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Hydroxychloroquine mediated Nurr1 enhancement: Neuroprotective activity in rat rotenone PD model

Shireen A Hedy
Cairo University, Egypt

The main endeavor of the study is to examine the antiparkinsonian effect of hydroxychloroquine (HCQ) in rat rotenone model. There are two opposing proposed mechanisms which might contribute to the obscurity regarding its neuroprotective potential, Nurr-1 expression enhancement against neuronal cell death inflicted by apoptotic stimulation. The enhanced expression of the nigrostriatal Nurr1 receptor possibly through GSK-3 β suppression is a main finding which justifies the improvement of the motor performance in the open field and rotarod tests, striatal tyrosine hydroxylase content increase as well as, the anti-inflammatory effects of hydroxychloroquine as depicted by suppressed nuclear factor (NF)- κ B, and consequently the downstream inflammatory mediator tumor necrosis factor- α . However, those aforementioned beneficial effects exerted by hydroxychloroquine were opposed by apoptotic cell death stimulation as reflected by the increase in cytochrome c. Yet, it was concluded from the amendment witnessed in the behavioral tests and TH content that the protective potential of HCQ outweighs the aggravating factors.

Biography

Shireen A Hedy has completed her Bachelor's degree from Faculty of Pharmacy, Cairo University, Egypt. She is a Demonstrator at the Pharmacology and Toxicology Department at Faculty of Pharmacy, Cairo University, Egypt. She is pursuing her Master's degree aiming to specialize at CNS disorders.

shireen.hedy@pharma.cu.edu.eg