



# Ayurvedic Management of Alzheimer's Disease – A single Case Study

<sup>1</sup>Dr Bhargav H M, <sup>2</sup>Dr Madhava Diggavi, <sup>3</sup>Dr Sandeep N Mannopantar

1. Final year PG scholar, Dept of Kaya Chikitsa, Taranath Govt Ayurveda Medical College & Hospital, Bellary, Karnataka
2. Prof & Head, Dept of PG studies in Kaya Chikitsa, Taranath Govt Ayurveda Medical College & Hospital, Bellary, Karnataka
3. Prof & Head, Dept of Rasashastra & Bhaishajya kalpana, Bapuji College of Ayurveda & Hospital, Challakere, Karnataka

## Abstract

Alzheimer's disease is a neurodegenerative disorder marked by cognitive and behavioural impairment that significantly interferes with social and occupational functioning. It is the most common form of dementia in which the symptoms may vary from mild impairment in cognition to severe loss of memory. In Ayurveda Smrithi Nasha, Unmada, Apasmara, Athathva Abhinivesha etc., are the chapters that deal with Higher Mental Function & cognition. Medhya Rasayana is a class of drugs told for improving Higher Mental Functions. Here is case of Alzheimer's disease treated with Medhya Rasayana with respect to Cognition & QOL. After 60 days of intervention, a significant improvement in his cognition status and in Serum Vit B12 levels is observed. Ayurveda too has answer for Cognition related issues. There exists a need to integrate various systems of medicine so that the approach is patient centric.

**Keywords:** Alzheimer's disease, Medhya, Rasayana, Mild Cognitive Impairment, Harithaki ghritha, Jyotishmati Taila, Unmada Bhanjana Rasa, Vitamin B12

## Introduction

Cognitive impairment is a premature aging of the brain, usually beginning in mid-adult life and progressing rapidly to extreme loss of mental powers—similar to that seen in very old age<sup>1</sup>. Alzheimer's disease is a progressive form of dementia that interferes with memory, thinking, behaviors and quality of life. It is the most common form of dementia among elderly.

The brain in Alzheimer's has Macroscopically atrophied cerebral cortex. Histologically – contain senile plaques and neurofibrillary tangles in the cerebral cortex with hippocampus atrophy. Histochemical staining demonstrates more of Amyloid plaques. The disability in performing daily activities and decline in cognition, intellect and memory is due to the deposition of undigested amyloid and tau proteins deep inside the hippocampus area obstructing the neuro chemical transmission.

Alzheimer's disease prevalence in India is 7.4% among adults over the age of 60—meaning about 8.8 million Indians are currently living with dementia<sup>2</sup>. This is greater than the Dementia in India 2020 Report estimate of 5.3 million. It is also closer to dementia rates in both the U.S. (8.6%) and the U.K. (7.1%). Its incidence<sup>3</sup> rate per thousand persons for those above the age of 55 years is 11.67 and for those above the age of 65 years is 15.54. By 2050, over 75% of cases of Alzheimer's disease and related dementias (ADRD) are expected to occur in low-and middle-income countries.

In Ayurveda, the chapters Unmada, Apasmara, Athathva Abhinivesha, Graha etc., are specially dedicated for Neuro psychiatry. Alzheimer's being a neuro cognitive impairment presents as a mixture of Lakshanas mentioned under Unmada, Apasmara, Athathva abhinivesha etc.

As a symptomological correlation, the impairment in cognitive domains like Memory, Language, Execution, Self-care & control, Visuospatial Function etc., AD seems similar to Unmada of Ayurveda. The derangements in components like Smrithi, Buddhi, Jnana, Sanjna, Achara, Cheshta Sheela, Bhakti etc., seem similar to impaired cognitive domains.

## Methodology

A male patient aged 47years came to Kayachikitsa OPD of Taranath Govt Ayurveda Medical College complaining of forgetfulness, Sleeplessness, Lethargy, Heaviness of Body, Mild constipation & bloating throughout the day since 4 months. Weight was 76kgs with central obesity. He was not a known case of Diabetes and Hypertension. (figure 1)

When sent for investigation, patient paid the fees and went home. He forgot to give the blood sample. The incidents like this were not new to him. Due to this issue with recent memory, he was being cheated financially and this was one of the main reasons for his Depression. O/I: Reduced Vit B12 levels - 72 pg/ml (figure 2), Reduced serum lithium levels - < 0.2 were observed. Cognition levels were assessed using Montreal Cognitive Scale with a score of 21/30 indicating Mild Cognitive Impairment (score less than 24 – MCI).

