



## CEREBRAL PALSY: A HOLISTIC REVIEW FROM MODERN AND AYURVEDIC PERSPECTIVES

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### ABSTRACT

Cerebral palsy is the most common form of childhood disability. It refers to a group of non- progressive, non-contagious conditions that result in motor impairments, characterized by abnormalities in movement, muscle control, coordination, muscle tone, reflexes, posture, and balance. These issues arise from brain injury or abnormal brain development during early formation. n. It is the most common childhood physical disability and affects 2 to 2.5 children per 1,000 born in the United States. Complications of cerebral palsy include spasticity and contractures, feeding difficulties, drooling, communication difficulties, osteopenia, osteoporosis, fractures, pain, and functional gastrointestinal abnormalities contributing to bowel obstruction, vomiting and constipation. Present article aims to draw and interpret the *Dosha* involvement in cerebral palsy.

### KEYWORDS

Cerebral Palsy ,*Vatavyadhi*, *Jadatva*, *Pakshaghata*, *Pangulya*, *Akshepaka*, *Janma Bala Pravritta Vyadhi*.

### INTRODUCTION

Cerebral palsy (CP) is defined as a non-progressive neuromotor disorder of cerebral origin<sup>1</sup> but crippling neurological disorder in children<sup>2</sup>. Motor disorders of CP are often accompanied by disturbances of sensation, perception, cognition, communication and behavior. Cerebral palsy (CP) is one of the most common causes of disability in childhood, leading to functional limitations. It is characterized by the inability to normally control motor functions, which affect the child's ability to explore, speak, learn and become independent. Cerebral refers to the cerebrum – a major portion of human brain, which is the affected area of the brain in this disease condition<sup>3</sup> and Palsy means paralysis which refers to weakness or lack of muscle control<sup>4</sup>.

*Ayurveda* defines total health in the aspect of physical, mental, social and spiritual wellbeing. Its holistic approach towards positive life style creates its inevitable importance in the global scenario in recent times<sup>5</sup>. Since it is multifactorial and multi featured disorder so could not be correlated with any single disease or condition mentioned in Ayurvedic texts<sup>6</sup>. An exact correlation to cerebral palsy is not directly available in the *Ayurvedic* texts. However, considering the *Ayurvedic* disease classification and their respective features, Cerebral palsy can be compared with *Vatavyadhi* or *Vatavikar* (diseases of the nervous system) which specifically afflict the *Shiromarma* which may noticeable in various clinical forms as *Pakshaghata*, *Ekangaroga*, *Pangu*, *Sarvangroga*, *Aakshepka* etc. It is also worth mentioning that just like cerebral palsy, *Vatavyadhi* too may emerge at any age (before birth, during birth and after birth till old age) i.e. since conception up to old age<sup>7</sup>.

## ETIOLOGICAL FACTORS –

Cerebral palsy is caused by damage to brain of Infants. It is difficult to pinpoint the exact cause responsible for damage of brain, but there are several factors which cause child to develop this disease. These factors may operate prenatally during the delivery or in the postnatal period<sup>8</sup>.

Common causes of cerebral palsy are – 1. Bleeding in the brain (Haemorrhage) 2. Head injuries sustained during birth to within the first few years of infancy. 3. Lack of oxygen to the brain before or during or after birth (asphyxia). 4. Bacterial or viral infections such as meningitis. 5. Maldevelopment and disorderly anatomic organisation of the brain. 6. Acid base imbalance 7. Chorioamnionitis 8. Prothrombotic factors 9. Indirect hyperbilirubinemia 10. Metabolic disturbances 11. Intrauterine or acquired infections 12. Prenatal exposure to drugs and alcohol.

## SIGNS AND SYMPTOMS

These can be classified into physical and mental signs & symptoms. It differs depending upon the severity and location of brain damage.

