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THE EFFECT OF MICROWAVE RADIATION OF LOW INTENSITY ON RED BLOOD CELLS AT ISCHEMIC STROKE

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ABSTRACT

The development of mobile communication, radar, as well as other information and energy transmission systems leads to an increase in the total level of electromagnetic radiation of different frequency ranges, intensity and modes of generation in the environment [1]. The frequency applied in the present work (36.64 GHz) belongs to the *Ka* band (27–40 GHz) used in different radar systems [2]. The study involved 10 patients aged 38-40 years who underwent ischemic stroke. The control group consisted of 10 healthy donors of the same age. The aqueous suspensions of RBCs have been exposed in EMF with frequency 36.64 GHz, the power density was 1 W/m², exposure – 30 sec and their complex dielectric permittivity have been estimated by ultra-high frequency dielectrometry with frequency 9.2 GHz [2]. Statistical processing of the measured data was performed using the methods of variation statistics. The investigation of the cells after exposed to microwave radiation does to increase the effect changes in the viscosity of the plasma membrane and, as a consequence, indicate a change in the amount of free-bound water in the cells and the ability of cells to adequately respond to stress.

Keywords: microwave radiation, red blood cell, permittivity

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