

Abstract Information

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Title :	Neuroprotective Efficacy of Phoenix dactylifera L. in rotenone rat model of Parkinson's Disease
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Abstract :

Background: Parkinson's disease is a neurodegenerative disorder characterized by motor and non-motor symptoms. Several plants have been reported to be beneficial in the management of Parkinson's disease symptoms. Phoenix dactylifera L. has been used in the management of various ailments such as memory disturbances, fever and nervous disorder. It has been reported to have beneficial properties such as antioxidant activity, anti-inflammatory and neuro-protective activity. Therefore, we aimed at assessing the potential benefits of Phoenix dactylifera L. in rotenone rat model of Parkinson's disease.

Methods: In this study, thirty-five (35) male Wistar rats were divided into five groups (I-V) consisting of seven (7) rats each. Group I which served as control was administered distilled water (1ml/kg, orally), Group II received Olive Oil (1ml/kg vehicle, intraperitoneally) and groups III-V were the treatment groups. Group III received rotenone (3 mg/kg, i.p) only. Groups IV and V were administered Rotenone (3 mg/kg, i.p) followed concurrently by n-butanol fraction of Phoenix dactylifera (500 mg/kg and 1000 mg/kg respectively, orally). All administration lasted for 21 days. Effect of n-butanol fraction of Phoenix dactylifera was assessed by neurobehavioural tests using Open field test for locomotion, footprint analysis for gait disorder and beam walk test for motor coordination and balance, microscopic assessment of the substantia nigra and cerebellar cortex and brain tissue concentration level of dopamine, glutamate, acetylcholinesterase. Results and Discussion: Results revealed administration of rotenone induced remarkable alterations in locomotor activity and footprint parameters,

histoarchitectural distortions in substantia nigra, decreased dopamine level and increased endogenous acetylcholinesterase level. However, *Phoenix dactylifera* L. was able to remarkably ameliorate motor deficits and confer some preservation to the substantia nigra thereby increasing the dopamine level. Findings from this study suggest the potential of *Phoenix dactylifera* L. in attenuating rotenone-induced neurotoxicity and could be beneficial in the management of Parkinson's-like symptoms.

Keywords: Dopamine, Acetylcholinesterase, Microscopy, Motor Deficit