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Abstract

Stress can lead positive or negative effect on the body, depending on the duration and intensity of stress. Prolonged stress will cause neurodegenerative disease or cognitive impairment through disruption in brain neurotransmitter systems, biomolecular level of the brain, and brain metabolism. Potential Regulation of Glucose Transporter-1 (GLUT1) in the blood-brain barrier responds to various stress-related brain pathological conditions. The purpose of this study is to explain the influence of chronic stress intensity towards expression of glucose transporter-1 in the brains of rat. This study used 30 rats (Rattus norvegicus) male wistar strain which divided into 3 groups: control group (K0), the treatment of swimming training in severe intensity (K1) and swimming training in mild intensity (K2). Examination was conducted on GLUT1 expression in endothelial cells of the brain that be observed using immunohistochemical staining techniques. The results showed that there was depletion of GLUT1 expression in brain endothelial due to swimming training in severe intensity and swimming training in mild intensity. GLUT1 expression depletion in brain endothelial of severe intensity group was greater than in mild intensity group with p <0.05. (FMI 2012;48:24-27)

Keyword : GLUT1, glucose, transporter-1, chronic, stress, brain,

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