Survey on pre-feeding effect of hydroalcoholic extract of Origanum vulgare on blood-brain barrier (BBB) permeability and neurologic deficits in rat stroke model

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Abstract

Background & aims: *Natural antioxidants increase the stength of plasma antioxidants and decrease the risk of diseases such as cancer, heart attack and stroke. Therefore this study is conducted to investigate the effect of hydroalcoholic extracts of Origanum vulgare on blood-brain barrier (BBB) permeability and neurologic deficits.*

Methods: *This is an experimental study on 35 male Wistar rats which divided randomly into 5 groups of 7 members. Control group received distilled water and 3 groups received hydroalcoholic extract of Origanum vulgare with 50, 75 and 100 mg/kg doses through gavage feeding for 30 days. Sham group received no treatment and Ischemia induction. Two hours after the last gavage feeding of the first 4 groups, Middle Cerebral Artery Occlusion (*MCAO*) operation was done on the subjects for 60 minutes and blood-brain barrier (BBB) permeability and neurologic deficits were investigated.*

Results: *Findings show that Origanum vulgare extracts in all three doses (50, 75, 150 mg/kg) decrease the blood-brain barrier permeability and neurologic deficits. ($P< 0.05$)*

Conclusion: *It seems that Origanum vulgare extracts has preventive effects on stroke due to having antioxidants compounds.*

Keywords: *Origanum vulgare, antioxidants, blood-brain barrier permeability, neurologic deficits*