LETTER TO THE EDITOR

Role of saffron and chamomile in Parkinson diseases

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Madam, Parkinson's disease (PD) is a distinctive neurodegenerative disorder with a multifactorial range of etiology and symptoms. The pathophysiology behind the condition is a complex array of abnormal alpha-synuclein aggregation, mitochondrial dysfunction, oxidative stress, and neuroinflammation that leads to reduced dopaminergic expression, and neuronal cell death[1, 2].

In multitudinous preclinical studies, Saffron and Chamomile are effective in treating PD. Saffron can mitigate the neurodegenerative progression of the disease by curtailing dopaminergic and neuronal loss and inhibiting alpha-synuclein aggregation. It also possesses antioxidant and anti-inflammatory activities[3]. In-silico studies also demonstrated the action of active compounds of Saffron, including crocin, crocetin, and safranal, against potential targets of PD[1].

Chamomile and its active compound Apigenin are beneficial in movement disorders in Parkinson's disease [4]. It possesses neuroprotective, anti-inflammatory and antioxidant activities. It also has demonstrated activity against potential biomarkers of PD, including: Interleukin 6, Tumour Necrotic factor-alpha, Malonaldehyde, alpha-synuclein, Glial fibrillary acidic protein and also on Tyrosine Hydroxylase and dopamine receptors expression[2].

Prolonged use of pharmacotherapy is not very beneficial in managing PD. Currently, dopamine-related drugs, including Levodopa, are considered first-line therapy. Despite temporarily alleviating the symptoms they cannot alter the degenerative process of PD[1]. It warrants a crucial need for novel therapeutic agents working with diverse mechanisms. Pre-clinically, Saffron and chamomile are efficacious in altering potential disease biomarkers. Both herbs have been easily accessible and utilized since ancient times with numerous benefits and better tolerability. Clinical studies specifically for PD are yet to be analyzed; in different neurological disorders, daily oral consumption of 30mg of Saffron and 1gm to 1.5gm of Chamomile is recommended (3,5). Considering the high cost, a blended intake of saffron and Chamomile could be cost-effective and beneficial in treating the disease. Therefore, though clinical trials are needed for further elaboration, Parkinson's disease and related neurological disorders can be managed by synergising both drugs.

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References

1. Gong J, Xu Z, Hao S, Chen B, Zhuang S, Jiang g, et al. Predication of the Underlying Protective Effect of Saffron on Parkinson's Disease via Network Pharmacology and Molecular Docking. Research Square [Online] [Cited 2021 October 20]. Available from: URL: https://doiorg/1021203/rs3rs-143357/v1.
2. Nabavi SF, Khan H, D'Onofrio G, Šamec D, Shirooie S, Dehpour AR, et al. Apigenin as neuroprotective agent: Of mice and men. Pharmacol Res. 2018; 128:359-65. doi: 10.1016/j.phrs.2017.10.008.
3. Bian Y, Zhao C, Lee SMY. Neuroprotective Potency of Saffron Against Neuropsychiatric Diseases, Neurodegenerative Diseases, and Other Brain Disorders: From Bench to Bedside. Front Pharmacol. 2020; 11:579052. doi: 10.3389/fphar.2020.579052.
4. Shahrbanoo AR, Rostami A. Investigating effect of chamomile hydroalcoholic extract on movement disorders in the animal model of Parkinson's disease. J Herbal Drugs. 2016; 7:37-43.
5. Mendonça Neto I, Costa S, Barboza V, Vale C, Nunes F, Aires C. Plantasmedicinais e fitoterápicos no cuidado da saúde mental em tempos de pandemia: umarevisão da literatura. Revista de Medicina.2022; 101:1-13.