

# Ayurvedic Management of Hypotonic Cerebral Palsy - Case Report

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**Abstract:** Cerebral palsy is a form of chronic motor disability which results from damage to the growing brain before or during birth or in postnatal period. Motor disorders of cerebral palsy are often accompanied by disturbances of sensation, perception, cognition, communication and behavior. In Ayurveda CP cannot be correlated with any single disease as it is a multifactorial disease, however, considering the classics and respective features of types of CP there are some conditions which find an overlap of symptoms and these include Phakka (a kind of nutritional disorder), pangulya (locomotor disorder), mukatva (dumbness), jadatva (mental disorder), ekanga roga (monoplegia), sarvanga roga (quadriplegia), pakshaghata (hemiparesis), pakshavadha (hemiplegia) etc., under the group of vata vyadhi (neurological disorder). Currently there is no cure for CP. Few answers can be found in various indigenous systems of medicine being used globally. Indian system of medicine including ayurveda has been in use since time immemorial and is time tested. In ayurvedic classics different panchakarma procedures like abhyanga, swedana, nasya etc. and medhya drugs like brahmi, shankhpushpi, mandukaparni, vacha etc. are described which can be used in patients of cerebral palsy effectively.

**Keywords:** - Hypotonic CP, Nasya, Panchkarma

## 1. Introduction

Cerebral palsy is a leading cause of childhood disabilities affecting function and development. It is defined as non progressive neuromotor disorder of cerebral origin. It includes heterogeneous clinical states of variable etiology and severity ranging from minor incapacitation to total handicap [1]. Motor disorders of CP are often accompanied by disturbances of sensation, perception, cognition, communication and behavior. CP is classified into following types- Spastic cerebral palsy (which include spastic quadriplegia, spastic diplegia and spastic hemiplegia), Hypotonic (ataxic) cerebral palsy, Extraparamidal CP, Cerebellar involvement & mixed type. Spastic CP is the commonest form (65%). [2] Despite pyramidal involvement these patients are atonic or hypotonic. Tendon reflexes are normal or brisk and Babinski response is positive. They are often severely mentally retarded. In cerebellar involvement, hypotonia is not associated with exaggerated reflexes. Muscles may show fiber disproportion and delayed CNS maturation is common. In this study a pre diagnosed case of hypotonic cerebral palsy was admitted in State Ayurvedic College and Hospital, Lucknow in Bal roga

OPD for ayurvedic management which includes ayurvedic medicines and panchakarma procedures,

## 2. MRI

### A. MRI brain

No obvious abnormality was detected. The diagnosis was confirmed by modern pediatrician "hypotonic CP" with global developmental delay.

### B. Treatment protocol

#### 1) Total duration

3 months

#### 2) Abhyanga

Kheerabala taila was used for abhyanga. Duration of abhyanga was 20-25 minutes daily for 3 months.

#### 3) Sastikashali pinda sweda –

For 20 days daily followed by gap of 10 days. Such 3 cycles of swedana were done.

#### 4) Nasya

Astamangal ghrita was used as pratimarsh nasya and the dose was 2 drops in each nostril 2 times a day for 3 months daily.

#### 5) Criteria for assessment

Motor functions, developmental milestones, anthropometric measurements, GMFCS (Gross motor function classification system), modified ashworth scale, barthel index for activity of daily life, muscle power assessment with MRC scale, teacher drooling scale were taken as assessment criteria to observe the effect of therapy.

## 3. Results

BT-AT comparison – Assessment was done after every month during the treatment. The improvement in signs and symptoms before and after treatment is shown in table.

Table 1  
Case history

Demographic profile	3 years old male child from Ashok Vihara, Para, Rajajipuram, Lucknow, India.
Symptoms and signs	Unable to sit and stand with or without support.
	Unable to walk with or without support.
	Difficulty in speech, language and communication.
	Laughs occasionally.
	Poor palmar grasp (tries to reach and holds things with crude method only).
	Drooling of saliva (occasional and intermittent all day).
	Poor eye contact.
	Unable to move freely in bed.
	Recurrent chest infection.
History of illness	The patient was delivered by LSCS full term & cried immediately after birth. After birth he suffered with septicemia and was discharged after 10 days of delivery. He did not achieve motor and sensory milestones according to age. Parents visited to many hospitals but there was no significant improvement. With all these complaints patient came to OPD of Bal Roga in State Ayurvedic College and Hospital, Lucknow.
Antenatal history	There was no significant antenatal history.
Developmental history	Delayed milestones- Neck holding- 18 months Social smile- 3 months Recognizing mother- 4-5 months Recognizing father- 6-7 months
Treatment history	Treatment of neonatal septicemia was given.
Birth history	Birth weight -3.2 kg and suffered with septicemia just after birth.
Vaccination history	Vaccination has been done as per age.
Dietetic history	Oral feeds were started 10 days after birth
Family history	No history of consanguineous marriage. Nuclear family Father is doing private job and, mother is housewife, single child.
Examination	Vitals were normal Weight 10 kg Cardiovascular, gastrointestinal and respiratory examinations were normal, prikriti was Vata-kaphaj.
CNS Examinations	The patient was having hypotonia all over body. Muscle power decreased when he was asked to grasp the examiner's hand, Cranial nerve examination could not be done due to his inability to follow the command. Knee reflex was absent and Babinski response was positive, no signs of meningeal irritation were present.
Astavidha pariksha	Nadi – V-K , Mala- saam , mutra- varna-samanya, gandha- samanya, matra-samanya , jihva –samanya, shabda-aspasta,sparsha- samanya,drik- samanya,akriti- sama