### PHYSICAL SYMPTOMS

- i. Contractures (shortening of muscles)
- ii. Flowing of saliva unintentionally
- iii. Exaggerated reflexes
- iv. Hypotonia or poor muscle Tone
- v. Gastrointestinal problems
- vi. Incontinence
- vii. Involuntary muscles or tremors
- viii. Lack of coordination and balance
- ix. Difficulty in swallowing or sucking
- x. Problem with movement on one side of the body xi. Spasticity (stiff muscles)

### MENTAL SYMPTOMS

- i. Behavioral problems
- ii. Delayed motor skill development
- iii. Difficulty in speech
- iv. Sensory impairment
- v. Build-up of cranial pressure due to fluid imbalance
- vi. Visual / hearing imbalance Children may have delay in reaching the developmental milestones. Parent should monitor these milestones. There are chances of negligence in this point. It is classified on the basis of topographic distribution, neurological findings and etiology.

According to Ayurvedic texts the cerebral palsy and its features can be covered under following diseases or conditions.

- *Phakka roga* (Nutritional disorder described in Kashyapa samhita)
- *Pangulya* (Locomotor disorder)
- *Mukatva* (dumbness)
- *Jaḍatva* (mental disorders)
- *Ekangaroga* (monoplegia)
- *Sarvangaroga* (quadriplegia)
- *Pakṣaghata* (hemiparesis)

- *Pakṣavadha* (hemiplegia)
- *Akshepaka* (convulsion disease) etc. All the above conditions are under the group of *Vatavyadhi* and the management should be planned according to diagnosis made by *Ayurvedic* diagnostic tools (*Rogi- Roga Pareeksha*) such as *Dosha, Dushya, Srotos, Adhithana, Vyaktasthana, Prakriti, Asthavidha Pareeksha* etc.

## TYPES OF CEREBRAL PALSY

### 1. Spastic Cerebral Palsy

It is the common form occurring nearly 65 %. It may be spastic quadriplegia (muscle weakness in all four limbs, also including rigid & arched back with head thrown backward, flaccid and tongue weakness, feeding difficulties, restricted voluntary movements) or spastic diplegia (muscle weakness in two limbs, including lower limbs which are severely affected with extension & adduction posturing, tendency to contractures) or spastic hemiplegia (muscle weakness in one limb including abnormal persistent fasting, abnormal posture or gait disturbances). Seizures are common in all forms.

**2. Hypotonic (Atonic) cerebral palsy** In this, pyramidal tract has lesion. Tendon reflexes are normal or brisk. Babinski response (the big toe of the foot moves upward or toward the top surface of the foot due to firmly striking the sole of the foot) is positive. It shows mental retardation also.

**3. Extrapyramidal Cerebral Palsy** The clinical manifestation include dyskinesia (uncontrolled, involuntary muscle movement) such as athetosis (slow, involuntary and writhing movements of the limbs, face, neck, tongue and other muscle groups), dystonia (involuntary muscle contractions), tremors & rigidity. It includes 30 % of the patients. Mental retardation and hearing deficit may be present.

**4. Cerebellar Involvement** It occurs in less than 5 % of the patients. It contains hypotonia and hypo reflexes, impaired balances or coordination, nystagmus (involuntary movements of eye from side to side)<sup>10</sup>.

## DIAGNOSIS-

The diagnosis of cerebral palsy is suspected if a child with a low birth weight, feeding difficulties and does not place with the anticipated normal range of neurological and behavioural development. Cerebral palsy is usually diagnosed anywhere between 18 months and 5 years of age. The parents of the child as well as caregivers are the first which may notice the signs of cerebral palsy. But doctors hesitate to diagnose immediately and they wait to child grow older. The diagnosis is done using imaging test to see any injury to brain or brain damage<sup>11</sup>. It includes.

- Cranial ultrasounds
- Computers Tomography Scans (CT)
- Electroencephalograms (EEG)
- Magnetic Resonance Imaging (MRI)

## DIFFERENTIAL DIAGNOSIS-

Cerebral Palsy can be differentially diagnosed with Neurodegenerative Disorders, Hydrocephalus and Subdural effusion, brain tumours or space occupying lesions, muscle disorders and ataxia telangiectasia.

