

AYURVEDIC MANAGEMENT OF DEMENTIA DUE TO AUTOIMMUNE ENCEPHALOPATHY – A CASE REPORT

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ABSTRACT

Dementia is a chronic organic mental disorder characterized by progressive, usually irreversible global cognitive deficit. The clinical syndrome of dementia can be due to a variety of underlying pathophysiological processes. Individuals with autoimmune diseases may have an increased risk of developing dementia. Autoimmune encephalopathy become increasingly apparent and dementia may arise as a sub-acute or chronic complication of immune mediated injury to the central nervous system. It is a relatively new category of immune-mediated disease involving the central nervous system that demonstrates a widely variable spectrum of clinical presentations, ranging from the relatively mild or insidious onset of cognitive impairment to more complex forms of encephalopathy with refractory seizure. Due to the lack of decisive treatments in the conventional medicine, it is in need to find alternate effective therapy in order to prevent progression of the disease. Although this condition is not described as a separate entity among Ayurvedic classics, the signs and symptoms along with pathogenesis of dementia can be understood in terms of Ayurvedic concepts. Ayurveda refers this condition as *Smruti nasa* and its cause to be an imbalance in *Vata dosha* which naturally manifests with old age. Here is a case report of 65-year-old male diagnosed with dementia due to autoimmune encephalopathy which was treated for 21 days with a combination of *Panchakarma* procedures and selected Ayurvedic drugs. The condition of the patient was assessed before and after treatment using Alzheimer's Disease Assessment Scale (ADAS) in which there was considerable improvement without any adverse effect.

Keywords: Dementia, Autoimmune encephalopathy, *Smruti nasa*, ADAS (Alzheimer's Disease Assessment Scale)

INTRODUCTION

Dementia refers to an acquired syndrome of an individual cognitive decline that ultimately interferes with an individual's ability to manage their usual duties at work or home¹. The number of people living with dementia worldwide in 2017 was estimated at about 50 million, reaching 82 million by the 2030 and 152 million by

2050. The age is the most important risk factor for dementia. The incidence rises exponentially between the ages of 60-80².

The clinical presentation of dementia is characterized by impairment of intellectual functions, impairment of memory (predominantly recent memory in early

stages), and deterioration of personality with lack of personal care. Impairment of all these functions occurs globally, causing interference with day to day activities and interpersonal relationships. There is impairment of judgment and impulse control and impairment of abstract thinking. Additional features may also present such as emotional liability, catastrophic reactions and thought abnormalities, urinary and fecal incontinence, disorientation in time, place and person develops in late stages¹.

Dementia occurs when certain brain cells are damaged. Many conditions can cause dementia, including degenerative diseases such as Alzheimer's, Parkinson's etc. and autoimmune causes. Each cause of dementia causes damage to a different set of brain cells. Autoimmune encephalopathy refers to a group of conditions that occur when the body's immune system mistakenly attacks healthy brain cells leading to inflammation of the brain. People with autoimmune encephalopathy may have various neurologic or psychiatric symptoms. Neurologic symptoms may include impaired memory and cognition, abnormal movements, seizures and problems with balance, speech or vision. Psychiatric symptoms may include psychosis, aggressions, euphoria or fears, compulsive behaviors, panic attacks³.

The currently available drugs for the treatment of dementia do not alter the condition and progression of the disease. They produced various adverse effects when using for longer period⁴. Hence it is the need of time to search alternative effective therapy, which will alter the present condition and retard the progression of the disease.

Dementia is not met as a disease entity in separate chapters of Ayurvedic classics and refers to *Smruti nasa* and the cause is an imbalance in *Vata dosha* which naturally manifests with old age. *Manovaha srotas* or the channels that carry the cyclic impulses which are responsible for memory is afflicted by the *Dosha*, it leads to the malfunctioning of the mental activities. Ayurvedic management of dementia is by making *Tridosha* and *Triguna* in a well-balanced state and by providing *Medhya* effect to improve memory of the patients⁵. This case report is of a patient diagnosed with dementia

due to autoimmune encephalopathy which was successfully treated with Ayurvedic management.

Case Summary

A 65-year-old male from Malappuram was brought to Panchakarma OPD of VPSV Ayurveda College, Kottakkal on 23/11/2018 by his wife because of a 5-year history of memory impairment. He had worked abroad in a supermarket and for 8 years has been living in his native place. Five years back, initially patient noticed slight forgetfulness, but he didn't take care of that. His family reported that gradually the condition got worsened and which affected his daily activities like misplacing of objects, difficulty in wearing dress, disorientation of place. Two years back, he consulted an allopathic physician and on further evaluation diagnosed as dementia due to autoimmune encephalopathy. The CSF analysis showed CASPR 2 antibodies were strong positive and took medicines for that. But he did not get any relief and stopped the medicines 3 months back. Then he switched over the treatment to Ayurveda. Family history was negative with similar disease. Patient had sound sleep and adequate appetite but had some difficulty in micturition i.e. incomplete voidance of urine occasionally. Personal history revealed that he had mixed diet pattern and regular bowel movements. In his cognitive tests, he relatively preserved language function but he displayed impairment in recent and immediate memory and disorientation of time, place and person. Other symptoms of autoimmune encephalopathy were absent in him.

