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Role of *Shashtika Shali Pinda Sweda* in the Management of Cerebral Palsy: A Review

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ABSTRACT

Cerebral Palsy (CP) is the primary cause of incapacity affecting function and development in childhood. In India approximate incidence of cerebral palsy is around 3 per 1000 live births. It is a non-progressive neuromotor disorder of cerebral origin. It includes different variety of clinical features of various etiology and severity starting from slight disability to absolute handicap. It is typically caused by an injury to the brain before, during or after birth, however there could be no obvious single reason. Although clinical features of CP changes from individual to individual but all person with CP have difficulties with movement and posture. Many also have related conditions such as intellectual disability, seizures, problems with vision, hearing, or speech, changes in the vertebrae (such as scoliosis), or joint problems (such as contractures). Considering all these characteristic features, Cerebral Palsy can be correlated to *Vatavyadhi*, that may manifest as such in any form like *ekangavata*, *sarvangavata*, *pakshaghata*, *pangu*, *kampavata* etc. Although Cerebral Palsy cannot be treated, treatment will generally enhance a child's abilities. *Swedana* (sudation) is the therapy that relieves the *Stambha* (Stiffness) of the body, mitigate feeling of *Guruta* (Heaviness) and *Sheeta* (feeling of cold). *Shashtika Shali Pinda Sweda* comes under the category of *Saagni Sweda* with *Snigdha Dravya* as milk and *Shali Dhanya* (rice harvested in 60 days). It has *Snigdha*, *Guru*, *Sthira*, *Sheeta*, *Tridoshaghna* and *Brimhana guna* (nourishing properties). In this article, an attempt has been made to search the research conducted on *Shashtika Shali Pinda Sweda* to establish its role in Cerebral Palsy.

Key Words: *Ayurveda, Vatadosha, Cerebral Palsy, Swedana, Shashtika Shali*

INTRODUCTION

Cerebral Palsy is a blanket term often referred to as "CP". The term "Cerebral" refers to the brain, and "Palsy" refers to muscular weakness. It is the commonest cause of physical dysfunction in children. It includes a group of non-progressive and noncontagious disorders causing physical incapacity mostly in the different areas of body movement¹. Cerebral Palsy (CP) is defined as a

non-progressive neuromotor disorder of cerebral origin. It includes different variety of clinical features of various etiology and severity starting from slight disability to absolute handicap. Most of the cases have multiple neurological deficits and variable mental handicap. It is not a progressive, metabolic or degenerative disorders of the nervous system. It is difficult to estimate the precise magnitude of the problem since mild cases



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are expected to be missed. Approximately, 1-2 per 100 live births is a reasonable estimate of the incidence². According to World Health Organization (WHO), 10% of the world's population has some type of disability due to various etiology, in India, it is 3.8% of entire people. Nearly 15-20% of the total physically disabled children suffer from cerebral palsy (CP). For India, the approximate incidence is around 3/1000 live births; but, being a developing country, the expected actual figure could also be much higher.³. Factors may operate prenatally, during delivery or in the postnatal period. Cerebral malformations, perinatal hypoxia, birth trauma, chorioamnionitis, prothrombotic factors, acid base imbalance, indirect hyperbilirubinemia, metabolic disturbances and intrauterine or acquired infections may operate. Spastic diplegia mainly occurs due to prematurity while quadriplegia or hemiparesis occurs in term weight baby. The importance of role of birth asphyxia has been questioned by recent data and asphyxia may be manifestation of the brain damage rather than the primary etiology. A different kind of pathological lesions such as cerebral atrophy, porencephaly, periventricular, leukomalacia, basal ganglia thalamic and cerebellar lesions may be observed. The most common presentation of CP is hamper in motor development such as sitting, control of head standing and walking. Abnormal muscular tone, reflexes or motor development and coordination found in all types of CP. Other features include asymmetrical reaching for objects, abnormal movements and postures.

Associated manifestations include delay in speech, visual difficulties, intellectual disability and seizures¹.

Cerebral Palsy is classified on basis of topographic distribution, neurologic findings and etiology. It affects the messages sent between the brain and muscles in the body. There are three variety of Cerebral Palsy namely Spastic, Athetoid (or dyskinetic) and Ataxic CP. These three types relate to the part of the brain that has been damaged or affected. The effects of Cerebral Palsy vary extensively from person to person, with some individual facing a combination of two or more types².

