

MANAGEMENT OF ALZHEIMER'S DISEASE THROUGH AYURVEDA

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ABSTRACT

Neurodegenerative disorders are major challenges to clinicians. Alzheimer's is a disease of the brain that causes problems with memory, thinking and behaviour. It is the most common form of dementia and accounting for 60 to 80 per cent of all cases. Alzheimer's disease, or AD, is a progressive, incurable disease of the brain caused by the degeneration and eventual death of neurons (nerve cells) in several areas of the brain. Approximately 36 million people worldwide are having AD. By 2050, 115 million older are expected to have AD if the current numbers hold and no preventive treatments become available. Mostly it begins in people over 65 years of age; Living with Alzheimer's disease can be saddening for both the sufferer and the family. AD is financially one of the most costly diseases. The national cost of caring for people with AD is about \$100 billion every year. Highly sophisticated medical technology and pharmacological advances unfortunately failed to meet the needs of the Neurodegenerative patients. Even though there is no direct reference regarding Alzheimer's disease (AD) in Ayurvedic classics, scattered references are available regarding the symptoms as well as treatment such as *Rasayana* etc. A judicious application of Ayurvedic principles could go a long way in the management and care of AD, which is going to be an alarming sign in the future.

Keywords: Alzheimer's disease, Neurodegeneration, *Rasayana*, Ayurveda.

INTRODUCTION

Neurodegenerative disorders are major challenges to clinicians all the time. Approximately 10% of all persons over the age of 70 years have significant memory loss, and in more than half, the cause is Alzheimer's disease¹. AD can manifest in third decade of life also but it is most common cause of dementia in elderly.² Alzheimer's is a disease of the brain that causes problems with memory, thinking and behaviour. Alzheimer's disease, or AD, is a progressive, incurable disease of the brain caused by the degen-

eration and eventual death of neurons (nerve cells) in several areas of the brain³. The exact cause and mechanism by which Alzheimer's disease develops is still unknown. But the main postulates are:

1. Genetic causes/gene mutations⁴
2. Oxidative damage to the nerve cells⁵
3. Aggregated protein's in the nerve bodies⁶
4. Mitochondrial abnormalities⁷.
5. Abnormal neuronal cell death⁸
6. Impairment in axonal transport⁹

7. Cytotoxicity¹⁰.

The cognitive changes of AD tend to follow a characteristic pattern begins with impairment of memory and progress to language and visuospatial deficits¹¹. Memory problems are typically one of the first warning signs of cognitive loss, possibly due to the development of Alzheimer's disease. A decline in other aspects of cognition, such as word-finding vision/spatial issues, and impaired reasoning or judgment, may also signal the very early stages of Alzheimer's disease. As Alzheimer's disease progresses, memory loss worsens, and changes in other cognitive abilities are evident. Problems can include, for example, getting lost, trouble handling money and paying bills, repeating questions, taking longer to complete normal daily tasks, using poor judgment, and having some mood and personality changes. Later stage there will be hallucinations, delusions, and paranoia, and may behave impulsively. People with severe Alzheimer's cannot communicate and are completely dependent on others for their care. From the *Ayurvedic* perspective this condition can be termed as *Smritibhramsha*, resulted due to depletion of *Dhatu*s or tissue elements and imbalance of *Vata Dosh*a. Genetic causes can also be understood here with the concept of *Beeja* dosha described by Charaka¹². It is mentioned that whichever *Avayava* of *Beejabhaga* (genes) is affected by the vitiated *Dosh*as the respective *Avayava* will present with a disease. So a particular *Beejabhagaavayava* (Part of the genes) may be responsible for changes in the neurons for the occurrence of disease. Along with genetic, environmental and lifestyle related factors may be responsible for manifestation of the disease. In Ayurveda it is said that *Smritibhramsha* can develop due to consumption of unwholesome diet (dominant in *Tamas & Rajas*) and lack of physical activities which causes vitiation of *Dosh*as affects the mind and body both and leads to *Smritibhramsha*^{13,14}. Modern medical science explains Alzheimer's disease (AD) is neurodegenerative disease and characterized by the progressive accumulation of amyloid β -protein ($A\beta$) in brain, a process that is considered to play an important and potentially

