

EFFECT OF AYURVEDIC MANAGEMENT IN CEREBRAL PALSY

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ABSTRACT

Cerebral palsy (CP), a static, non-progressive disorder caused by brain insult or injury in the prenatal, perinatal, and postnatal time period, is the major developmental disability affecting normally control motor functions and it has the potential to have an effect on the overall development of a child. The disease is not curable but early intervention with counseling, appropriate medication and physiotherapy along with Panchakarma procedures will help to improve their quality of life and give active and self supporting happy life. To evaluate the efficacy of *Shshtika Shali Pinda Sweda* along with *Medhya Churna (Anubhoot Yoga)* as internal medication in the management of Cerebral Palsy. Total 6 patients completed the course of therapy. In this study, significant improvement was found in growth, development milestone, and motor system components like Muscle power and Muscle spasticity.

Keywords: Cerebral Palsy, *Shashtika Shali Pinda Sweda*, *Medhya Churna*

INTRODUCTION

Cerebral Palsy (CP) is a common cause of childhood disability. It is defined as “a group of non progressive but often changing motor impairment syndromes, secondary to lesions or anomalies of brain arising in early stages of its development”. It is a static encephalopathy and excludes all progressive neurological disorders. Other neurological deficits are frequently associated and they add to the disability caused by motor deficit.¹

Cerebral palsy is the second commonest cause for the disability in children, making them physically, mentally and socially handicapped. Population based studies from around the world report prevalence estimates of CP ranging from 1.5 to 4 per 1000 live births.² The incidence is higher in males than in females; the surveillance of Cerebral Palsy in Europe (SCPE) reports an M: F ratio of 1.33:1. . There are an estimated 25 lakhs of cerebral palsy children and adult in India.³

In Ayurveda classics there is no exact description of the disease entity which exactly matches the feature of CP. There is one very important chapter of *Vatavyadhi*¹⁰ with good contribution for the causative and management aspect of CP. There are various methods of therapy including *Snehana*, *Swedana*, *Basti* etc. like *panchakarma* procedure and *Medhya*, *Balya*, *Rasayana* drugs may help at both physical and mental level. For that purpose here *Abhyanga* with *Bala Taila* followed by *Shashtika Shali Pinda Sweda* (SSPS) was taken to find out its effectiveness to improve the condition with the intention of minimizing the disability to improve their quality of life and give them active, self supporting long life with happiness.

AIM AND OBJECTIVE:

To evaluate the efficacy of *Shshtika Shali Pinda sweda* in the management of Cerebral Palsy.

SELECTION OF PATIENTS:

Diagnosed patients of Cerebral Palsy (C.P.) attending the O.P.D. of Kaumarbhritya dept, I.P.G.T. &R.A. were selected irrespective of their caste, sex, religion etc. for the research work

INCLUSION CRITERIA:

1. Children with C.P. from 6 months to 10 yrs age of either sex.

2. Children with developmental disability both either physical or mental, in mild or moderate degree as compared to other normal children.

EXCLUSION CRITERIA:

1. Children's age < 6 months and > 10 yrs.
2. Children of C.P. with major congenital disorder and other disease status viz, Juvenile DM, Acute infections etc.

LABORATORY INVESTIGATION:

(Routine investigations to know the health status of child)

- **Blood:** Hb, TC, DC, ESR.
- **Urine & Stool:** Routine and Microscopic (If needed).

MATERIAL AND METHOD:

Udvaartana: With *Yava & Kulattha Churna*.

Abhyanga: With *Bala Taila* for 20 minutes followed by *Nadi Swedana* for 20 minutes.

Shashtika Shali Pinda Sweda⁴: Decoction of *Bala* (1 liter), *Milk* (1 liter), *Shashtika Shali Rice* (250 grams approx), 4 pieces cotton cloth 15"x 15" (approx. measuring)

Treatment Schedule - (Table 1)

Total duration: **86** days as revealed below-

Table 1: Treatment schedule

First Course	Second Course	Third Course
5 days <i>Udvaartana</i>	5 days <i>Udvaartana</i>	5 days <i>Udvaartana</i>
5 days <i>Abhyanga with Bala Taila & Nadi Sweda</i>	5 days <i>Abhyanga with Bala Taila & Nadi Sweda</i>	5 days <i>Abhyanga with Bala Taila & Nadi Sweda</i>
8 days <i>Shashtika Shali Pinda Sweda</i>	8 days <i>Shashtika Shali Pinda Sweda</i>	8 days <i>Shashtika Shali Pinda Sweda</i>
16 days interval	16 days interval	

For Internal Medicine: *Medhya Churna* throughout the treatment schedule. (*Anubhoota Yoga*). (Table 2)

