Abstract

Jasna Simicic [1], Ivan Čapo [1], Milan Popović [2] Dejan Miljković [2]

[1,2] Medical Faculty, University of Novi Sad, Novi Sad, Serbia

Supplemental carnosine positively affects brain tissue in the experimental model of autoimmune encephalitis (AIE) in mice

BACKGROUND: L-Carnosine (b-alanyl-L-histidine) is a dipeptide, widely present in excitable tissues, such as muscle and neural tissue, and has been shown to have a direct and indirect antioxidant effect, but its role in the brain remains unclear. Data suggests the possible neuroprotective potential of carnosine in vitro and in vivo models.
PURPOSE: The objective of this study was to determine glio and neuroprotective potential of l-carnosine in vivo animal model of autoimmune encephalitis in mice
METHODS: C67BL/6 mice underwent AIE and were treated with carnosine (420mg/kg) or saline per os once daily during 20 days until sacrifice. Histological characteristics of brain tissue were assessed. To determine demyelinating areas we have used immunohistochemical staining to myelin basic protein (MBP). Infiltration with a mononuclear inflammatory infiltrate is detected by immunohistochemical staining on CD68.
RESULTS: Qualitative analysis of the tissue characteristics in carnosine group showed weaker inflammatory infiltrate, as well as a smaller number of demyelinating areas positive for MBP. L-carnosine produced a potentially significant neuro and glioprotective potential compared to the control group that received saline.
CONCLUSIONS: The results highlight the potential of L-carnosine as a neuroprotective agent in autoimmune encephalitis model in mice