So, the complaints were indicating towards Unmada presentation with Smrithinasha predominancy. The treatment was planned accordingly-

|  |
|--|
| Harithakyadi Churna <sup>4</sup> for Deepana & Ama pachana for 5 days                                |
| Harithaki Ghritha <sup>5</sup> Shamana Sneha 2tsp BD before food for 60 days                         |
| Jyothishmati Taila <sup>6</sup> Pratimarsha Nasya 2 drops into each nostril thrice a day for 60 days |
| Unmaada Bhanjana Rasa <sup>7</sup> 500mg BD before food for 60 days                                  |

## Observations & Results

After the intervention for 60 days there were a significant change in the patient. His bloating complaint was completely reversed. Once his bowel movements are set free, his Quality of Sleep improved. Good sleep and proper Anulomana had slowly resulted in clarity of mind and senses. Vit B12 levels improved from 72 to 174 pg/ml (figure 3). Montreal Cognitive score improved from 21/30 to 24/30. Weight reduced from 76kgs to 73kgs (Table 1)

**Table 1 showing changes in objective Parameters-**

| Parameters               | Before   | After     |
|--------------------------|----------|-----------|
| Vit B12                  | 72 pg/ml | 174 pg/ml |
| Montreal Cognitive Score | 21/30    | 24/30     |
| Weight                   | 76 kgs   | 73 kgs    |

Other parameters of QOL also shown significant improvements within a period of 60 days (Table 2).

**Table 2 showing changes in Quality-of-Life parameters-**

| QOL parameters                    | Before intervention | After intervention |
|-----------------------------------|---------------------|--------------------|
| Memory                            | 2                   | 3                  |
| Language & Interaction            | 2                   | 3                  |
| Execution of Purposeful movements | 3                   | 3                  |
| Recognition                       | 4                   | 4                  |
| Visuospatial function             | 2                   | 4                  |
| Self-control & care               | 2                   | 3                  |
| Management of Activities          | 2                   | 3                  |
| Learning                          | 3                   | 3                  |
| Attention                         | 2                   | 3                  |
| Emotional stability               | 1                   | 3                  |
| Utsaha                            | 1                   | 3                  |
| Nidra                             | 1                   | 4                  |
| Mala Pravritthi                   | 1                   | 4                  |
| Arohana Samarthya                 | 2                   | 3                  |

## Discussion

All the mentioned presentations of AD invariably fall under the symptomatology told in Unmada: Dhee Dhriti Smriti Vibhramsha, Cheshta Sheela Achaara Vibhrama etc., are the terms parallel to the symptoms of AD. Some of the presentations can be correlated as: Memory loss, Language, impaired and word finding difficulty (aphasia) can be called Smritibhramsha. Frustration and anxiety in some persons having anosognosia seem Sheelavibhramsha. Difficulty in sequential motor act like dressing, eating etc. the slowness and awkwardness of movement (apraxia), Help needed for the simplest tasks like eating, dressing, toileting, etc., fall under Cheshta vibhramsha. Hallucinations and delusions, Complete loss of judgment, confusion, insight often lost can be called Buddhi Vibhramsha.

Even though the symptomatology of AD point towards the Bhava of Unmaada- Apasmara-Athatva abhinivesha & other HMF related symptoms, the pathophysiology of AD is structural. The basic pathology remains the undigested protein molecules which inhibit the neurochemical transmission. Brain atrophy is evident in AD cases. Brain atrophy is Dhathu kshaya – Majja kshaya. Any undigested molecules to be visualized as Vatakaphaja Ama. If the molecule has got bleeding tendency or inflammation tendencies then Pittha Anubandha to be considered. So, it is basically Avarana pathology. Hence in Alzheimer's, atrophy due to protein deposition can be understood as Dhathu kshaya due to Marga Avarana.

