5th International Conference on

PARKINSON'S DISEASE AND MOVEMENT DISORDERS

October 19-20, 2018 | New York, USA



Azza A Ali

Al Azhar University, Egypt

Comparison between the efficacies of pomegranate with different combinations against development of parkinsonism using rotenone model in rats

Background: Parkinson's disease (PD) is a geriatric neurodegenerative disorder marked by the gradual loss of the ability to control physical movements. Exposure to different environmental agents including rotenone (RT) has been linked to increased degeneration and risk of PD. The gold standard effective therapy in PD is L-dopa despite its long-term treatment side effects. In medical folklore, Pomegranate (POM) has been extensively referenced due to its dopaminergic neuroprotective effect while Vinpocetine (VIN) is claimed to enhance brain neurotransmitter, glucose, and oxygen consumption as well as cerebral blood flow. Propolis has been also demonstrated for treatment and prevention of PD while Cocoa can reduce associated symptoms as stress, depression and promote better memory.

Objective: To evaluate and compare the efficacy of POM together with each of VIN, Propolis, Cocoa or L-dopa with L-dopa alone using RT-induced PD rat model.

Methods: Rats were divided into six groups: one normal and five RT model groups. One of RT (2.5mg/kg SC) groups served as non-treated PD model while the others were treated with either L-dopa (10mg/kg PO) or with POM (150mg/kg PO) together with each of the following; Vin (20mg/kg PO), Propolis (300mg/kg PO), Cocoa (24mg/kg PO) or L-dopa (10mg/kg PO) all for 19 days. Motor and cognitive performances were examined using three tests (catalepsy, open-field, Y-maze). Striatal dopamine, norepinephrine, serotonin, and acetylcholinesterase were assessed as well as mitochondrial complex-1, MDA, SOD, TAC, IL-1 β , TNF- α , and caspase-3 expression. In addition, histopathological examinations of different brain regions were also determined.

Results: Concurrent treatment with L-dopa alone or with all POM combination groups ameliorated the impairments in locomotor activities as well as cognition and attenuated the depletions in monoamines and mitochondrial complex-1 contents. In addition, the elevations in acetylcholinesterase activity, oxidative stress, and inflammatory markers as well as caspase-3 expression induced by RT were also decreased.

Conclusion: Combinations of POM with each of VIN, Propolis or Cocoa have beneficial effects against the development of PD and represent a promising disease-modifying therapy even without given as an adjuvant to L-dopa, consequently can be recommended in protection or in treatment course especially when given early.

Biography

Azza A Ali has completed her PhD specialized in Pharmacology and Toxicology from Cairo University, Egypt. Her postdoctoral studies included different scientific aspects especially on neurodegenerative disorders; she also developed research line of behavioral pharmacology in Egypt. She is a member of many scientific societies as (AAPS) and Alzheimer's Association (ISTAART). She is also Editorial Board Member of many international Journals as Brain Disorder & Therapy, Acta Psychopathologica, EC Pharmacology and Toxicology as well as Organizing Committee Member and Chairperson at many international Conferences as the International Conference on Brain Disorders & Dementia Care, Canada (2017) and International Conference on Parkinsons Disease & Movement Disorders, USA (2017). She published more than 60 papers in reputed journals, supervised and discussed more than 90 PhD and MSc thesis and actively participated by oral and posters presentations at many international Conferences (2015, 2016), Alzheimer's Association International Conference (AAIC 2016, 2017) and Parkinsons Conference (2017). She has many appreciation certificates and certificate of best presentation award at the 19th International Conference on Environmental Pollution and Pollution Control, London, UK (ICEPPC 2017). Now she is a Head of Pharmacology and Toxicology Department at Al-Azhar University, Egypt.

azzamoro@gmail.com