Table 2

Investigations	Laboratory findings	Normal range
Hb,TLC,DLC,ESR,PCV,serum protein,urine routine & microscopic	Within normal limits	-
ALP	230 IU/L	38-126 IU/L
AST	70 IU/L	14-36 IU/L

#### 4. Conclusion

There was significant improvement in the 3 months duration of treatment. In Ayurveda, cerebral palsy may be considered as vata-vyadhi and all the procedures used in the patient were vata-hara. Skin is thought to be main adobe of vata along with pakvasaya.[3] Abhyanga and shashtikashali pinda sweda involves cutaneous manipulation. It is considered as one of the prime procedures for mitigating vata.[4-5] These procedures of external therapy may act by dermal mechanism of drug absorption and action. Primarily these modalities act by two mechanism i.e. local and central. The local mechanism includes cutaneous stimulation causing the arterioles to dilate and thereby achieving more circulation. This also assists venous and lymphatic drains. This state of hypercirculation also enhances the transdermal drug absorption and assimilation. Massage causes movement of the muscles thereby accelerating the blood supply which in turn help in relieving the muscular fatigue and reduces stiffness. Skin is an organ with rich sensory nerve endings which on stimulation gives abundant sensory

inputs to the cortical and other centers in CNS. This fact was exploited since thousands of years for stimulation of higher centers of central nervous system which is evident when it is referred that snehana and swedana are the prime mode of treatment in treating neurological conditions [6]. Nasya is a therapeutic procedure where drugs are administered through nose in a specific manner to cure different systemic disorders. Since nasal mucosa is primarily of lipophilic nature, by increasing lipophilicity of drug absorption of drug through nasal mucosa can be enhanced. That's why sneha processed with different drugs according to vitiated doshas nasya can be used in different disorders of supraclavicular region [7]. All the drugs used in astamangal ghrita used for nasya improve the brain functions and also the sensory and motor systems as a result of their various properties like anti-epileptic, anti-depressant, CNS stimulant, immunomodulatory etc.

Table 3  
Results

CNS Examination	BT	1 <sup>st</sup> sitting	2 <sup>nd</sup> sitting	3 <sup>rd</sup> sitting
Sitting	Unable to sit without support	Sits momentarily ( 30 seconds or more)	Sits leaning forward with support of hands.	Sits without support with straight back
Standing	Stands only with support for few seconds and tilted feet and remain unstable during standing position.	Duration of standing with support was increased and patient was stable in standing position.	Slight improvement in position.	Keeps both feet flat on the ground and duration of standing also increased.
Walking	Unable to walk with or without support.	Unable to walk with or without support.	Takes few steps with both hands held.	Takes few steps one hand held only.
Feeding	Unable to feed by self.	Unable to feed by self.	Able to pick up the food like biscuits etc. and tries to reach the food up to the mouth but unable to feed by self.	Able to pick up the food like biscuits etc. and tries to reach the food up to the mouth but unable to feed by self.
Mental status	Laughs occasionally	Laughs occasionally	Normally laughs	Normally laughs
Bathing	Unable to do task	Unable to do task	Can hold the mug filled with water by self but unable to pour on him.	Can hold the mug filled with water by self but unable to pour on him.
Eye contact	Poor	Poor	Improved	Proper eye contact.
Drooling	Frequent drooling but not profuse.	Frequent drooling but not profuse.	Occasional drooling ,intermittent all day	Infrequent drooling in small amount.
Social interaction	Do not interact with peers.	Do not interact with peers.	Started interacting with peers and indulged in playing activities also.	Started interacting with peers and indulged in playing activities also.
Nutrition	Decreased in all four limb	Decreased in all four limb	Improved	Improved
Muscle tone	Hypotonicity	Hypotonicity	Improved	Normal tone
Plantar reflex	Flexor	Flexor	Flexor	Flexor

Table 4  
Comparison of anthropometric measurement and related scales

S. No.	Parameters	BT	AT
1.	Weight (kg)	11 kg	13 kg
2.	Height (cm)	98 cm	101 cm
3.	Head circumference(cm)	43	45
4.	Chest circumference (cm)	48	50
5.	Modified ashworth scale ( score)	0	2
6.	Barthel index (score)	0	5
7.	MRC scale( grade)	3	4

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