



Neuroprotective Effects of Pine Bark and Aloe vera on the Locomotor Activity in Focal Cerebral Ischemia: Possible Antioxidant Mechanisms

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Abstract

Free radical induced neural damage is concerned in brain ischemia and antioxidants are reported to have neuroprotective activity. We investigated the protective effects of antioxidant plants that are Pine Bark and Aloe vera extracts against movement activity and oxidative stress in ischemia rats. Fifty rats were randomly separated into six groups (n=7); control group, middle cerebral artery occlusion (MCAO), MCAO+pine bark 1 (25 mg/kg), MCAO+pine bark 2 (05 mg/kg), MCAO+Aloe vera 1 (50 mg/kg), MCAO+Aloe vera 2 (100 mg/kg). All extracts were infused (IP) to animals for 14 days before MCAO. Then the middle cerebral artery of rats was occluded for 2 h and reperused for 22 h. The brain malondialdehyde (MDA), Thiol levels and locomotor activity on rotarod test were assessed. The MDA levels of brain were non-significantly increased in MCAO group vs control group. The thiol level of brain was significantly decreased in MCAO group compared to control group (p

Introduction

Stroke is one of the chief reasons for death and handicap around the world. Cerebral ischemia is the aftereffect of inadequate cerebral blood stream for cerebral metabolic capacities. Oxidative pressure and aggravation have a significant part in cerebral dead tissue which interceded by ischemia and reperfusion. Reperfusion injury animates numerous obsessive components like leukocyte penetration, oxidative pressure, aggravation, obliteration of blood-mind obstruction, platelet actuation, nitric oxide delivery, and apoptosis. Thusly, powerful mitigating and cancer prevention agent middle people might be gainful in the therapy of cerebral ischemia and reperfusion injury. The absence of viable and broadly pertinent pharmacological medicines for ischemic stroke patients may clarify a developing interest in the customary medications

Methods

Setting up the plant extricate Hydro-alcoholic concentrate of Pine bark and Aloe vera was created Pine bark and Aloe vera were set up from Mashhad City, Khorasan Province, Iran, and distinguished by botanists in Ferdowsi University of Mashhad, Iran, and a voucher example was stored. The plants were then dried at room temperature. To set up the hydroalcoholic separate, 50 g of the cleaved and dried ethereal pieces of the plant was absorbed ethanol (half) for 48 h and sifted through paper channel. The concentrate was then dried with turning like Animals, Thiol, Behavioral tests: rotarod test, Statistical examination

Conclusion

In our examinations coordinated toward exhibiting utilitarian improvement of neurological capacity, notwithstanding the decrease of MDA and increment of Thiol may improve the prescient worth of creature models for clinical adequacy with novel neuroprotective specialists.