STUDENTS' CORNER
LETTER TO THE EDITOR

Inspecting the potential of thymol as a therapeutic agent for treating Alzheimer's disease

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Respected Madam, Thymol (2-isopropyl-5-methylphenol) is the main monoterpene phenol occurring in essential oils isolated from plants, like thyme, belonging to the Lemnaceae family.[1] Due to its antioxidant, free radical scavenging, anti-inflammatory, analgesic, antispasmodic, antibacterial, antifungal and antiseptic properties, thymol has been used since ancient times for therapeutic purposes.[2] This letter specifically focuses on using thymol in treating Alzheimer's disease. Alzheimer's disease is a neurodegenerative disorder which is caused due to the extracellular accumulation of amyloid β (Aβ) plaques and intracellular aggregations of neurofibrillary tangles (NFTs) formed due to hyperphosphorylation of microtubule associated τ (tau) protein. The accumulation of these substances in various parts of the brain causes neuronal damage and death.[3]

Due to its free radical scavenging and antioxidant capabilities, thymol is able to scavenge the reactive oxygen species produced by the amyloid aggregates, thus attenuating the potential oxidative damage that they would cause. Thymol can also alleviate protein kinase C activity as a memory-related protein.[4] thymol has proved to reduce the cognitive defects and was also found to alleviate learning and memory impairment in rat models.[5,6] Although thymol has a lot of beneficial effects against cognitive impairment caused by Alzheimer's, all of the experiments have been done on rat models; hence thymol's therapeutic potentials in modulating and preventing Alzheimer in humans need to be fully explored.

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SSN, MM: Data review, drafting, revision, final approval and agreed to be accountable for all aspects of the work.