Based on clinical examination the case was diagnosed as dementia due to autoimmune encephalopathy. After 3 months of management at outpatient level, patient got admitted as inpatient in the Hospital on 28/2/2019.

Treatment:

The patient was subjected to different treatment procedures along with internal medicines (Table.1&2). During IP treatment the patient also underwent advises for Yoga (*Pranayama*) from Clinical Research Institute for Yoga and Ayurveda (CRIYA) for improving the concentration. After 21 days of treatment he got discharged on 21/03/2019 with follow up medicines (Table.3).

Table 1: Therapeutic procedures

Procedure done	Medicine	Dose	Days
Nasya	Anutaila	1 ml each nostril	3
Nasya	Kushmanda swarasa ghrita	1 ml each nostril	1
		2 ml each nostril	2
Sirodhara	Kalyanakam ksheerakashaya	3 Liter/day	14

Table 2: Internal medicines

Medicine	Dose	Time
1st week		
Gandharvahastadi kashaya	15ml + 60 ml luke warm water	6 am
Mahamanjishtadi kashaya	15ml + 60 ml luke warm water	6 pm
Gorochanadi gulika	1-0-1	6 am, 6 pm
Sankhapushpi churna + Vacha churna	1 g with honey	Bed time
2nd – 3rd week		
Gandharvahastadi kashaya	15ml + 60 ml luke warm water	6 am
Nirgundyadi kashaya	15ml + 60 ml luke warm water	11 am, 6 pm
Kushmanda swarasa ghrita +	5 ml	Bedtime
Cap. Rasa sindura +	1	
Cap. Yasada bhasma +	1	
Vacha churna	1 g	

Table 3: Follow up medicines

Medicine	Dose	Time
Gandharvahastadi kashaya	15ml + 60 ml luke warm water	6 am
Chandanadi kashaya	15ml + 60 ml lukewarm water	6 pm
Kushmanda swarasa ghrita	1 teaspoon	6 pm
Narasimha churna	10 g with milk	Bedtime
Ksheerabala taila	External application for head	

Criteria for assessment

To assess the effect of therapy, **Alzheimer's disease assessment scale (ADAS)** was used. It consists of cognitive and non-cognitive sections. Its cognitive section includes not only standard tests of language, comprehension, memory, and orientation but also tests of visual spatial ability, such as drawing geometric figures,

and physical tasks that reflect ideational praxis, such as folding paper into an envelope⁶.

ADAS was calculated Before Treatment (BT), 7th day of Sirodhara, After Treatment (AT), After Follow up (AF) - (Table 4).

Table 4: ADAS assessment

	BT	7 TH Day of Sirodhara	AT	AF
Spoken language ability	1	1	1	1
Comprehension of spoken language	1	1	1	1
Recall of test instructions	3	0	0	1
Word finding difficulty	4	4	4	1
Constructional praxis	5	2	3	2

Ideational praxis	4	1	1	1
Orientation	6	4	5	6
Word recall task	6	4	9	5
Word recognition task	0	0	0	0
Tearful	0	0	0	0
Depression	0	0	0	0
Concentration/Distractibility	4	4	4	1
Uncooperative to testing	0	0	0	0
Delusions	0	0	0	0
Hallucinations	0	0	0	0
Pacing	1	1	1	1
Increased motor activity	0	0	0	0
Tremors	0	0	0	0
Increased/Decreased appetite	0	1	0	0
Total	37	25	30	22

Outcome of treatment:

The treatment started with *Nasya* using *Anutaila* for 3 days and *Kushmanda swarasa ghrita* for another 3 days. There were no significant changes after *Nasya*. Noticeable improvements observed after 7 days of *Sirodhara*. Marked changes were seen in orientation, ideational and constructional praxis and word recall task. There was a change in ADAS score which reduced from 37 to 25. As there were positive changes, further *Sirodhara* was extended for 7 days. After the completion of 14 days of *Sirodhara* word recall task was found to be improved. After 1 month follow up, patient became more better, ADAS score was reduced to 22. Moreover, the patient was satisfied with the treatment.

DISCUSSION

Here the clinical presentation refers to *Smruti nasa*. According to Ayurveda, learning of knowledge is a result of successive and complex interaction and coordination of *Atma*, *Indriyas* and *Indriyarthas*⁷. The functioning of these factor is governed by *Tridosha* and *Triguna* in a specific coordination and balance. Any disturbance in these *Tridosha* and *Triguna* will cause disordered functioning of *Indriya*, *Mana* and *Buddhi* leading to impaired memory. *Doshas* plays vital role in maintaining cognitive functions. Any factors that impair the *Sa-reerika bhavas* will affect the *Manasika bhavas* also.

Vata regulates the proper functioning of *Buddhi*, *Indriya* and *Mana*. While *Pitta* enhances *Medha* and *Kapha* nurture *Dhee*, *Dhriti* and *Smruti*. Thus, the normalcy of *Tridosha* is essential for maintaining the cognitive condition.