causal role in the pathogenesis of AD¹⁵. In the similar way *Dhatukshaya* and *Margavarodha* are the cardinal aetiologies for the vitiation of *Vata Dosh*a¹⁶. The accumulation of protein can be understood as collection of *Aama* at the cellular level. *Margavarodha* may be caused of the formation of *Aama* precipitated by *Vishamagni* which was formed due to *Vatadushti*. The proper functioning of *Vata* in cellular level will make use of nutrients for building tissues and removing wastes from the system. *Vikruti* of *Kaayagni* and *Vata* at the level of neurons is the cause of production of *Aama* which leads to AD. This accumulation of waste as *Aama* which can be correlated with protein aggregation can disturbs the equilibrium and leads to degenerative changes. This degeneration further vitiates *Vata* and it goes on in a vicious circle. The possibility of *Avarana* of *Vata* should also be considered, while also keeping in mind the condition of the patient and disease. In *Pranaavrita Samana* there will be difficulty in speech, slurring speech and even dumbness¹⁷. If *Vyana Vata* is occluded by *Prana Vata*, then there will be loss of functions of all the senses and there will be loss of memory as well as strength¹⁸. Alzheimer's disease AD is a progressive disease which shows these different types of manifestation in different patients depending upon the *Samprapti* present.

DIAGNOSIS OF ALZHEIMER'S DISEASE (AD)

The diagnosis can be confirmed with very high accuracy post-mortem when brain material is available and can be examined histologically. The earliest and most severe degeneration is usually found in the medial temporal lobe, lateral temporal cortex and nucleus basalis of Meynert. The microscopic findings are neuritic plaque and NFTs¹⁹. Alzheimer's Disease can be diagnosed clinically by physical and psychological examinations. Collateral history from relatives, Lab tests: rule out vit. B12 and 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.

MANAGEMENT:

The management of AD is challenging & gratifying despite the absence of a cure²⁰. At present, no treatment is available to alter the relentless deterioration of the disease. A number of attempts have been made for neurotransmitter replacement therapy in Alzheimer's disease but these drugs cause hepatotoxicity. The overall management is very difficult and frustrating as there is no specific treatment and the primary focus is on long term amelioration of associated behavioural and neurologic problems. Building rapport with the patient's family members and other caregivers is very essential for successful management but is found to be very difficult. Ayurved can provide a better relief if diagnosed and treated in the early stage of disease. *Smritibhramsha* occurs mainly due to old age and due to impairment of *Buddhi*. The first stage of treatment involves *Rookshana* and intake of *Amapachana* medicines. *Rookshana* and *Amapachana* to make the *Srotas* ready for *Snehana* and *Shodhana* procedure. After proper *Snehana* (oilation), *Swedana* (Sudation), *Shodhana* should be done in the form of *Vasti* or *Virechana* and *Nasya*. *Vasti* is said to be the best in *Vata Vyadhi*, moreover it is said to be *Ardhachikitsa*²¹. *Yapanavastis* are indicated in *Avarana* and also in *Manovikara* (psychological disturbances)²² and we can select *Rajayapanavasti* for the treatment of AD. Also, as *Smritibhramsha* can be considered as an *Urdhwajatrugata Vikara*, *Nasya Karma* can be performed. Hence, the line of treatment comprises of *Nasya* and administration of *Rasayana* and *Medhya* drugs orally. The ancient scholars of Ayurveda have considered '*Nasa*' as the passage to the head i.e. cranial organs. The drug given through nose as *Nasya*, reaches the brain and eliminates only the morbid *Doshas* responsible for producing the disease. The patient should be given proper counselling and mental support i.e. nothing but the *Satvavajaya Chikitsa* as it is the best in management of *Manovikara* (psychological disturbances)²³ This will be very helpful

to manage the behavioural symptoms of patient of Alzheimer's disease like agitation, wandering, anxiety, anger, and depression. *Rasayana* therapy including *Medhya Rasayan* and *Achara Rasayana* must be planned for the AD because it helps us in strengthening the host- defence mechanisms. It is very beautifully says about right mental and physical conduct, which when followed lead to a disease free life. A regulated lifestyle, wholesome diet, appropriate behaviour, and following ideal code of conduct as quoted in Ayurveda²⁴ are best to prevent and manage the Neurodegenerative diseases in general and Alzheimer's Disease (AD) in particular.

CONCLUSION

Alzheimer's is a disease of the brain that causes problems with memory, thinking and behaviour. Living with Alzheimer's disease can be saddening for both the sufferer and the family. The prevalence of Alzheimer's disease is increasing rapidly and in spite of various medical advancement the exact pathogenesis and management is not known. Ayurveda treatments like *Shodhana Karma*, *Medhya Rasayana*, *Achara Rasayana*, *Satvavajaya Chikitsa* etc. can effectively reduce the progression of disease and provide a better quality of life to patients of AD.

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