## PREVENTION –

There is no any guaranteed measure which prevents development of Cerebral palsy. That means there are several preventive measures that doctors and parents can take to reduce the risk of delivering the baby born with cerebral palsy. Routine doctor visit is essential. It is assisted by

- Avoiding alcohol, cigarettes, recreational drugs and prescription drugs known to pose risk during pregnancy.
- Avoiding exposure to infections or viruses known to impact foetal health.
- Controlling underlying health issues such as blood pressure, diabetes mellitus etc.

- Getting routinely vaccinated.
- Identifying any potential Rh incompatibility between mother and child leading to haemolytic anaemia or jaundice.

## TREATMENT-

There are different treatment available for cerebral palsy. Holistic approach is necessary involving the family and can be directed to severity, type of neurological deficits and associated problems. Early diagnosis is necessary and it will be helpful to improve some child's mobility limitation during this time.

- Physical therapy – can help in relieving pain and muscle stiffness as well as improve balance, coordination and overall mobility. Physiotherapists use different equipment that helps child to move more freely and live more independently.
- Speech therapy – helps children to improve their language and communication skill. It gives confidence to learn and socialize.
- Educational – The defects of vision, perception, learning and speech are managed by giving adequate special education to child<sup>12</sup>.
- Orthopaedic support – lightweight splints may be required for right tendo-achilles cortical thumb.
- Social – the family should be given social and emotional support to help it to live with child's handicap.

## AYURVEDIC APPROACH-

*Ayurved* categorises such disorders as *Janma Bala Pravrt* or congenital ailments resulting in mental functioning with or without physical disability. In ayurvedic textbook many referances of condition like *Jada*, *Alpabuddhinam*, *Mandbuddhitva* indicate impaired *Buddhi*.

## MANAGEMENT -

Various *Medhya* drugs and *Rasayanas* in combination achieve effect.

### 1. Prophylactic measures

- Jatkarma*: *Charaka* and *Sushruta* has advocated the use of *Medhya* drugs just after birth during *Jatkarma samskara*<sup>13, 14</sup>. *Kasyap* has also expressed similar views in *Lehadhyaya*. He states that it increases the *Medha* (intellect), digestive power (agni), strength, vitality, immunity and longevity (*ayusya*) and over all well-being of the child.
- Fulfillment of *Dauhridya* World Journal of Pharmaceutical Research During 4th month of intrauterine life due to development of *Hradaya* called *Dauhridiya*. Not fulfilment of the desires of the *Dauhridiya* leads to multiple congenital anomalies and mental subnormality in the foetus<sup>15</sup>
- Avoiding *Garbhopaghatkar bhavas* *Charaka Samhita* has advocated to avoide various dietic factors, *Viharjanya* psychological trauma, it leads to abortion or congenital anamolies and psychological disorders including *jada*<sup>16</sup>.

**2. Specific management** for the management of *jada* the acharyas have advocated the use of various *Medhya* drugs to promote the level of intellect. *Acharya charaka* as described four major *Medhya Rasayana*<sup>17</sup>.

- Mandukparni swarasa*
- Yastimadhu churna*
- Guduchi swarasa*
- Sankhapuspi kalka*

*Acharya Sushruta* has described four *Avalehas* to promote *Medha* i.e. cognitive ability and vitality of child. These are:

- Finely powderd *Swarna Bramhi*, *Shankhapuspi*, *Madhu*, *Ghrita*, *Vacha*.
- Finely powderd *Swarna*, *Kushtha*, *Madhu*, *Ghrita*, *Vacha*.
- Arkpuspi*, *Swarna Bhasma*, *Madhu*, *Ghrita*, *Vacha*.

d. *Swarna Bhasma, Katphal, Sweta, Durva, Ghrita, Madhu.*

In *kasyapa Samhita* as prescribed *Samvardhana Ghrita* for the management of *Jadatva* and other mental disorder.

