

A Review Article on Alzheimer's Disease

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Introduction

Alzheimer's disease is the form of dementia and usually occur in the old age. In Alzheimer's disease death of brain cells leads to memory loss. According to World Health Organization (WHO), 35.6 million people are suffering from dementia worldwide and which may further increase to 115.4 million by 2050. Modern science says A β (amyloid beta) is causative agent of Alzheimer's disease and also some infections, toxins and metabolic disorders.² The cholinergic deficiency in this disease is responsible for most of the short term memory which leads to progressive loss of memory, deterioration of all intellectual functions, increases apathy, decreases speech function, disorientation and gait irregularities. Modern science have explained symptomatic treatment which may lead to adverse effects

Alzheimer's disease is a progressive disorder that causes brain cells to waste away (degenerate) and die. Alzheimer's disease is the most common cause of dementia — a continuous decline in thinking, behavioral and social skills that disrupts a person's ability to function independently.³

The early signs of the disease may be forgetting recent events or conversations. As the disease progresses, a person with Alzheimer's disease will develop severe memory impairment and lose the ability to carry out everyday tasks.

Current Alzheimer's disease medications may temporarily improve symptoms or slow the rate of decline. These treatments can sometimes help people with Alzheimer's disease maximize function and maintain independence for a time. Different programs and services can help support people with Alzheimer's disease and their caregivers. There is no treatment that cures Alzheimer's disease or alters the disease process in the brain. In advanced stages of

the disease, complications from severe loss of brain function — such as dehydration, malnutrition or infection — result in death.

According to some research studies acetylcholine transferencees' and acetylcholine esterase Stages of Alzheimer's disease [4] are mentioned below.

Early Stage

1. Goings-on forgetfulness
2. Confusion

Middle Stage

1. Difficult to recall
2. Deepened Confusion
3. Disorders related to sleep

Late Stage

1. Difficulty in speaking
2. Self-reproach of things
3. Distressed

Diagnosis Of Alzheimer's Disease (AD)⁵

Alzheimer's Disease can be diagnosed clinically by physical and psychological examinations. Collateral history from relatives,

Lab tests:

1 Vitamin - B12 folate deficiency, CBC, LFT, CT, MRI and with single photon emission computer tomography (SPECT) or positron emission tomography (PET). Neuropsychological tests such as the mini-mental state examination (MMSE). Psychological tests for depression are employed. cerebrospinal Fluid Examination CSF examination through a lumbar puncture is presently not mandatory but useful in detecting convert but reversible causes of dementia such as chronic neuroinfections. Medications used in modern science in Alzheimer related problems are, acetylcholinesterase inhibitors and NMDA (N-methyl-Daspartate) receptor antagonist.

Neuropsychological tests such as the minimal state examination (MMSE) . Psychological tests for depression are employed.

Medicinal plants against Alzheimer's disease

Recently, medicinal plants have gained wide acceptance because of their fewer side effects compared to the synthetic medicines and necessity to meet the requirement of medicine for increasing human population. However, steady supply of source material often becomes difficult due to various factors like diverse geographical distribution, environmental changes, cultural practices, labor cost, selection of superior plant stock and over exploitation by pharmaceutical industries.⁷

Ashwagandha is used tonic for nervous system.⁶ It performs antioxidant activity. Ashwagandha plays important role in stress so can be used in the patients of Alzheimer's disease.⁷

Haridra (*Curcuma longa*) Usually Haridra is used in cooking as spice in Asia. Haridra has active components such as tumerone oil and water soluble curcunoids.⁸ Curcumin has antioxidant and anti-inflammatory properties.⁹ Haridra helps to balance cholesterol levels, fight against allergens and to boost immunity¹⁰

Brahmi (*Bacopa monnieri*) Brahmi is used as tonic for nervous system, tonic for cardiac system and also in diseases such as epilepsy, asthma.^{11,12} The major constituent of Brahmi is saponins and triterpenoid bacon saponins.^{13,14}

Guduchi (*Tinospora cordifolia*) Guduchi plays important mechanism for immunostimulation. Also has property of memory enhancing and also helps in the synthesis of acetylcholine.¹⁵ Thus contributing in increased choline level which shows that it has memory enhancing property

Shankpushpi (*Convolvulus pluricaulis*) Plant of Shankpushpi is commonly found in India and is used tonic for nervous system.^{16,17,18} Shankpushpi regulated adrenaline and cortisol.[32] It might be used in stress, anxiety, mental fatigue and insomnia.^{19,2,21}

Jyotishmati (*Celastrus paniculatus*) Jyotishmati is used for sharpening the memory and to increase concentration.²² It has an antioxidant properties. The extract of seed have cholinergic activity.²³

Guggulu Guggulu contains ferulic acids, phenols and other non-phenolic aromatic acids which are

helpful in the treatment of Alzheimer's disease.^{24,25} It is also used in the treatment of arthritis, inflammation and obesity.

Satapatrika (*Rosmarinus officinalis*) It contains apigenin, carvacrol, eugenol, oleanolic acid, thymol and ursolic acid which are COX-2 inhibitors.²⁶ In addition, Satapatrika also have antioxidant, cytoprotective, anti-apoptotic and anti-inflammatory properties.

Yashtimadhu (*Glycyrrhiza glabra*) Causative agent of Alzheimer's disease is $A\beta$. In a recent study it was found that water extract of Yashtimadhu helps to prevent brain cell death.²⁷

Yoga and Meditation^{28,29,30} Yoga and meditation may play role in improving symptoms of Alzheimer's disease. Performing to this brain forms new connections and recover from the injuries which had in the disease. Patients doing to this may find peace and feel happier.

Kirtan Kriya which is explained in meditation, has following benefits:

- Reverses memory loss
- Improves sleep quality
- Increases energy levels
- Down regulates inflammatory genes

Improves psychological and spiritual well being
Activates significant anatomical areas of the brain

Conclusion

Rasayana therapy has been explained in Ayurveda which have adapt genic, Immunomodulatory action, nutraceutical action Herbs mentioned in this article are helpful in treating of this disease . The herbs mentioned in this article have various properties such as antioxidant, immunity booster ,immune modulators anti-inflammatory, etc. which can be used for long duration either with modern medications as a supplements or as an individual .Yoga and meditation can also be done for Alzheimer's disease which can help to reverse the memory loss.

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