Spastic cerebral palsy:²

Spastic means 'stiff'. This type of cerebral palsy causes the muscles to stiffen and reduces the scale of movement in the joints. It is the most commonest form (65%) of cerebral palsy and is classified into spastic quadriplegia (dysfunction of all four extremities), diplegia (dysfunction of both legs) or hemiparesis (unilateral motor dysfunction) and happens in three-quarters of individual affected. On vertical suspension, the baby goes into scissoring because of adductor muscle contraction with an extensor posture and does not bend his knees or thigh. The stretch tendon reflexes are every time brisk. They have variable degrees of mental and visual disability, seizures and behavioural problems. Mild symptoms of cerebral palsy are ambulatory; these account for only 20% of patients. Moderately affected patients attain ambulation by help, may be managed and treated at outpatient level and



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include 50% of the patients. Severely affected children and those with several deficiency account for the rest one. The diagnosis of Cerebral Palsy is generally made based on the clinical picture. There are no definitive laboratory investigations for diagnosis of this disease. However Cranial imaging studies specially MRI scan is necessary to evaluate brain damage. Depending on the clinical picture, ophthalmic assessment, hearing tests, speech and language assessment, psychological educational assessment, Electroencephalogram (EEG) and other investigations should be done.

Management of baby with CP involves a multidisciplinary team, which should include a developmental pediatrician, physiotherapist, occupational therapist, orthotic specialist, orthopedic surgeon, psychologist, educational specialist, speech pathologist and social worker along with consultants in neurology, psychiatry, ophthalmology, assistive technology and otolaryngology as necessary¹.

Reduction of spasticity is only mainstay of the overall management of the Cerebral Palsy. According to the modern medicine, Baclofen and Tizanidine help to reduce spasticity and muscle relaxers can be used for improving muscle function. Dantrolene sodium helps in relaxation of skeletal muscles. Sedatives are administered for behavioural disturbances. Symptomatic treatment is prescribed for seizures. Plastic orthoses may aid to prevent contractures². As all these modern measures and medicines are only helpful for mild reduction of spasticity, they have limited benefit. Moreover higher dosages and prolong use of these

medicines causes systemic and central side effects hence limiting their usefulness.

Cerebral Palsy can't be co-related with any single disease or condition in *Ayurveda* as it is a multicomponent condition. Almost all major neurological disorders are identified with *Vatadosha*. So, considering their respective characteristics, Cerebral Palsy can be correlated to *Vatavyadhi*, which may show as such in any form like *ekangavata*, *sarvangavata*, *pakshaghata*, *pangu*, *kampavata* etc., and diagnosis is based on the clinical features. *Swedana* (fomentation) is a unique treatment of *Ayurveda* which provides effective relief in pain and stiffness. Present review is focused on *Shashtika Shali Pinda Sweda* which are often used and got fruitful result in the management of CP in children.

AIMS AND OBJECTIVES

- The present review is aimed at analyzing the role of *Shashtika Shali Pinda Sewda* in the management of Cerebral Palsy.
- To review the research articles related to *Shashtika Shali Pinda Sweda* useful in Cerebral Palsy.

MATERIALS AND METHODS

For the present Review study, the available classical *Ayurveda* literature like *Samhitas*, *Ayurveda* Pediatric books, modern Pediatric books, magazines, Journals, thesis, different databases are reviewed for disease and treatment. All the relevant content is considered and analyzed



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to get a comprehensive concept in the treatment of Cerebral Palsy. *Ayurvedic* texts referred are *Charaka Samhita*, *Sushruta Samhita*, *Ashtanga Hridayam*, *Kashyapa Samhita*.

Considering all features of Cerebral Palsy it can be correlated to *Vatavyadhi*, which may show itself in any form like *ekangavata*, *sarvangavata*, *pakshaghata*, *pangu*, *kampavata* etc.

According to *Kashyapa Samhita*, *Staimitya* (stiffness), *Shula* (pain), *Kathinya* (hardness), *Vibandha* (constipation), *Anaha* (abdominal distension), *Vakgraha* (dumbness), *Hrillasa* (horripilation), *Aruchi* (anorexia), *Alasaka* (meteorism), *Sheeta Asaha* (intolerance to cold), *Vepana* (tremors) are relieved by *Swedana*. Disorders which originate from *Vata* and *Shlesma* are best indicated for *Swedana*. In *Vata pradhana roga*, *Snigdha Swedana* (sudation by unctuous materials) and in *Kapha pradhana roga*, *Ruksha Swedana* (sudation by dry materials) should be done⁴.

