Journal of Basic & Clinical
PATHOPHYSIOLOGY

Vol. 7, Supplement 1, Autumn-Winter 2019-2020
p-ISSN: 2322-1895 e-ISSN: 2345-4334

Proceedings of

24th Iranian and 3rd International Congress of

Physiology and Pharmacology

(FAOPS Satellite Congress)

30 Oct - 01 Nov 2019

Shahed University, Tehran, Iran

A Semiannual Publication of
Shahed University

Neuroprotection of Iranian brown propolis on ischemic neuronal damage in mice: a potential antioxidant property

Gholamreza Bazmandegan[1], Zahra kamiab[2], Mohammad Ali Zakeri[3], Mitra Abbasifard[4], Hussein esmaeili noroozi[5]

1. Physiology-Pharmacology Research Center, Rafsanjan University of Medical Sciences, Rafsanjan, Iran
2. Clinical Research Development Unit, Ali-Ibn Abi-Talib Hospital, & Department of Social Medicine, School of Medicine, Rafsanjan University of Medical Sciences, Rafsanjan, Iran
3. Clinical Research Development Unit, Ali-Ibn Abi-Talib Hospital, Rafsanjan University of Medical Sciences, Rafsanjan, Iran
4. Department of Internal Medicine, Ali-Ibn Abi-Talib Hospital , Rafsanjan University of Medical
5. Clinical Research Development Unit, Ali-Ibn Abi-Talib Hospital, Rafsanjan University of Medical Sciences, Rafsanjan, Iran

Background and Objective: Oxidative stress plays a key role in ischemic neuronal damage. Superoxide dismutase (SOD), glutathione peroxidase (GPx) and malondialdehyde (MDA) are considered as oxidative stress biomarkers. Propolis is a resinous hive product consisting phenol compounds with a set of biological activities. In the this study, the effect of Iranian Brown Propolis (IBP) was evaluated on oxidative stress responses in a mouse model of permanent middle cerebral artery occlusion (MCAO).
Materials and methods: The water extracts of propolis (WEPs) were obtained from two regions of Iran. The chemical description and total phenol content were determined by GC-MS and Folin–Ciocalteu assays respectively. Experimental groups included surgical sham group, control group and six groups of WEPs-treated animals. The WEPs were injected at the doses of 30, 100 and 200 (mg/kg, IP), during four different time points. Oxidative stress biomarkers (MDA content, SOD and GPx activity) and infarct volume were measured 48 h post stroke. Behavioral tests were evaluated 4 and 48 h after stroke.
Results: Samples were not considerably different in concentration of the total polyphenol substances. In doses of 100 and 200 mg/kg of both samples, WEPs treatment resulted in significant recovery of SOD and GPx activity as well as MDA level. Infarct volume, in treated groups, was significantly lower versus control group. Sensory-motor impairment and neurological deficits were improved significantly as well.
Conclusion: IBP prevent the ischemic brain injury and this seems to be mediated by its antioxidant properties.
Keywords: Cerebral ischemia, Iranian Brown propolis, Neuroprotection, Oxidative stress

P-137

Effects of Lavandula officinalis hydroalchoholic extract on mouse reserpine induced depression

Banafsheh Bagheri[1], Batool Rahmati[2], Faezeh Ghozatloo[1] , Mohsen Khalili[2]

1. Department of Physiology, School of Medicine, Shahed University, Tehran, Iran
2. Neurophysiology Research Center, Shahed University, Tehran, Iran

Background and Objective: Lavandula officinalis commonly is known as Ustokhoddus in Iran, recommended for depression disease in Iranian traditional medicine. This study was designed to determine the effects of L. officinalis extract on mouse model of reserpine induced depression.
Materials and Methods: Seventy-two mice were randomly divided into 9 groups: Normal saline, control extract (200 mg/kg), reserpine, fluoxetine (10 mg/kg or 20 mg/kg) + reserpine, fluoxetine (10 mg/kg) + extract (200 mg/kg) + reserpine, Three extract pretreated groups (100-200 and 400 mg/kg) + reserpine. Extract and fluoxetine were administrated by gavages daily, for 10 days, 30 min before reserpine (0.5 mg/kg) injection in peritonealy. Behavioral evaluations were done by forced swimming, tail suspension and open field tests.
Results: Immobility time was enhanced by reserpine (210.37 ± 2.43 in compared with normal saline 109.75 ± 3.13) and the extract decreased it, dose dependently (140.75± 5.84 and 110.125 ± 6.46 200 and 400 mg/kg respectively) as the same as fluoxetine, in forced swimming test. Combination of extract and fluoxetine caused reduction of immobility time more effective than each one alone. The results obtained from tail suspension are similar to forced swimming test. On the other hand, while swimming time was decreased by reserpine, extract elevated it, dose dependently as the same as fluoxetine. Total crossed numbers that is equal to total motility in open field test, were not influenced by each one of agents.
Conclusion: L. officinalis hydroalcoholic extract improved the depression like behavior caused by reserpine.
Keywords: Lavandula officinalis, Reserpine, forced swimming test, tail suspension test, open field test.

P-138