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Antiparkinsonian potential of cilostazol: insights into its neuroprotective effects

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Abstract

Cilostazol, a 2-oxo-quinoline derivative, is a selective inhibitor of phosphodiesterase-3 that increases intracellular cAMP levels and activates protein kinase A. Cilostazol exhibited neuroprotection in focal cerebral ischemia in rats, which was attributed to its anti-apoptotic properties. Furthermore, it guarded against hypoperfusion-induced cognitive impairment resulting in protective activity in an animal model of vascular dementia. Interestingly, cilostazol proved to exert favourable effects against Alzheimer's disease where it enhanced ⊠-amyloid peptide degradation through autophagy modulation in N2a neuronal cells. Together, these findings further support the notion that cilostazol may possess neuroprotective effect and may show beneficial outcome in PD. The aim of this study is to explore the Neuroprotective effect of cilostazol in rotenone-induced PD model in rats. Parkinsonian rat pre-treated with cilostazol showed minimal neuronal vacuolation and minimal perivascular edema in the midbrain and striatum. Moreover, Pre-treatment of rats with cilostazol improved the motor deficits as verified by a remarkable surge in ambulation and rearing. This could be explained by the fact that cilostazol significantly raised striatal TH content as compared to the rotenone group. . In conclusion, cilostazol could be a promising candidate for PD treatment.

Biography

Shireen has completed her Master degree at the age of 26 years from faculty of pharmacy Cairo University, Egypt. She is an assistant Lecturer at the pharmacology and toxicology department at faculty of pharmacy Cairo University, Egypt and published two scientific papers at reputable journals.

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