



Alzheimer's: Phytotherapy and the most important herbs in the treatment of Alzheimer's

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Abstract

Alzheimer's disease is a progressive form of dementia that causes problems with memory, thinking, and behavior. This disease is associated with profound effects on intelligence, self-care, speech impairment, and dysfunction, motor functional and cognitive impairment. This letter discusses some of the most important herbal plants used for Alzheimer's disease. Herbs such as *Petroselinum crispum*, *Thymus vulgaris*, *Hypericum perforatum*, *Matricaria chamomilla*, *Salvia officinalis*, *Allium sativum*, *Ziziphus jujube*, *Lavandula officinalis*, *Curcuma longa*, *Salvia Rosmarinus* and *Cyperus rotundus* are considered to treat Alzheimer's. Medicinal herbs can be used in the treatment of Alzheimer's and they can be produced in the future as effective natural anti-Alzheimer's drugs.

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Dear editor:

Alzheimer's disease is a progressive form of dementia that causes problems with memory, thinking, and behavior. This disease is associated with profound effects on intelligence, self-care, speech impairment, and dysfunction, motor functional and cognitive impairment [1]. Memory loss is usually the first symptom that occurs in Alzheimer's disease. However, remote memory performs better than Short-term memories [2]. It is estimated that there are approximately 44 million people worldwide have Alzheimer's disease or a related form of dementia. This number is estimated to increase to 130 million by 2050 [3]. Alzheimer's disease is both preventable and partially controlled by both modern and traditional medicine. Some drugs affect one neurotransmitter or class of neurotransmitters like selegiline and rivastigmine, as well as antioxidants such as vitamin E. Traditional medicine and herbs, have also been shown to reduce the symptoms of Alzheimer's disease. This letter discusses some of the most important medicinal plants used for Alzheimer's. Medicinal plants such as *Petroselinum crispum*, *Thymus vulgaris*, *Hypericum perforatum*, *Matricaria chamomilla*, *Salvia officinalis*, *Allium sativum*, *Ziziphus jujube*, *Lavandula officinalis*, *Curcuma longa*, *Salvia Rosmarinus* and *Cyperus rotundus* are considered to treat Alzheimer's.

Petroselinum crispum contains useful essential volatile oils, including myristicin, lim-

onene, eugenol, and alpha thujene. It plays an important role in the treatment of patients with Alzheimer's disease by preventing neurological damage to the brain [4]. Turmeric (containing curcumin compound) affects the beta-amyloidogenesis of Alzheimer's patients by intensifying the activity of monocytes and macrophages [5]. *Thymus vulgaris* essential oil contains phenols such as thymol, carvacrol, cinnamon, linalul, and pinene. Inhibition of acetylcholinesterase enzyme by the compounds of this plant can prevent the reduction of acetylcholine in Alzheimer's disease [6]. *Hypericum perforatum* contains compounds of hypericin, hyperforin, and pseudohypericin and has been effective in the prevention and treatment of Alzheimer's disease [7]. Ethanol extract of *Matricaria chamomilla* with restorative effects on the nervous system may be useful in patients with Alzheimer's and behavioral disorders. The enhancement of memory by the extract can be attributed to the antioxidant effects of its active compounds [8]. The efficacy of *Salvia officinalis* extract in the treatment of mild to moderate Alzheimer's disease has been determined [9]. The main composition of garlic is allicin. Garlic intake may inhibit A β accumulation in the human brain and thereby protect the brain and produce an anti-Alzheimer's effect [10]. Recent findings have shown that *Ziziphus jujube* disrupts memory, a common symptom of various neurological diseases. However, its effects on β -amyloid toxicity (A β) remain clear [11].

Rosemary is a plant that contains compounds 1 and 8-cineol, alpha-pinene and camphene. Neuroprotective effect of rosemary has been implicated in Alzheimer's disease by mechanisms including the prevention of brain inflammation and β -amyloid toxicity ($A\beta$) formation [12]. *Cyperus rotundus* contains cineole and isoleucine compounds and with anti-acetylcholinesterase effect improves memory and learning in this disease [13]. Medicinal herbs can be used in the treatment of Alzheimer's by their various mechanisms mentioned above and they can be produced in the future as effective natural anti-Alzheimer's drugs.

Authors' contribution

All authors contributed equally to the manuscript.

Conflicts of interest

The authors declared no competing interests.

Ethical considerations

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