

European Stroke 2020: The Effect of Olive Leaf Extract on the Attenuation of Ischemic Brain Damage in Rat

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Introduction:

This study was designed to investigate whether the olive leaf extract (OLE) are effective in a thromboembolic model of stroke in rat.

Methods:

Olive leaf aqueous extract 500 mg/kg for 7 days were administered prior to stroke induction. Behavioral and neurological scores, brain edema, infarct volume, the level of tumor necrosis factor-alpha (TNF- α), malondialdehyde (MDA), catalase activity (CAT), and superoxide dismutase (SOD) changes were determined in the ipsilateral cortex 24 hr. after embolization.

Results:

Treated animals with (OLE) significantly showed brain infarction in a smaller size and less ipsilateral hemisphere edema in comparison with the control group. Moreover, SOD and CAT values were significantly decreased and the level of MDA was increased after stroke induction. The extract administration also improved changes in biochemical markers of oxidative stress and TNF- α induced by stroke. The group receiving (OLE) indicated less neurological and behavioral abnormalities in comparison to the control group.

Our findings proved the effectiveness of olive leaf aqueous extract in thromboembolic model of stroke which is most probably due to the olive leaf extract antioxidant properties. Olive leaf aqueous extract 500 mg/kg for 7 days were administered prior to stroke induction. Behavioral and neurological scores, brain edema, infarct volume, the level of tumor necrosis factor-alpha (TNF- α), malondialdehyde (MDA), catalase activity (CAT), and superoxide

dismutase (SOD) changes were determined in the ipsilateral cortex 24 hr. after embolization brain infarction in a smaller size and less ipsilateral hemisphere edema in comparison with the control group. Moreover, SOD and CAT values were significantly decreased and the level of MDA was increased after stroke induction. The extract administration also improved changes in biochemical markers of oxidative stress and TNF- α induced by stroke. The group receiving (OLE) indicated less neurological and behavioral abnormalities