Table 2: Contains of *Medhya Churna*

Ingredients	Botanical Name	Part Used	Ratio
<i>Bramhi</i>	<i>Bacopa moneri</i> Linn	<i>Shuska Panchanga</i>	1 part
<i>Vacha</i>	<i>Acorus calamus</i> Linn	<i>Mula</i>	1/4 part
<i>Shankhpushpi</i>	<i>Convolvus pluricaulis</i> Chois	<i>Shuska Panchanga</i>	1 part
<i>Yashtimadhu</i>	<i>Glycyrhiza glabra</i> Linn	<i>Shuska Kanda</i>	1 part
<i>Guduchi</i>	<i>Tinospora cordifolia</i> Willd.	<i>Shuska Kanda</i>	1 part
<i>Pippali</i>	<i>Piper longum</i> Linn	<i>Shuska Phala</i>	1/4 part

Posology:

Drug	<i>Medhya churna</i>
Formulation	<i>Churna</i>
<i>Sahapana</i>	<i>Madhu</i>
<i>Kaala</i>	<i>Abhakta</i>
Duration	86 days
Follow up	8 weeks

Dosage: Adult dose of Churna - 1 k;R (za s—) (1 k;R =12 gm)

$$\text{Child dose} = \frac{\text{Adult dose} * \text{Age of Child (In Two Divided Doses)}}{16}$$

Age Group	Dose
6 Months to < 1 Year	750 mg
1 Year to <3 Years	1.5 gm
3 Year to < 7 Years	4 gm
7 Year to <10 Years	7 gm

METHOD: Simple random sampling method.

CRITERIA FOR ASSESSMENT:

The assessment was done on the basis of improvement in –

- For developmental milestones - CDC grading for motor milestones.
- For Muscle Spasticity - Ashworth scale For Spasticity.
- For Muscle Power – MRC Scale For Muscle Power.
- ADL scale and MACS (Manual Ability Classification System) were used to assess improvement in quality of life (QOL) of Cerebral Palsy patients.

- Cognitive Functions- General Understanding.

RESULT:

Significant result (p= <0.05) was observed in Head holding, Sitting, language and Personal and social milestone of CDC grading while highly significant result (p=<0.001) in fine motor and insignificant result was observed in standing milestone. (Table 3)

Length parameter has shown highly significant result (<0.001). Weight, CC, MAC Rt., MAC Lt., MTC Rt. and MTC Lt. parameters has shown significant result (<0.05). But HC parameter has shown insignificant (p >0.05) result. (Table 4)

MRC scale for muscle power for all four limbs has shown significant results ($p < 0.05$). Ashworth scale for spasticity for Lower limbs has shown highly significant ($p < 0.001$) result and for upper limbs has shown significant results ($p < 0.05$) while MACS scale and ADL scale has shown insignificant result ($p > 0.05$). (Table 5)

Total effect of therapy: 16.66 % of patients had mild improvement (26%-50%), 66.66 % of patients were improved (11-25%) in clinical condition and 16.66% of patients were found no improvement (0-10%).

Table 3: EFFECT OF THERAPY ON ASSESSMENT CRITERIA

Assessment parameters	Mean score			% change	±SD	± SE	't'	P
	B.T.	A.T.	\bar{X}					
Head holding	4.0	2.83	1.16	21.66	0.9	0.4	2.90	<0.05*
Sitting	4.5	3.66	0.83	19.44	0.75	0.30	2.71	<0.05*
Standing	5.50	5.00	0.5	13.88	0.83	0.34	1.46	>0.05
Fine motor	5.33	4.16	1.16	22.77	0.40	0.16	7.0	<0.001**
Language	5.16	4.16	1.0	19.44	0.89	0.36	2.73	<0.05*
Personal and Social	4.0	3.33	0.66	19.44	0.51	0.21	3.16	<0.05*

n = 6

* significant **highly significant

Table 4: EFFECT OF THERAPY ON ANTHROPOMETRICAL MEASUREMENT

Components	Mean score			% change	±SD	±SE	't'	P
	B.T.	A.T.	\bar{X}					
Weight	10.50	12.25	1.75	16.22	0.88	0.35	4.86	<0.05*
Length	92.00	94.50	2.50	2.72	0.54	0.22	11.18	< 0.001**
HC	43	43.58	0.58	1.32	0.80	0.32	1.78	>0.05
CC	51.75	52.33	0.58	1.16	0.49	0.20	2.90	<0.05*
MAC Rt.	14.41	15.25	0.83	5.75	0.40	0.16	5.0	<0.05*
MAC Lt.	14.66	15.25	0.58	4.02	0.37	0.15	3.79	<0.05*
MTC Rt.	23.33	23.91	0.58	2.56	0.37	0.15	3.79	<0.05*
MTC Lt.	23.00	23.58	0.58	2.51	0.49	0.20	2.90	<0.05*

