

ROLE OF EVENING PRIMROSE OIL IN AMELIORATING THE DAMAGE IN NIGRAL DOPAMINERGIC NEURONS AND SUPPRESSING MICROGLIAL ACTIVATION IN RATS WITH INDUCED PARKINSONISM

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Although the mechanisms of neurodegeneration in Parkinson's disease (PD) are not fully understood, mitochondrial dysfunction, oxidative stress and environmental toxins may be involved. The current research was directed to investigate the ameliorating role of evening primrose oil (EPO) as anti-inflammatory mediator in rotenone parkinsonian rats. Twenty five male rats were divided into five groups. Groups I and II were the disease control groups that were injected with six doses of rotenone (1.5 mg/kg/48h, s.c.). Groups III and IV received rotenone in addition to EPO (5 or 10 g/rat) respectively. Group V was left as vehicle-treated group. The results showed that rotenone-treated rats exhibited bradykinesia and motor impairment in the open-field. In addition, the microglia increased in the striata of rotenone-treated rats as compared to control rats. Treatment with EPO improved the motor performance and reduced the level of microglia in rat brains as compared to rotenone group. Our study reinforces the view that EPO is a promising candidate for neuroprotection in PD.

Keywords: Evening primrose oil, Microglia activation, Parkinsonism, Rat, Rotenone.

