




Abstract

Selective Biomarkers of Oxidative Stress in Ischemic Stroke †

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Abstract: Stroke is a serious health problem all over the world and the second most common cause of death and permanent disability in people, after heart attacks. Oxidative stress plays an important role in the pathogenesis of acute ischemic stroke (AIS). The aim of our study was to evaluate the temporal profile of the melatonin metabolite 6-hydroxymelatonin sulphate (6-SM) in the urine and carbonyl groups in the serum of patients with acute ischemic stroke treated with intravenous thrombolysis. There were statistically significant differences between the values of 6-SM and carbonyls compared to the control group. Statistical differences were also found in the concentrations of the examined parameters depending on the type of stroke. The correlations between the concentrations of 6-SM and the carbonyl groups measured in various time intervals and between the concentration of biomarkers and mortality was also evaluated. The results indicate increased oxidative stress and the intense increase in the concentration of carbonyl groups in patients with AIS, which could be potential markers of protein damage in thrombolytic patients. Melatonin supplementation in AIS patients can also be considered, as it can effectively prevent both behavioral and neurophysiological defects caused by cerebral hypoxia and ischemia.

Keywords: ischemic stroke; biomarkers; melatonin; carbonyl group

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