**Neurotrophic effect of hydroalcoholic extract of Malva neglecta leaf on pyramidal neurons of CA1 hippocampus of male Wistar rat following ischemia /reperfusion**

**Abstract**

**Background: Stroke is the second leading cause of death in the world and has irreversible consequences. Cerebral ischemia/reperfusion (I/R) through production of oxidants and inflammatory markers causes apoptosis of brain neurons. On the other hand, in various studies, the antioxidant and anti-inflammatory effects of the Malva neglecta have been proven. Therefore, in this study, we investigated the protective effect of hydroalcoholic extract of Malva neglecta leaf on pyramidal neurons in the CA1 region of the hippocampus of male Wistar rats following ischemia-reperfusion.**

**Methods: In this experimental study, we divided 24 Wistar rats weighting 350-300 gr randomly into four groups (n=6) as control, Ischemia/reperfusion (I/R), I/R+ hydroalcoholic extract of Malva neglecta leaf was injected intraperitoneally (300 &600 mg/kg 0-24-48-72 hour after the ischemia). The ischemic model was performed by clamping the bilateral common carotid arteries (BCCA) for 20 minutes to induce ischemic injury. After 4 days all groups were sacrificed and brain sections were stained by Nissl and evaluated by light microscope. P<0.05 was assumed as statistically significant.**

**Results: The results showed that ischemia / reperfusion in the brain for 20 minutes caused degeneration of pyramidal cells in the CA1 region of the hippocampus and the ischemia group showed a significant decrease (P <0.05) compared to the control group. Malva neglecta injection at a dose of 600 mg / kg largely preserved the neurons and was not significantly different from the control group (P = 0.107).**

**Conclusion: The use of hydroalcoholic extract of Malva neglecta leaf at a dose of 600 mg / kg prevents the reduction and death of neurons in the CA1 region of the hippocampus following ischemia-reperfusion in the brain of Wistar rat. Malva neglecta extract can be used as an effective agent in preventing or reducing the complications of stroke alone or with other drugs.**

**Keywords: Neuroprotective effect, Malva neglecta, Hippocampus, Ischemia/reperfusion, Rat**

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