



Review Article

AGE RELATED NEURODEGENERATIVE DISORDERS W.S.R TO DEMENTIA

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ABSTRACT

Aging can be defined as the gradual anatomical and physiological decline which begins to after the achievement of sexual maturity. *Vridhnavastha* (senility) is *Vata dosha* prominent phase of life. *Gunas* (qualities) of *Vata dosha* are degenerative by the nature which is increased; they result in degenerative changes in the body in terms of *Dhatukshaya*, *Ojakshaya* and *Balakshaya* which result in Neuro degeneration. Dementia is the progressive deterioration of intellect, emotional control, behavior and motivation along with loss of memory. *Vridhnavastha* (aging) is *Vata dosha* prominent *Avastha*. *Vata* has some *Guna* (qualities) that get involved in the degenerative process in the body like *Laghu guna* and *Khara guna* which is act as *Lekhaniya* (scraping), *Vishada guna* has *Kshalanashakti* (elution power) and, *Ruksha guna* has *Shoshanashakti* (absorbability), etc. With increasing *Vata dosha*, these above *Gunas* are also be increased, might be together or separately and will initiate the process of degeneration in the body in the terms of *Dhatukshaya*, *Ojakshaya* and *Balakshaya* causing various degenerative diseases. Dementia is one among them. Symptomatology of dementia are similar to *Vata vridhhi lakshana*, *Vata nanatmajavyadhi* and *Ojakshaya lakshana*. Manifestation of the disease condition is purely due to degenerative changes in senile periods. The disease condition is not a reversible but with the healthy changes in dietary habits and lifestyle, the disease condition might be preventable and delayed.

INTRODUCTION

Aging

Aging can be defined as the slow growing anatomically and physiologically declination which begins after the achievement of sexual maturity. Aging is strongly associated with increases in numbers of morbidity, mortality, grief, and loss of day to day functioning. [1]

Geriatric Giants

This term is coined by Bernard Issacs. It refers to the chronic disabilities of older people that have an impact on their physical, mental and social domains. [2]

Dementia

Dementia is the progressive deterioration of intellect, emotional control, social behavior and motivation associated with loss of memory. It is age related disorder. Usually, it occurs above the age of 65 years. When it occurs under the age of 65, it is called pre-senile dementia. [3] It affects 5-10 % of those above 65 years and 20-25% over 85 years. [4]

According to DSM-IV, the Diagnostic criteria for Dementia are as below:

- ✓ Memory impairment: Impaired ability to learn new information or to recall old information.
- ✓ One or more of the following:
 - Aphasia (Language disturbance);
 - Apraxia (impaired ability to carry out motor activities despite intact motor function);
 - Agnosia (failure to recognize or identify objects despite intact sensory function);
 - Disturbance in executive functioning- impaired ability to plan, organize, sequence, abstract.
- ✓ Cognitive deficits result in functional impairment

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(Social/ occupational).

- ✓ Cognitive deficits do not occur exclusively solely during a delirium.
- ✓ NOT due to other medical or psychiatric conditions.

Causes of Dementia

- ✓ Degenerative/ inherited:
 - Alzheimer disease (60 -70 %)
 - Neurodegenerative disorders: Frontotemporal Dementia (including Pick’s disease), Lewy body disease, Parkinson’s disease, Huntington’s disease.
- ✓ Vascular dementia (10-20%): Diffuse small vessel disease
- ✓ Neoplastic: Primary/ Secondary deposits
- ✓ Traumatic: Chronic subdural hematoma, posthead injury
- ✓ Infections: Creutzfeldt- Jakob disease, HIV, Syphilis
- ✓ Toxin/ Nutritional: Alcohol, Thiamine deficiency, Vitamin B12 deficiency
- ✓ Prion diseases

✓ Reversible dementia

Clinical Features of Dementia [6]

Cognitive Symptoms: Memory loss is the most common, and usually the presenting complain-patients have difficulty learning and retaining new information. In disease progression, remote memories are also be affected. Other cognitive defects include Anomia, Aphasia, Apraxia, Agnosia and Executive planning.

Non-Cognitive Symptoms: A wide range can occur including disorders of thought content (delusions of theft, infidelity and abandonment, persecutory ideation), disorders of perception (auditory, visual and other hallucinations) and misidentification. Disorders of affect and behavior- include depressive symptoms, hypomania, aggression, wandering, agitation, stereotypes, hypersexuality, hyper-morality and hyperphagia.