The procedure that alleviates the *Stambha* (Stiffness) of the body, relieves sense of *Guruta* (Heaviness) and cures *Sheeta* (feeling of Cold) is called as *Swedana*⁵. *Acharya Charaka* said that even dry pieces of wood bend by means of oleation and fomentation, duly applied, then how living human beings (can not be benefitted)⁶. *Swedana* (sudation) is categorized into many considering the materials used, method of use and application of heat in the procedure. According to *Charaka Samhita* there are about 13 types of *Saagni Sweda* (fomentation with heat source)⁷ and 10 types of *Niragni Sweda* (fomentation without

heat source)⁸. *Vagbhata* described four kinds of *Swedan* (sudation)- *Tapa* (fomentation), *Upanaha* (warm steam) and *drava* (pouring of warm liquid)⁹. All types of *Swedana* can give relief from pain, stiffness. Area of utilization and mode of application of *Swedana* depends upon the pathological condition of the disease. *Pinda Sweda* is incorporated in principles under *Ushma Sweda*.

Shashtika Shali Pinda Sweda comes under the category of *Saagni Sweda* with *Snigdha Dravya* as *Ksheera* and *Shali Dhanya* (rice harvested in 60 days). It has *Snigdha*, *Guru*, *Sthira*, *Sheeta* and *Tridoshaghna* properties. It is a *Swedana karma*, but possesses *Brimhana guna* (nourishing properties)¹⁰.

Procedure of *Shashtika Shali Pinda Sweda*¹⁰:-

Preparation of Medicine:-

Balamoola Kwatha- 250 mg of *Balamoola* (root of *Sida cordifolia*) is washed, cutted into small pieces and subjected to boil in 4 litres of water and decreased to 1 litre. (1:16 parts and reduced to 1/4th).

Shashtika Rice Cooking- In 0.5 litre of *Bala* root *kwatha* (decoction) and 0.5 litres of milk, 250 gm of *Shashtika* rice should be putted and cooked till it becomes semisolid like rice pudding. Adequate amount of warm water can be added for proper cooking of the rice.

Preparation of Pottali (Boluses):-

The cooked *Shashtika* rice is equally divided into 4 parts and taken into 4 pieces of cotton clothes. It should be tied to make *Pottali* (bolus) for easy holding.



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Purva karma (Pre-operative procedure):-

The patient is seated on *droni* (massage table) by extending both legs. *talam* (special powder mixed with medicated oil applying on the top of the head) should be applied. *Abhyanga* (massage) should be done by specific oil near around 20 minutes. Among 4 *pottalis* 2 are kept in the mixture of milk and *balamoola kwath* in a pan and put on mild fire.

Pradhana karma (Main procedure):-

Two *pottali* taken from warm pan and touch them on dorsum of hand to make sure that the temperature of *pottali* is tolerable to the patient. It should be applied in a synchronized way by two therapists on both sides of *droni* (massage table). The temperature of the *pottali* should be maintained all over the process by immersing in mixture of milk and *Balamoola kwath* (decoction). The process should be done up to the patient gets *Samyak Snigdha Lakshana* (signs of proper sudation).

Paschat karma (Post-operative procedure):-

At the end of procedure, the medicine remained over the body should be scraped off and body is wiped with soft towel. *Rasnadi churnam* is applied on the head after removing *talam*. The patient is allowed to take rest for at least 30 minutes, and then take bath with lukewarm water.

DISCUSSION

Pain and stiffness of muscles in Cerebral Palsy mainly occurs due vitiation of *Vata*.

Probable mode of action of *Abhyanga*-¹²

The *Abhyanga* should be done before *Shashtika Shali Pinda Sweda*. The effect of *Abhyanga* can be

supposed by two means i.e. physical manipulations and the effect of medicated oil. *Bala* is *Vatashamak* and *Balya* that absorbed locally with the help of oil media gives nourishment to muscle preventing from atrophy of muscles and improving muscular tone. Application of pressure done in correct manner may decrease the alpha motor neuron activity and thus decrease hyper excitability of motor neuron. The mechanism of action is not clearly known and the amount of pressure to be given to stimulate deep tendon receptors or superficial mechanoreceptors is still not properly understood. A study mentioned that on continuous or intermittent pressure given on tendon in the patient of muscle weakness of one side, the H reflex was decreased. Further it shows that intermittent pressure was better efficacious than continuous. In a study massage therapy showed good result in the symptoms of Cerebral Palsy of children. In this way *Abhyanga* acts by the help of the *Guna* (properties) of *sneha* (oil) thus mitigate vitiated *Vata*.

The amount of pressure to be given to stimulate deep tendon receptors or superficial mechanoreceptors is still not properly understood. A study reported that in hemiparetic subjects the H-reflex was depressed during both continuous and intermittent tendon pressure. Intermittent pressure was more effective than continuous.