Vitamin B12 is an essential vitamin required for neurological health. The main causes of deficiency: hypoacidity of the stomach, pernicious anemia, and lack of dietary intake is more prevalent with increasing age. Low serum vitamin B12 levels are associated with neurodegenerative disease and cognitive impairment. One study from Cambridge journal<sup>8</sup> has concluded: There is a small subset of dementias that are reversible with vitamin B12 therapy and this treatment is inexpensive and safe. The Vit B12 can be considered a part of Dhathu saara or Ojas, representing Vyadhikshamatva. It is a part of Prakritha Kapha by the loss of which Pandu Samprapthi takes place.

Hareetakyadi yoga is mentioned in Charaka samhitha Chikitsa sthana in Rasayana pada which contains seven herbal ingredients and guda and saindhava in equal quantity. This yoga is to be administered in patients as a poorvakarma to rasayana therapy for the purpose of koshtashodhana.

The Harithaki Ghritha is from Ashtanga Hridaya, Udara Chikitsa. The Yoga is a Nitya Mridu Anulomaka protecting the Bala of the Rogi. The main drug: Haritaki has been found to be effective in breaking chain reaction and also proved to have the best hydroxyl radical scavenging activity among all other drugs. Thus, Karshana guna of Haritaki is proved and is helpful in cleansing the channels or vessels and elimination of dosha corrects the derangement of Apana Vayu. Even though Harithaki is Ruksha and Ushna it is being placed in the first place even before Amalaki while narrating Rasayana Kalpas in Charaka Chikitsa sthaana.

The drug Jyotishmati is the first drug mentioned under Shirovirechaniya Gana Mahakashaya of Charaka Sutra 4th chapter. As the name itself indicates Jyotishmati will light up the intellect, the drug is a potent Medhya Rasayana and Kaphahara too. For all the diseases related to brain the nearest route of drug administration is Nasa. So, Nasya Karma with Jyotishmati Taila was planned.

The Yoga Unmada Bhanjana Rasa is from Bhaishajya Ratnavali – Unmaada Rogaadhikaara. The Yoga mainly contains Rajata, Abhraka, Loha and Pravala Bhasma with Loha being the highest in Quantity. Along with these mineral drugs, 15 other herbal drugs (most of them Pittha kapha hara) are also there in the Yoga. On analyzing some of the ingredients, the mineral components: Vanga Bhasma, Abhraka Bhasma, Rajat Bhasma, Pravala Bhasma and lastly Loha Bhasma being the highest, seem to be the key ingredients in the Yoga. The equal quantity of these mineral elements to that of herbal ingredients makes us to think the major effect is contributed by Mineral components itself. Abhraka Bhasma is a powerful Rasayana with Tridosha hara property. It has a calming effect on both mind and body. The typical term 'Prajnabodhi' is used while narrating the indications of Abhraka. The term has been used to refer its broad-spectrum action on elements like Dhee, Dhriti, Sanjna, Smrithi etc., which together constitute for Prajna. Rajata Bhasma being Kashaya, Tiktha. Madhura in Rasa and Sheeta in Veerya is a Potent Pitttahara in action. It is a reduced silver nanoparticle used for a multitude of purposes: Rejuvenating for brain cells and nerves, Nootropic, Nervine Tonic, Neuroprotective, Anticonvulsant, Antidepressant, Cardioprotective, Hematogenic, Antiinflammatory, Immunomodulatory, Antibacterial, Antimicrobial and Antacid. All these multidisciplinary properties of all the drugs might be the reason for their significant effects in many of the subjective and objective parameters.

## Conclusion

When compared to other branches, Geriatrics is one of the most neglected areas both in terms of Funding & Research. Alzheimer's Disease is the most common form of Dementia among elderly. Though there are several classes of drugs to arrest the prognosis, the magnitude of their effect is not up to the mark. On the other hand, Cognition deficit cases respond to Ayurvedic principles and treatments. There exists a need to integrate all the streams of Medicine to make the system patient centric.