n = 6

* significant ** highly significant

Table 5: EFFECT OF THERAPY ON MOTOR SYSTEM COMPONENTS

Components of Motor System	Mean score			% change	± SD	±SE	't'	P
	B.T.	A.T.	\bar{X}					
Muscle power								
Lt. Upper	2.50	3.33	0.83	27.77	0.75	0.30	2.71	<0.05*
Rt. Upper	2.50	3.33	0.83	27.77	0.75	0.30	2.71	<0.05*
Lt. Lower	2.33	3.16	0.83	33.33	0.40	0.16	5.00	<0.05*
Rt. Lower	2.33	3.16	0.83	33.33	0.40	0.16	5.00	<0.05*
Modified Ashworth Scale								
Lt. Upper	3.33	2.50	0.83	24.16	0.75	0.30	2.71	< 0.05*

Rt. Upper	3.33	2.50	0.83	24.16	0.75	0.30	2.71	< 0.05*
Lt. Lower	3.33	2.00	0.51	41.38	1.472	0.21	6.32	<0.001**
Rt. Lower	3.33	2.00	0.51	41.38	1.472	0.21	6.32	< 0.001**
MACS								
Lt.	5.00	4.66	0.33	7.5	0.51	0.21	1.58	>0.05
Rt.	5.00	4.66	0.33	6.66	0.51	0.21	1.58	>0.05
ADL	0.16	0.16	0.00	0.0	0.00	0.00	0.00	>0.05

n = 6

* significant ** highly significant

DISCUSSION

CP is a syndrome like presentation rather than an individual disease entity. This group of disorders affecting the movement and posture is believed to arise from an injury or insult to the developing fetal or infant brain⁵. There is no effective treatment for the underlying brain damage formulated till date. Modern treatments has very limited role with muscle relaxants, AED (anti epileptic drugs) physiotherapy and some operative procedures. There is no similar disease or symptom complex in Ayurvedic science that can be taken as synonym of CP. Based on etiology, pathology and clinical manifestations of CP, it can be considered as *Vata* dominant conditions or *VataVyadhi*. Delayed development of gross and fine motor function may be due to problem in normal function of *Vata* (*Pravartaka Cheshtanamucchavchanam*). So to achieve results in developmental disorders, functions of *Vata* (normal physiology) should come to normalcy. Here *Medhya Churna* might have worked on CNS by its nootropic and *medhya* effect, thus stimulating higher mental functions (*Medha, Smruti* and *Buddhi*).

In this study, spastic Cerebral Palsy was observed in 75 % patients. Spasticity is characterized by increased resistance by passive stretch, velocity dependent and asymmetric about joints (i.e. greater in flexor muscle at the elbow and the extensor muscle at the knee).⁶ This may

happen due to *Avarana* of *Vata*, wherein, due to *Avarana*, *Vayu* cannot perform its normal function i.e. normal movement of joints (*Pravartaka Cheshtanam*). Initially *Udvardana* might be helped in reduction of vitiated *Kapha* by its *Ruksha* and *Srotoshodhana* property⁷. Once *Avarana* is removed the aim of treatment is to pacify vitiated *Vata*. *Vayu* resides in *Sparshnendriya* which is located in *tvacha*, *Abhyanaga*⁸ is quoted as *Tvachya*. So, *Abhyanga* along with *Shastika Shali Pinda Sweda*⁹ might work directly on *Vata* to bring it back to normalcy.

Shstika Shali rice has the *snigdha, laghu* etc. *guna* and *Brihana* like *Karma*, So SSPS nourishes the full body and it is strengthening fo-mentation which can be very useful in condition like malnutrition of limbs. SSPS enhances physical consistency and increases the muscular strength.

CONCLUSION

CP cannot be correlated with any single disease or condition in Ayurveda, as it is a multi-factorial disease with clinical features of a wide variation. Role of *Vata* in etiology and disease presentation; improvement with its treatment protocol puts the disease entity nearer to *Vata Vyadhi* or *Vata* predominant condition. Due to the severity and chronicity of the disease and there is multisystem involvement, internal med-

ication i.e. *Medhya Churna* was given along with external procedures like *Udvardana*, *Abhyanga* and *Shashtika Shali Pinda Sweda* to obtain optimum result in the crucial growing period of the patients. The selected Ayurvedic treatment modality is effective in relieving the signs and symptoms and thus reducing the disability in children with CP. Total effect of therapy showed results in range of 11 to 25 % relief as per the standard criteria for total effect of therapy, but even this noticeable improvement in neurological disorder is significant in a large way.

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