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Title

Role of NO-synthase in reaction of endothelium and changes in peripheral perfusion under the influence of electromagnetic terahertz waves at frequencies of nitric oxide in albino rats in a state of acute stress

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Abstract

Study of the mechanism of corrective action of terahertz waves at the frequencies of molecular emission and absorption spectrum of nitric oxide 150.176 -150.664 GHz is presented. The effect of the of terahertz waves on skin microcirculation perfusion disorders and state of the endothelium in white male rats during acute immobilisation stress is investigated. To study the mechanism of the positive effect of the terahertz waves on the microcirculation in male rats exposed to acute immobilisation stress, the rates of skin microcirculatory perfusion during irradiation for 30 minutes against the introduction of L-NAME, the nonspecific inhibitor of NO synthase, are studied. The absence of the normalising effect on perfusion parameters after 30-minute irradiation with the terahertz waves in the microcirculatory bed of animal skin, in a state of acute immobilisation stress on the action of the inhibitor of endothelial NO-synthase L-NAME. The absence of influence of terahertz waves at reduced amplitude of oscillations of endothelium in animals in a state of acute stress, the introduction of L-NAME indicates that at the blockade of endothelial NO-synthase, THZ-irradiation is unable to restore basal nitric oxide production by endothelial cells. Lack of dynamics in the termoprobes of animals in the state of acute stress against the background of administration with L-NAME under the influence of THZ-irradiation leads to the conclusion that the blockade of NOS terahertz waves do not encourage induced production of endothelial NO. The data obtained indicates that the role of endogenous nitric oxide and endothelial NO-synthase in the mechanisms of potentiation of the positive corrective effect of irradiation at the frequencies of nitric oxide 150.176 -150.664 GHz impaired microcirculatory perfusion indices of skin and endothelial function in white rats during acute immobilisation stress. (12 References).