



## ROLE OF AYURVEDA DRUGS & PANCHKARMA PROCEDURES IN CEREBRAL ATROPHY: A CASE STUDY

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### ABSTRACT

Aging and increasing number of elders in population is a matter of great significance because of its likely impact on public health. Atrophy of any tissue means loss of cells. Cerebral atrophy is a common feature of many of the diseases that affect the brain. In brain tissue, atrophy describes a loss of neurons and the connections between them. Atrophy can be generalized, which means that all of the brain has shrunk; or it can be focal, affecting only a limited area of the brain and resulting in a decrease of the functions that area of the brain controls. Diseases that cause cerebral atrophy include stroke and traumatic brain injury Alzheimer's disease, Pick's disease, and fronto-temporal dementia cerebral palsy. This particular disease is not described in *Ayurveda* but cerebral atrophy may be considered as *mastiska-gata majja dhatu kshaya*. Because old age is the period for vata aggravation thus atrophy is common in old age. In it, *vata prakopa* seen so that *vata shamaka ahara-vihara, snehana karma & brihan nasya* along with *Aswagandha* tablet with *mansyadi kasaya* have a role to manage this disorder. In wholesome complete cure of cerebral atrophy cannot be achieved but beneficial to prevent further degeneration or slows down the progressive degenerative changes.

**KEYWORDS:** Cerebral atrophy, *Majja dhatu kshaya, snehana karma & brihan nasya, Aswagandha, mansyadi kasaya.*

### INTRODUCTION

Nowadays aging related diseases are Osteo-arthritis, Alzheimer's disease, Cerebral atrophy, Diabetes, Cardiovascular diseases are increasing & likely impact health and socio economic growth of nation. Cerebral atrophy is common age related neuro-degenerative condition where there is wasting and shrinkage of brain occurs. According to *Ayurveda*, brain is made from *Ashtanga Sangraha* in *Shareera Sthana* differentiates the difference between *Masthulanga Majja*. He says *Majja* that is present inside the *Masthishka* is *Mastulanga* and which is present inside the *Sthulasthi* is *Majja*. *Dalhana* that the ghee like material present in *Masthishka* called *Masthaka majja* or *Mastulunga*. Marrow, as in bone-marrow (*asthi-majja* the term has become synonymous with nervous system, which is encased within bone like bone marrow. The skull is the casing of the brain. The vertebrae are the casing of the spinal cord. While the brain and spinal cord make up the central nervous.

*Ayurveda* being science of life and longevity offers a treasure of geriatric care with goal of healthy aging and

long life to achieve *purushartha chatustaya*. Atrophy is age related degenerative condition where there is wasting of muscles, brain tissue and shrinkage of memory, seizures; difficulty in speaking words, improper gait is some of its symptoms. This particular disease is not described under any *vyadhi* but it may be considered as *mastiska-gata majja dhatu kshaya*. Because old age is the period for *vata* aggravation thus atrophy is common in old age. According to *Ayurveda* cerebral atrophy is caused due to which controls motor and sensory activities. *Shira/Mastiska* controls the entire body functions, it regulates all sense organs and prana. *Sushruta* mentioned, main line of treatment in *shirogata vata under vatavyadhi chikitsa* "*Murdhni Sneho anilam hanti*"- taila is best vatahara. With this complete reversal cannot be achieved but beneficial to prevent further degeneration or slows down the progressive degenerative.

### Pathophysiology

The weight of entire brain reduces due to loss of neurons and connection between them, which can be due to progressive loss of cytoplasmic proteins. The aging brain

gradually loses neurons and supporting neurological cells. Between the age 20- 60 years brain loses around 0.1% neurons per year, after which the process speeds up. Individuals in their 50s, which equates to a loss of about 150gm of neural tissue. Hippocampus - has key role in memory and the acquisition of new skills. With age it loses significant amount of neural tissue. During normal aging, Blood brain barrier first weakens in the hippocampus, thereby allowing harmful substances and pro-inflammatory mediators to cross in to vital region of learning and memory. This breaching of Blood brain barrier may contribute to hippocampal shrinkage and therefore to cognitive decline. Neurotransmitters - Aging is associated with declining production of nor-adrenaline, glutamate, dopamine, and serotonin. The most common symptoms are confusion, difficulty in concentration, Behavioral- Aggression, Irritability, Restlessness, Psychological-depression, anger, Mood swings. Although Ayurveda has no equivalent term for cerebral atrophy, According to Ayurveda it can be inferred that it may be because of disruption of *prana vata* which is key factor in controlling motor and sensory activities.