Here, an attempt is made to elucidate the symptomatology of dementia[7] with *Vata nanatmaja Vyadhi* [8], *Vata vriddhi lakshana*[9] and *Oja kshaya lakshana*[10].

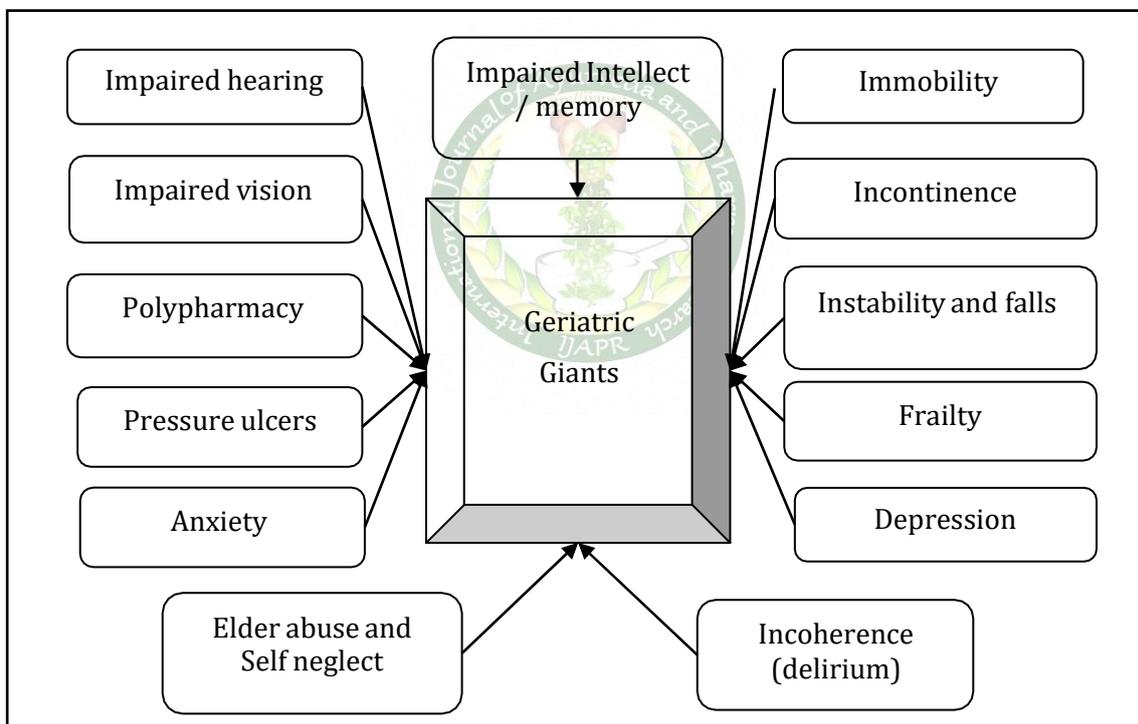


Figure 1: Shows Modern Geriatric Giants

| Symptomatology as per Ayurveda | References | Symptomatology as per Modern Medicine |
|----------------------------------------------|--------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Anavasthita Chittatva</i> (Unstable mind) | <i>Vata nanatmaja Vyadhi</i> | - Behavioral, Cognitive and Personality Changes |
| <i>Vishada/Shoka/Durmano</i> (Depression) | <i>Vata nanatmaja Vyadhi</i> <i>Vata vriddhi lakshana</i> <i>Oja kshaya lakshana</i> | - Decline in social interpersonal conduct disorders of thought content - Mental rigidity and inflexibility - Decline in personal hygiene and grooming |
| <i>Asvapna</i> (Insomnia) | <i>Vata nanatmaja Vyadhi</i> | - Sleep deprivation |
| <i>Vak sanga</i> (Obstructed Speech) | <i>Vata nanatmaja Vyadhi</i> | - Altered speech output (a spontaneity and economy of speech) |

| | | |
|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <i>Ghrana nasha</i> (Anosmia) | <i>Vata nanatmaja Vyadhi</i> | - Anosmia |
| <i>Mukatva</i> (Loss of speech) | <i>Vata nanatmaja Vyadhi</i> | - Mutism |
| <i>Sanjna nasha</i> (Loss of consciousness) | <i>Vata vriddhi lakshana</i> | - Emotional blunting |
| <i>Nidranasha</i> (Insomnia) | <i>Vata vriddhi lakshana</i> | - Insomnia |
| <i>Bala Upaghata/Durbalo</i> (Weakness) <i>Indriya Upaghata/ Vyathitendriya</i> (Altered/ loss of sensorium) | <i>Vata vriddhi lakshana/ Oja kshaya lakshana</i> | - Akinesia, rigidity - Decline in personal hygiene and grooming |
| <i>Dainya</i> (Misery) | <i>Vata vriddhi lakshana</i> | - Wandering |
| <i>Bhaya/Bibhetee</i> (Fear/Anxiety) <i>Dhyayati</i> (Deeply worried) | <i>Vata vriddhi lakshana Oja kshaya lakshana</i> | - Perseverations and stereotyped behavior - Agitation - Aggression - Utilization behavior hyperorality and dietary changes |

