

STUDY OF PRANAVRUTA VYAN WITH SPECIAL REFERENCE TO ALZHEIMERS DISEASE

Megha Gopichand Jadhav¹, A M Deshmukh², D J Amale³

¹P.G. Scholar of Rog Nidan Avum Vikriti Vigyan Department, ²Asso. Prof. Dr. M.D. (Kayachikitsa), ³Professor, M.D. (Rog Nidan)

Rog Nidan Avum Vikriti Vigyan Department, C.S.M.S.S. Ayurved Mahavidyalaya, Kanchanwadi, Aurangabad, maharashtra, India

ABSTRACT

It is assumed that each and every disease is manifested due to *Avarana*. *Prana Vayu* acts like a controller hence, *Gyanendriya* perceive their object with the help of *Prana Vayu*. *Vyan Vayu* is responsible for *Gati* or all types of neural conductions. Whenever *Prana Vayu* is restricted by *Gati* of conducting *Vyan Vayu* then *Indriya* will not be able to perceive their object. This type of *Paraspara Avarana* can be correlated with the Alzheimers Disease. In this disease macroscopically the brain becomes atropic so, does not retrieve information and later apraxia, visuo-spatial impairment and aphasia is seen. Hence correlation between *Samprapti Ghataka* of *Pranavruta Vyan* and pathophysiology of Alzheimers Disease is evaluated in this presentation.

Keywords: *Avarana*, *Avruta*, *Paraspara Avarana*, Alzheimers Disease.

INTRODUCTION

Avarana is one of the most difficult concept to understand, teach and incorporate in clinical practice. In *Ayurveda* only *Acharya Charaka* mentioned the type of *Paraspara avarana*.¹⁻² *Ayurveda* believes in different pathology which sets in different *Strotas* to produce different diseases. It is elucidated that *Ati Pravrutti*, *Sanga*, *Vimarga Gamana* and *Siranam Granthi* are different varieties of *Stroto Dushti* which result into diseases. *Nanatmaja vikara*, *Anubandha*, *Gata vata* and *Avarana* are different varieties of pathologies explained in *Ayurveda*. In *Paraspara Avarana* we can prove the correlation of *Pranavruta Vyan* with Alzheimers Disease. In this concept *Pranvayu* act like a controller which is responsible for *Adana karma* hence, *Gyanendriya* perceive their objects with the help of *Pranvayu*.³ Also *Vyanvayu*

is responsible for *Gati* or conduction and plays important role in *Rasavikshepan*.⁴ Whenever controller *Pranvayu* will restrict the *Gati* of conducting *Vyanvayu* then *Indriya* will not be able to perceive it's objects, there will be also loss of memory and strength.¹ In Alzheimers Disease there is premature ageing of the Brain.⁹ Macroscopically the brain becomes atropic, particularly cerebral cortex and hippocampus.⁵ Histology reveals the presence of senile plaques and neurofibrillary tangles in cerebral cortex. Histochemical staining demonstrate significant quantities of amyloid in plaques.⁵ Many different neurotransmitter abnormalities have been described in particular impairment of cholinergic transmission through non adrenaline 5H-T, glutamate and substance P is involved.⁵ Inability to retrieve information

(*Smriti Kshaya*) is the symptom. Later apraxia, visuo-spatial impairment and aphasia is observed.⁸ Hence, the correlation between *Samprapti Ghataka* of *Pranavruta Vyan* and Pathophysiology of Alzheimers Disease is evaluated in this topic.

AIM: Correlation of *Pranavruta Vyan* w.s.r. to Alzheimers Disease.

OBJECTIVES:

- To Study and Compile all the references of *Pranavruta Vyan* and Alzheimers Disease From all *Ayurvedic* Text and Modern Text.
- To correlate whole study with modern science.

DISCUSSION

When *Dosha* or *Dhatu* obstructs a particular *Dosha* then it will give to increase sign and symptoms related to functions of particular *Dosha* or *Dhatu* which has obstructed. The entity which get obstructed will show less sign and symptoms related to its normal functions. There must be a mutual occlusion of sign and symptoms of five varieties of *Vayu*. e.g: *Vyan vayu* occluded by *Prana vayu*.¹⁻² *Avarana Vayu* is strong and *Avruta vayu* is week.

When *Vyana Vayu* is occluded by *Prana Vayu* then there will be the loss of the functions of all the senses and there will be loss of memory as well as strength. Due to the *Paraspara Avarana* there is a *Vikruti* in the *Sthana* of *Prana Vayu* which is explained in the Alzheimers Disease.

Alzheimers Disease is defined as premature aging of the brain.⁹ The condition occurs after 5th decade of life. The exact cause is not known but few factors are implicated in etiologies which include positive family history and deposition of beta Amyloid derived from Amyloid precursor protein (APP) forming neuritic senile plaque and neurofibrillary tangles. The symptoms like loss of memory, apraxia,

aphasia and visuo-spatial impairment are observed in this disease.

CONCEPT OF PATHOLOGY OF ALZHEIMERS DISEASE:⁵⁻¹⁰

MACROSCOPIC CHANGES:¹⁰

1. Due to the *Vata prakopa* there is a *Shosha* which can be explained by Shriveling of Cortex and damage in the area involved in thinking, planning and remembering.
2. Due to the *Shosha* there will be Shrinkage in Hippocampus, an area of the Cortex which plays important role in formation of new memories.
3. Fluid filled spaces within the brain (Ventricles) get dilated and ie. *Koshtha* area becomes larger.

MICROSCOPIC CHANGES:¹⁰

- In the location of *Majja Dhatu*, *Vyanvayu* get occluded by *Pranvayu* hence, abnormal clusters of protein fragments called Plaques are built up between nerve cells.
- Dead and drying nerve cells contain Tangles which are made up of twisted strands of another protein.
- In Alzheimers disease Plaques and Tangles are prime suspects.
- Plaques forms when protein pieces called Beta Amyloid clump together. These Amyloids are sticky and gradually build up into Plaques; this procedure is *Vikruti Vishama Samavaya Lakshana*.
- Tangles destroy vital cell transport system due to *Kaphakshaya*, the transport system is organized in orderly parallel strands and this track stay straight due to protein called Tau
- Tau collapses into twisted strands called tangles, due to *Vayu Sancharana* there will be *Shosha* means nutrients and other essential supplies can no longer move through the cells hence, cells die.

SYMPTOMS:¹⁻¹⁰

SR. NO.	SYMPTOMS	PRANAVRUTA VYAN	ALZHEIMERS DISEASE
1	Early Stage	<i>Smruti Kshaya</i>	Loss of Memory Forgetfulness
2	Moderate Stage	<i>Bala Kshaya</i> Loss of function of some senses	Unable to Work, Daily Supervision required, Aphasia, Apraxia, Visuo-spatial impairment
3	Severe Stage	Loss of functions of all senses	Lose Ability to communicate, Recognize family and loved ones.

CONCLUSION

From above discussion, we can correlate *Pranavruta Vyan* with Alzheimers Disease by finding Macroscopic and Microscopic changes in the brain. Functional changes like *Smruti Kshaya*, *Bala Kshaya*, Loss of functions of all senses can be correlated with Loss of Memory, Forgetfulness, Unable to Work, Daily Supervision required, Aphasia, Apraxia, Visuo-spatial impairment, Lose Ability to communicate, Recognize family and loved ones respectively. Hence, we find that there is correlation between the Samprapti Ghataka of Pranavruta Vyan and pathophysiology of Alzheimer's disease.

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CORRESPONDING AUTHOR

Dr. Megha Gopichand Jadhav

Email: dr.megha974@gmail.com

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