## CONCLUSION:

- Primarily caused by a range of prenatal, natal, and postnatal factors.
- Pathologically, it results from any type of injury to the developing brain. Characterized by a non-progressive course, but the condition becomes more complex as the child grows and fails to achieve normal developmental milestones.
- The clinical manifestation and location of brain injury, as well as the child's growth and any co-existing conditions, will vary. Although there are available treatment options, they are often limited in their ability to significantly improve quality of life or rehabilitation outcomes.
- The role of muscle relaxants, anti-epileptic drugs (AEDs), physiotherapy, and certain surgical interventions is very limited in providing substantial improvement.

## REFERENCES

1. Gupta k and Prasad M. Some Efficacious Ayurvedic Panchakarma Procedures in Children with Cerebral Palsy. *Int. J Complement Alt Med* 2018; 11(1): 00344
2. Sohini S and Anurudhan R. Conventional Ayurvedic Management in Spastic Cerebral Palsy: A Case Study. *Int. J. Ayur. Pharma Research*; 2017; 5(4):38-41
3. [http://en.wikipedia.org/wiki/cerebral\\_palsy#cite,05/04/2017](http://en.wikipedia.org/wiki/cerebral_palsy#cite,05/04/2017)
4. Taber's Cyclopedic Medical Dictionnary P.1393
5. Brahmanand Tripathi, Ashtang Hridaya, Varanasi, Chaukhambha Surbharti Prakashana, 2007, Sutra Sthana 1/16pg-13
6. Vishwakarma P.K, sharma D, Tiwari R.P. Role of Panchakarma in the Management of Cerebral Palsy in Children. *Ejbps*. 2021; Vol. 8(3):473-477
7. Singh K and Verma B. An Ayurvedic Perspective towards Cerebral Palsy. *J. Res. Educ. Indian Med* 2012; 18(3-4): 163-174
8. [www.cerebralpalsyguide.com](http://www.cerebralpalsyguide.com)
9. Ghai Essential Paediatrics, edited by OP Ghai, Vinod K Baul and Arvind Bagga, CBS Publishers & Distributers Pvt Ltd., New Delhi, Seventh Edition, 2009; 559.
10. Ghai Essential Paediatrics, edited by OP Ghai, Vinod K Baul and Arvind Bagga, CBS Publishers & Distributers Pvt Ltd., New Delhi, Seventh Edition, 2009; 560.
11. [www.cerebralpalsyguide.com](http://www.cerebralpalsyguide.com)
12. Patel DR, Neelakantan M, Pandher K, Meetick J, Cerebral Palsy in Children: a clinical overview, *Transl Paediatr*, 2020 Feb; g(supply 1): S125-S135, doi: 10.21037/to.2020.01.01PMID: 32206590; PMCID: PMC702248.
13. Prof.Ravidutta Tripathi and Acharya Vidyadhar Shukla, *Charak Samhita, Part -1*, Chaukhambha Sanskrit Prakashan, delhi Edition reprinted 2017, Sharirasthan 8/4.
14. Dr. Anant Ram Sharma *Susrut Samhita part 1*, Chaukhambha Surbharti Prakashan Varanasi, Edition Reprinted 2015, Sharirasthan 10.
15. Prof.Ravidutta Tripathi and Acharya Vidyadhar Shukla, *Charak Samhita, Part -1*, Chaukhambha Sanskrit Prakashan, delhi Edition reprinted 2017, Sharirasthan 4/17.
16. Prof.Ravidutta Tripathi and Acharya Vidyadhar Shukla, *Charak Samhita, Part -1*, Chaukhambha Sanskrit Prakashan, delhi Edition reprinted 2017, Sharirasthan 4/18.
17. Prof.Ravidutta Tripathi and Acharya Vidyadhar Shukla, *Charak Samhita, Part -1*, Chaukhambha Sanskrit Prakashan, delhi Edition reprinted 2017, Chikitsasthan 1/30- 31.
18. Dr. Anant Ram Sharma *Susrut Samhita part 1*, Chaukhambha Surbharti Prakashan Varanasi, Edition Reprinted 2015, Sharirasthan 10/72-74.