Probable mode of action of *Shashtik Shali Pinda Sweda*-¹²

Shashtika Shali (rice) is *Snigdha*, *Balavardhana* and *Deha dardhyakrita*. *Bala* and *Godugdha* is



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Snigdha, *Balya*, *Rasayana* and *Vatahara*. The warmth supplied by *Pottali* (bolus) of *Shashtik shali* dipped in *Balamoola kwath* with *Godugdha* may enhance the blood circulation, decrease muscular stiffness, increase tendon extensibility and give relief from pain. *Bala* prevents from emaciation through local absorption into muscular tissue. Thus effect of both *Abhyanga* and *Shashtik shali pinda sweda* along with Physiotherapy helps in reducing spasticity, facilitating the movement of the joints and preventing from advancement of disabilities and contractures.

CONCLUSION

Although Cerebral palsy is incurable, but *Ayurveda* can give a better control by enhancing the quality of life of children having Cerebral Palsy with better longevity. The effect of *Shashtika Shali Pinda Swedana* is helpful in reducing the spasticity, joint deformities and prevention of contractures and thus improving muscle tone, gain in muscle strength & proper nourishment of *dhatu*s.

From this review, it can be concluded that *Shashtika Shali Pinda Sweda* can be used for the management of pain, stiffness in Cerebral Palsy. This is attempt to describe information regarding *Shashtika Shali Pinda Sweda* in the management of Cerebral Palsy in this Research article.

Future studies can be conducted on large number of patients of Cerebral Palsy to establish its efficacy and mechanism of action.



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REFERENCES

1. Parthasarathy A, IAP Textbooks of Pediatrics, 5th edition, New Delhi, Jaypee Brothers Medical Publishers (P) Ltd ; 2013. Page no. 407,408.
2. Paul Vinod K & Bagga Arvind, Ghai Essential Pediatrics, 8th edition, New Delhi, CBS Publishers & Distributors Pvt Ltd; 2013, pg no. 581-583.
3. <https://pubmed.ncbi.nlm.nih.gov/24049406/>
4. Tewari P.V., *Kashyapa-Samhita*, 1st edition, Chaukhambha Visvabharati, Varanasi, 1996, *Sutra sthana* 23/6-7, page no. 37.
5. Shastri Kashinath, *Agnivesh's Charaka Samhita* with Ayurveda Dipika Commentary by Chakrapanidatta with Vidyotinihindi commentary, Varanasi, Chaukhambha Sanskrit Academy, reprint edition, 2018, Part 1, *Sutrasthana* 22/11, page no. 424.
6. Shastri Kashinath, *Agnivesh's Charaka Samhita* with Ayurveda Dipika Commentary by Chakrapanidatta with Vidyotinihindi commentary, Varanasi, Chaukhambha Sanskrit Academy, reprint edition, 2018, Part 1, *Sutrasthana* 14/5, page no. 281.
7. Shastri Kashinath, *Agnivesh's Charaka Samhita* with Ayurveda Dipika Commentary by Chakrapanidatta with Vidyotinihindi commentary, Varanasi, Chaukhambha Sanskrit Academy, reprint edition, 2018, Part 1, *Sutrasthana* 14/39-40, page no. 283.
8. Shastri Kashinath, *Agnivesh's Charaka Samhita* with Ayurveda Dipika Commentary by Chakrapanidatta with Vidyotinihindi commentary, Varanasi, Chaukhambha Sanskrit Academy, reprint edition, 2018, Part 1, *Sutrasthana* 14/64, page no. 299.
9. Murthy K.R. Srikantha, *Vagbhata's Ashtanga Hridayam*, Varanasi, Chowkhamba Krishnadas Academy, 8th edition, 2011, Part 1, *Sutrasthana* 17/1, page no. 219.
10. Lohith Dr. B. A., A Text book of *Panchakarma*, 1st edition, Chaukhambha Orientalia, Varanasi, 2016, page no. 145-147.
11. Shastri Kashinath, *Agnivesh's Charaka Samhita* with Ayurveda Dipika Commentary by Chakrapanidatta with Vidyotinihindi commentary, Varanasi, Chaukhambha Sanskrit Academy, reprint edition, 2018, Part 1, *Sutrasthana* 14/13, page no. 283.
12. Choudhary KR, Kumar A. A Clinical Study to evaluate role of Ayurvedic management for improving activities of daily living in Cerebral palsy affected children. *Int J Ayur Pharma Research*. 2014;2(4):68-82.