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ಕರ್ನಾಟಕ ಸರ್ಕಾರ  
ತರಾಣಾಥ ಗೌ. ಆಯುರ್ವೇದ ಮೇಡಿಕಲ್ ಕಾಲೇಜ್ ಹಾಸಪಿಟಲ್, ಬೆಲ್ಲಾರಿ  
TARANATH GOVT. AYURVEDIC MEDICAL COLLEGE HOSPITAL, BELLARY  
ವಿದ್ಯಾರಣ್ಯ ಹಾಸಪಿಟಲ್ ಔ. OUT PATIENT RECORD

ಕ್ರ.ಸಂಖ್ಯೆ / C. OPD NO. : 2918  
ನಾಮ / NAME : Anwar Ali  
ವಯಸ್ಸು / AGE : 47  
ಶಿಕ್ಷಣ / EDUCATION : 8th  
ವಿಳಾಸ / Address : Bly

ದಿನಾಂಕ / DATE : 09/08/2023  
ಕ್ರ.ಸಂಖ್ಯೆ / DEPT OP NO. : 2/01/2023  
ಲಿಂಗ / SEX : M  
ಜಾತಿ / CASTE : Muslim  
ವೃತ್ತ / OCCUPATION :  
ರೋಗ / DIAGNOSIS : Smritinase

ವಿವರ / BPL CARD NO. :  
Duration :  
1) No Disturbed sleep, forgetfulness  
2)  
3) Bloaty & constipation; Atc pankree bc;  
4) LRA

On Examination :  
Nadi : 78/min  
Mutra : Vitabaddhe  
Mala :  
Jihva : Lipte  
Shabda :  
Sparsha :  
Drik :  
Akriti : Sthule  
CNS :  
HMF :  
Consciousness :  
Reflexes :  
Tone :  
Power :

CVS :  
Pulse Rate : .....bpm  
Heart sounds : S1S2  
BP : 110/80 mm of Hg  
Rs : NBBE  
Respiratory Rate : .....bpm  
Lung field : Clear  
P/A : Left  
Tenderness :  
Organomegaly :  
P/R :  
P/S : 1  
P/V :

ವಿವರ : ಈ ಆಸ್ಪತ್ರೆಯಲ್ಲಿ ದೊರೆಯುವ ಚಿಕಿತ್ಸಾ ಸೌಕರ್ಯವನ್ನು ಪಡೆಯಲು ಸರ್ಕಾರವು ಮುನ್ನಡೆಸುತ್ತಿರುವುದು, ಉಚಿತ ಸೇವೆ ಪಡೆಯಲಿಚ್ಛಿಸುವವರು ವಿವಿಧ ಅರ್ಜಿಗಳನ್ನು ಸಲ್ಲಿಸುವುದು ಕಡ್ಡಾಯ.

Figure 1 OP case sheet

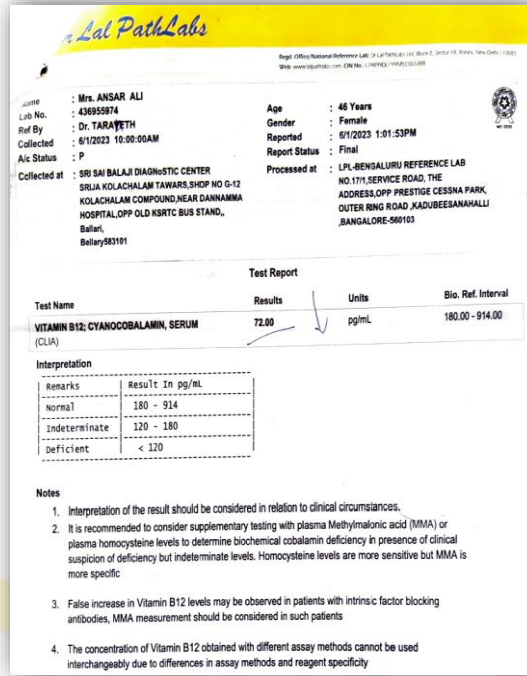


Figure 2 Vit B12 levels Before treatment

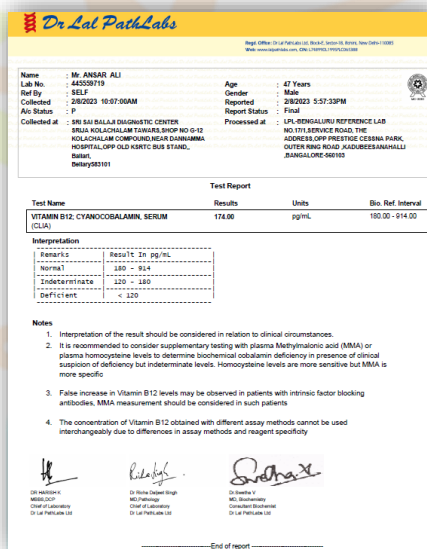


Figure 3 Vit B12 levels After treatment