DISCUSSION

Ayurvedic perspective on Neurodegenerative disorders:

The life run of an individual is mainly divided into 3 phases: *Balavastha* (childhood), *Yauvanavastha* (middle age), and *Vridhdhavastha* (old age). *Acharyas* have an individual viewpoint on years computed for *Vridhdhavastha*. (age period above 60- 70 years).

The entire Ayurvedic science is built upon the *Tridosha Siddhanta*. The first stage- *Balyavastha* is governed by *Kapha dosha*. The second stage, *Madhyamavastha* is governed by *Pitta dosha*. And the third stage, *Vridhdhavastha* is governed by *Vata dosha*. *Vata* has some *Guna* (qualities) that get involved in the degenerative process in the body like *Laghu guna* and *Khara guna* which is act as *Lekhaniya* (scraping), *Vishada guna* has *Kshalanashakti* (elution power) and, *Ruksha guna* has *Shoshanashakti* (absorbability), etc. Whenever *Vata dosha* is aggravated, these above *Gunas* are also be increased; will initiate the process of degeneration in the body in the terms of *Dhatukshaya*, *Ojakshaya* and *Balakshaya* etc. *Charaka Samhita* mentioned *Kaala* (aging) is one of the causes of *Ojakshaya*. Many symptoms of Dementia are similar with *Ojakshaya lakshana*.

Vata dosha gets increased in *Vridhdhavastha* physiologically, but apart from this, there are many factors that play a triggering role in the provocation of *Vata*. Disharmonious behavior to *Trayo upastambha* is one of the leading causes for early aging by increasing *Vata dosha* and *Ojakshaya*.

➤ **Ahara:** *Ahara* is one key factor for maintaining growth and development. There are some dietary guidelines and rules are given by *Acharyas*, if they not followed properly they result in an imbalance in *Doshas*. *Anashana*, *Ruksha*, *Alpa ahara*, *Hina matra ahara*, *Vata* aggravating *Ahara*, *Asnigdha ahara*, etc might result in *Vata vriddhi* and also *Ojakshaya*. If an

individual is taking above kind of food for a long period of time, the degenerative changes will be started in his body, because of mal- nutrition and if person may suffering from *Vata vriddhi* which might result in *Dhatukshaya*, *Ojakshaya* (degeneration), etc. *Ashtanga Samgraha* has mentioned some demerits of *Hina matra ahara*, (less quantity of food) viz. *Vataroganam hetu* (manifesting *Vatajanya roga*), *Aojaskara* (not manufacturing *Oja*), *Sharira Mana Buddhi Indriya Upaghatakarak* (loss of body, mind, intellect and sensorium) etc.

➤ **Nidra:** *Ratri jagaran* (night vigils) causes *Vata vriddhi*. *Caraka Samhita* has stated that if a person will not takes proper sleep, will get like *Dukha* (misery), *Karshya* (emaciation), *Klibata* (frigidity), *Jnana* (ignorance), and *Abala* (weakness).^[11] All the above demerits are caused by *Vata vriddhi*. *Prajagara* (lying awake at night) is one the cause for *Ojakshaya*^[12].

➤ **Brahmacarya:** If the person would have to be associated with excessive sexual activity, his *Shukra dhatu* will be depleted, and then after his *Purvo-purvottara dhatu*s will be diminished over time. This happens due to *Vata prakopa*. In *Samhitas*, *Ati vyayama* (excessive exercise) or *Ati vyavaya* (excessive sexual intercourse) are said to be a *Vata prakopaka*. Excessive loss *Shukra* is one of the etiological factors of *Ojakshaya*.

CONCLUSION

Symptomatology of dementia are similar to *Vata vriddhi lakshana*, *Vata nanatmajavyadhi* and *Ojakshaya lakshana*. Manifestation of the disease condition is purely due to degenerative changes in senile periods. When disease condition get started, it is not a reversible but with the changes in dietary habits and lifestyle in the terms of maintaining harmony in

Trayo Upastambha, the disease condition might be preventable and delayed.

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