

A comment on effect of plant extracts on alzheimer's disease: An insight into therapeutic avenues

Sir,

At the outset let me thank and congratulate the authors Obulesu M and Rao DM for compiling a much-needed review on the beneficial role of plants/plant extracts in managing the burgeoning and devastating problem of Alzheimer's disease (AD).^[1] To date, four cholinesterase inhibitors or ChEI (tacrine, rivastigmine, donepezil and galantamine) and a partial NMDA receptor antagonist (memantine) are the only approved treatment options for AD. However, these drugs fail to completely cure the disease, which warrants a search for newer class of targets that would eventually lead to effective drugs for the treatment of AD. This is pertinent and timely information for researches in this field as existing therapies in the field, which are limited in number, have

shown disappointing results. As pointed out by the author's "*Plants provide wealth of bioactive compounds, which exert a substantial strategy for the treatment of neurological disorders such as Alzheimer's disease.*"^[1]

It would be worthwhile to include certain additional plants of Indian origin that have demonstrated to possess beneficial properties for managing dementia/AD. Notable among them is "Aged Garlic Extract" (AGE) and one of its active ingredients, S-allyl-L-cysteine (SAC), which has demonstrated to restrict several pathological cascades related to the synaptic degeneration and neuroinflammatory pathways associated with AD.^[2]

It was demonstrated that mice treated with pomegranate juice had significantly less (approximately 50%) accumulation of soluble Aβ₄₂ and amyloid deposition in the hippocampus as compared to control mice. However, further studies to validate and determine the mechanism of these effects, as well as whether substances in pomegranate juice may be useful in AD, should be considered.^[3]

Study also indicates *Murraya koenigii* (Curry leaf) to be a useful remedy in the management of Alzheimer's disease and dementia.^[4]

Daucus carota extract (carrot) reversed the amnesia induced by scopolamine and diazepam besides significantly reducing the brain acetylcholinesterase activity. Therefore, *Daucus carota* extract may prove to be a useful remedy for the management of cognitive dysfunctions.^[5]

There is evidence demonstrating the promising role of saffron (*Crocus sativus*) in the management of patients with AD.

These naturally occurring agents in the diet have great potential, thus proving Hippocrates, who proclaimed 25 centuries ago, "*Let food be thy medicine and medicine be thy food.*"

Given the fact that most of the above-mentioned plants are consumed regularly in the diet, their incorporation could be feasible even in many distant and rural areas of our resource-constrained country. These treatment avenues can reduce treatment gap especially to the underprivileged and deprived patients residing in rural isolated areas of our developing countries with lowermost conceivable affordability.

Given intense clinical need and carer concerns that lead to exploration of such alternatives as herbal medicines, research priorities should be aimed at establishing an ongoing authoritative database on herbal medicine for dementia. Further epidemiological and follow-up

studies of promising phytopharmaceuticals or related nutraceuticals for disease prevention are warranted.

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References

1. Obulesu M, Rao DM. Effect of plant extracts on Alzheimer's disease: An insight into therapeutic avenues. *J Neurosci Rural Pract* 2011;2:56-61.
2. Ray B, Chauhan NB, Lahiri DK. The "aged garlic extract" (AGE) and one of its active ingredients S-allyl-L-cysteine (SAC) as potential preventive and therapeutic agents for Alzheimer's disease (AD). *Curr Med Chem* 2011;18:3306-13.
3. Hartman RE, Shah A, Fagan AM, Schwetye KE, Parsadaniyan M, Schulman RN, *et al.* Pomegranate juice decreases amyloid load and improves behavior in a mouse model of Alzheimer's disease. *Neurobiol Dis* 2006;24:506-15.
4. Mani V, Ramasamy K, Ahmad A, Parle M, Shah SA, Majeed AB. Protective effects of total alkaloidal extract from *Murraya koenigii* leaves on experimentally induced dementia. *Food Chem Toxicol* 2012;50:1036-44.
5. Vasudevan M, Parle M. Pharmacological evidence for the potential of *Daucus carota* in the management of cognitive dysfunctions. *Biol Pharm Bull* 2006;29:1154-61.

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