#### Jara Avastha

It is represented by predominance of *vata dosha* thus atrophy is common in old age. *Shiras* is *uttamanga*, one among *trimarma* and *dashapranayatana*. This being chief site of *pranavata*. *Prana vayu* commands *Buddhi*, *hridaya*, *indriya*, and *chitta*. This shows that the higher functions including perception of sense objects, the motor signals in response to the sensory signals, the thought processes, the intelligence and application of intelligence so as to lead the day to day activities, integration of mind and sense organs and all mental functions are manipulated, controlled and governed by *prana vata*. *Sneha* is best *vatahara dravya* thus *murdhni taila* can help a lot firstly as preventive through shiro abhyanga it does tarpana and then by delaying the process of neuron degeneration when advised as therapy

Thus, nerve pathologies cause symptoms commonly associated with *vata*, such as pain and alteration of motion. *Majja* is *aap mahabhutha pradhana*. When *vata dosha* has entered the *majja dhatu*, the best treatment is to increase the quantity of water element in the diet. Water is found in the largest amounts in moist, oily foods and in those that are the most nourishing. Milk and ghee are the two most important substances. Milk and ghee restore deficient *majja dhatu*.

According to *Charaka*, all *Dhatu*s get increased by the use of substances having similar properties and they get reduced by the use of those having opposite properties. So, in *majja dhatu kshaya*, where there is depletion of fat, *sneha karma* will be the apt treatment to restore the structure and function of the tissue. Two fold treatments are needed simultaneously — Structural Restoration and Functional Restoration Focusing on these principles a single case study has been done in a patient with mild diffuse cerebral atrophy to see the effect of a regimen of

different *bahya* and *abhyantara snehana* procedures sequentially along with some medhya drugs.

#### Case presentation

A male patient aged 68 years presented to the *kayachikitsa* department at Apex institute of *Ayurvedic* Hospital Chunar, complaining of headache which is continuous and dull in nature, persisting for whole day with nausea and insomnia since 7 months.

#### History of present illness

The patient was suffering with headache which was dull and continuous in nature associated with nausea since 8-9 months. 7 months back, she experienced an episode of severe headache, nausea & occasional vomiting. He had consulted a neurologist and mild diffuse cerebral atrophy was found in MRI. Since then he was using the medicine Tab. Sibellium 10 mg at bedtime and Tab. Clonazepam 0.25 mg BD.

#### Past history

Patient had a history of mental tension and stress due to family issues. He was suffering from constipation & insomnia with palpitation since 7-8 years and was on laxatives for a long time.

#### Diagnosis

The present condition of the patient can be attributed to *majja dhatu kshaya* with vitiation of *vata* leading to *shirashoola* and *nidranasa*. MRI gave an impression of mild diffused cerebral atrophy.

#### Therapeutic focus

The patient was treated in *Kayachikitsa* & *panchkarma* unit in that *Nasya* and *Brimhana snehapana* were done for 15 days regularly then after *sirodhara* procedure 2 cycles of *shirodhara* were planned with a gap of 15 days in between. The 2 cycles of *Shirodhara* were targeted towards correcting the mental stress and insomnia.

The schedule followed is given below:

1. *Pratimarsha nasya* for 15 days.
2. *Shiropichu* for 15 days.
3. *Brimhana Snehapana* for 15 days &
4. *Shirodhara* for 15 days in 2 cycles.

#### Drugs for Procedures

*Shirodhara* with *Brahmi tailam* mixed with milk, *Nasya* with *Balaswagandha tailam*, *Ksheerabala* 101 aavarthi Capsule 1 twice a day with *Shatavari ghritam* as *abhanyantara snehan* with milk & *Shiropichu* with *Brahmi tailam* & *Balaswagandha tailam*.