As per Ayurveda *Pranavata*, *Udana vata*, *Vyana vata*, *Sadaka pitta*, *Tarpaka kapha*, *Rajo* and *Tamo gunas* were involved in the *Samprapti* of this case. *Rasa*, *Rakta* and *Majja dhatus* are vitiated. The affected *Srotases* are *Manovaha*, *Rasavaha*, *Raktavaha* and *Majjavaha*.

IP management started with *Gandharvahastadi kashaya* which is *Vatanulomana*. *Gorochanadi gulika* was also given which is *Tridoshahara* especially *Vata samana* and *Vata anulomana* and indicated in *Smruti nasa*. It has the property of *Srotosodhana* and *Indriyaprasadana* and *Medhya*⁸. In diseases with autoimmune pathology free radicals are generated subsequent to the inflammatory changes in such conditions and these cytotoxic reactive oxygen species cause oxidative damage to the cells. So, in such condition antioxidant drugs are beneficial. *Mahamanjishtadi kashaya* has antioxidant property⁹. *Sankhapushpi* is a *Medhya rasayana* and studies reported that it increases the brain protein content and enhance neuropeptide synthesis of the brain, so it has the brain nourishment effect and thus increasing acquisition efficiency and possess anxiolytic, memory enhancing and mood elevating effect. It

is claimed to retard brain aging¹⁰. *Vacha* increases memory power and coordination¹¹. Thus, *Sankha-pushpi* and *Vacha churna* were given together.

Smruti is the function of *Udanavata*. *Manobhramsa* is explained in the vitiation of *Udanavata*. While considering the *Sthanika dosha* which is *Prana vata* and *Tarpaka kapha* - *Nasya* is beneficial. Here *Nasya* is beneficial for delivering the therapeutic agents into the central nervous system (CNS). *Anutaila* is selected for this purpose. It has *Brimhana* and also *Tridoshagna* property.

Kushmanda swarasa ghrita contain *Kushmanda swarasa* and *Yashti kalka*¹². *Kushmanda* is one of the best *Medhya rasayana*. *Ghrita* is also considered as *Medhya rasayana*. *Kushmanda* possess *Mutrala* property and was suggested in this case since the patient had the complaint of incomplete voidance of urine. Keeping this background *Kushmanda swarasa ghrita* was selected for *Nasya* as well as internal administration.

The management of Dementia should always include the measures which can pacify the vitiation of *Vata* in head hence in the second stage, *Sirodhara* was selected. *Sirodhara* helps to improve memory and behavior and restore the necessary oxygen, blood supply and glucose to the brain cells and facilitating the relaxation of tight junctions in the vessels of CNS¹³. *Kalyanakam kashaya* possess significant neuro-psycho pharmacological activity. It is anti-depressant, anxiolytic and anti-psychotic agent¹⁴. *Ksheera*, have the properties of *Brumhana* (nourishing) and *Medhya* (memory enhancing). *Kalyanakam kashaya* was made in the form of *Ksheera kashaya* for enhancing the *Brumhana* (nourishing) and *Medhya* property (memory improvement) and used in *Sirodhara*. Overall treatment *Sirodhara* was found to be more beneficial.

Nirgundyadi kashaya is basically *Krimihara* (Anthelmintic)¹⁵ and was used to improve the immune system and body resistance against infections. Zinc is an essential trace element for the function of CNS and plays role in regulating the immune system. Altered zinc homeostasis is suggested as a risk factor for depression, AD, aging and other neurodegenerative disorders. Zinc deficiency may occur in autoimmune diseases¹⁶. The im-

portance of Zinc has already been identified by Ayurvedic scholars as it has been explained as having the property of *Viveka samrudhikaram* (improves intellect) and *Mastishka daurbalyahara* (brain nourishment and relaxation)¹⁷. *Rasa sindura* is an organometallic derivative of mercury and sulphur. It is used in wide variety of disorders especially those of auto immune origin. Studies showed that its improved memory and neuronal metabolism¹⁸. As per textual references *Chandanadi kashaya* is indicated for *Mastishka poshana* (nourishment to brain)¹⁹ so it was given in last stage. Dementia seems to be a *Yapya vyadhi* (difficult to cure) as per ayurvedic understanding of its pathogenesis. In such conditions *Rasayana* has a role to prevent or delay the progression of the disease hence *Rasayana* was included in the treatment and *Narasimha churna*²⁰ was given.

CONCLUSION

Dementia seems to be a *Yapya vyadhi* (difficult to cure) as per Ayurvedic understanding of its pathogenesis. Early detection of the problem and early starting of the treatment is required to prevent the progress of the disease. Ayurvedic approach to management with *Medhya rasayana* and *Panchakarma* therapy is useful in the treatment of dementia. This case study demonstrates that Ayurvedic management may give improvement in the wellbeing of dementia patient. *Panchakarma* procedures, *Rasayana* drugs along with support of Yoga has shown definite protective and rehabilitating influence and longer survival upon dementia.

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