic disturbance and allows to assume presence of direct influences of an environmental physical processes of haemorheological functions. The deterioration of RBC-deformability and the activation of platelets is observed in the patients with cerebrovascular pathology. The analysis of the data has resulted in occurrence of a hypothesis about appearance of instability at platelet –vascular part of haemostasis under influence of variation of electromagnetic field in during of magnetospheric disturbances.

Such effect can be caused as direct and indirect action of an electromagnetic field of the Earth on the cells of blood. Haemoglobin of erythrocytes includes atoms of iron, having a deflection of the magnetic moment. In the cells, which had their erythrocytes membrane under influence of an electromagnetic field, had diminution of electrical mobility that can influence the dynamics of physiological process of aggregation - disaggregation of red cells in a stream of blood.

Another channel of influence of geomagnetic disturbances on rheological property of blood can be connected with the action of electromagnetic fields through synchronization of rhythms of electromagnetic cells oscillations in central nervous system. From the entire spectrum of an electromagnetic field apparent on the surface of the Earth, biologically effective factor is in a range of ultra low frequencies from 0,0001 up to 100 Гц. The biorhythms of the brain, such as an alpha, beta, delta, tetra and gamma rhythms are characteristic for the man in this range. At the development of the resonant phenomena there is a stressful reaction that conducts to increase of concentration of catecholamines in the blood and activation of red cells and platelet aggregation.