Abstract

Prolonged ischemia followed by reperfusion causes severe damage to tissues and organs and in clinical conditions such as stroke, trauma, etc., which reduces blood supply and oxygen uptake and tissue damage. The aim of this study was to investigate the effect of acetyl L-carnitine and adenosine receptor antagonist on oxidative stress induced by ischemia-reperfusion in rat brain. Thirty healthy and adult rats were purchased and underwent central cerebral artery occlusion surgery. They were divided into 5 control groups: healthy, negative control group, ischemia-treated group with acetyl L-carnitine, ischemia-treated group with acetyl L-carnitine and caffeine and group ischemia-treated mice with acetyl L-carnitine And adenosine antagonists were divided. Acetyl L-carnitine was administered orally at a dose of 100 mg / kg and adenosine receptor antagonist at a dose of 10 mg / kg. At the end, the levels of malondialdehyde, catalase, interleukin and alanine transferase and aspartate transaminase enzymes were measured by available kits. The results showed that the level of malondialdehyde in the control group was significantly lower than the acetyl L-carnitine and adenosine antagonist group. Catalase was significantly higher in the control group than the acetyl L-carnitine and adenosine antagonists. The highest amount of interleukin was in the acetyl-carnitine and caffeine group and the lowest in the healthy control group. The highest alanine aminotransferase was in the acetyl-carnitine and caffeine group and the lowest in the negative control group. The highest levels of aspartate transaminase were in the acetyl L-carnitine and caffeine group and the lowest in the healthy control group. It can be concluded that acetyl L-carnitine and adenosine antagonist have a protective effect on ischemic complications.

Keywords: acetyl L-carnitine, adenosine receptor antagonist, oxidative stress, ischemia-reperfusion

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