During the whole procedure patient was given *Aswagandha* tablet 500mg BD and *Mansyadi kwath* 4teaspoon full with *sama bhag* luke warm water after breakfast.

### Outcome

Positive changes were seen as early as 3rd day of the treatment. There was improvement in sleeping habits. During the course of 2 cycles of *Shirodhara*, the dosage of tablet clonazepam was decreased. Patient was advised to take *Pratimarsha nasya* and *Brimhana snehapana* for 15 days before going for the second cycle of *Shirodhara*. Subsequently he was asked to taper the dose of Tab. Sibellium 10mg during these 15 days to half of its initially prescribed dose. The patient was quite comfortable despite the fact that Tab. Clonazepam has been totally weaned off and Tab. Sibellium dose was reduced to half of its prescribed schedule. Once comfort was reported by the patient in terms of total remission of headache and sleep disturbance, Tab. Sibellium was completely withdrawn. The patient showed significant improvement after two cycles of *Shirodhara* and reported that there was marked relief in headache and positive change in sleeping habits.

### DISCUSSION

*Ayurveda* understands pathology as the derangement/disturbance in body constituents i.e. *Dosha*, *Dhatu* and *Mala*. The goal of the treatment is to bring them back to equilibrium. According to *Susrutha*, the treatment principle of *ayurveda* is *Nidana parivarjanam*. The decreased *doshas* should be increased, aggravated *doshas* should be decreased and increased *doshas* should be sent out. Based on this principle, we have selected *Shirodhara* for stress management (which is the main cause for the headache), *Brimhana nasya* for the degeneration of brain tissue, *Brimhana snehapana* and *Shiropichu* for *vata niyamana* in *shiras*. The medicated oil that is poured from a height of 4 *angulas*, as a part of *Shirodhara*, on the forehead produces some magnetic waves due to flow of oil. It strikes on surface of the skin and electrical waves are created and transferred to the cerebral cortex and hypothalamus. Hypothalamus acts as center of stimulation and inhibition in the body.

Hence, soothing effect is created on the hypothalamus. It results in the secretion of various neurotransmitters like epinephrine, serotonin, dopamine, etc. Hypothalamus controls the function of pituitary gland, which in turn controls all systems of the body. It is explained that *Nasa* being the door way to the drug administered through nostrils, reaches *Shringataka* by *Nasasrota* and spreads in the *Murdha* taking route of *Netra*, *Shrotra*, *Kanta*, *Siramukhas* etc. and scrapes the morbid *doshas* in supraclavicular region and extracts them from the *Uttamanga*. Oil being lipophilic in nature has the capacity to cross the blood brain barrier, and can exert its direct Neuro-supportive role to the CNS. *Shiropichu* comes under *Murdhni taila*. It is very effective in preventing headache, inducing good sleep, controlling *vayu*, relaxing the central nervous system, thereby nourishing the brain with rich blood supply and oxygen. When *sneha* is given externally, drug undergoes *pachana* by *bhrajaka pitta*. Thereby, *virya* of drugs gets absorbed through *romakupa* and *dhamani*. It circulates and does

nourishment of *dhatu* and *shamana* of *doshas*. *Snehapana* with *Ksheerbala Awarthi 101 ghritha* capsule with *satavari ghritha* has been given as *Brimhana snehana*. *Ghritha* was selected because it is *smrithi*, *buddhi*, *kapha*, *medo vivardhanam*.

### CONCLUSION

This case report demonstrates that *Ayurvedic* Procedures (*panchkarma*) therapies have significant role in cerebral atrophy. Condition of the patient has been improved significantly. Chief complaints like headache, insomnia showed a sustained gradual improvement with *Shirodhara*, *Brimhana Snehapana*, *Shiropichu* and *Nasyakarma*. These therapies have improved the quality of life of the patient considerably. These results give in to contemplating the need of inclusion of *Ayurvedic* procedures & medications in neurodegenerative disorders, thereby strongly supporting the necessity of integrated medicine.

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