



Research Article

THE EFFECT OF *MURCCHITA TILA TAILA* BASED *PANCHAKARMA* PROCEDURE AND *BALAPANCHAMRITA YOGA* IN THE MANAGEMENT OF CEREBRAL PALSY IN CHILDREN: A SINGLE ARM PROSPECTIVE CLINICAL TRIAL

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KEYWORDS: Cerebral palsy, Neuromotor disorder, Musculo-skeletal deformities, *Vatavyadhi*, *Phakka Roga*.

ABSTRACT

Cerebral palsy appear in early childhood due to damage of developing parts of the brain that control the movement, balance, posture and other functions of the body. The early diagnosis of CP is based on the symptoms of poor head control, poor coordination, stiff muscles, weak muscle, tremors and gross motor developmental delay. As per Ayurveda, all functional activity of the body is regulated by the *Vata Dosha*. Vitiated *Vata* shows same symptoms like cerebral palsy due to its *Ruksha*, *Sheeta* and *Khara gunas*. So that the aim of treatment is to pacifying the vitiated *Vata Dosha* by *Panchakarma* procedures with normal *Murcchita Tila Taila*; and assess their effect on spasticity, range of movement and in quality of life in children. *Murcchita Tila Taila* shows significant response at the end of trail/therapy. In this study, the effect of *Panchakarma* therapy with *Mucchita Tila Taila* has shown 78.58% patients with mild response I and 21.42% patients with mild response II on both Modified Ashworth scale and Gross Motor Function Manual Scale, 85.71% patients with mild response I and 14.29% patient with no response on Quality of life scale.

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INTRODUCTION

Cerebral palsy describes a group of disorders of the development of movement and posture, causing activity limitation that attributed to non-progressive disturbances that attributed to non-progressive disturbances that occurred in the developing fetal or infant brain. The motor disorders of CP may be accompanied by disturbance of sensation, cognition, communication, perception and/or behaviour, and/or by a seizure disorder. The incidence of mental retardation (52%), epilepsy (45%), ophthalmologic defects (28%), speech and language disorders (38%), and hearing impairment (12%) are quite significant^[1]. CP is a persistent but not unchanging disorder of movement and posture. Diagnosis is made on the basis of some warning symptoms (lack of alertness, increased abnormal movement excessive drooling and fisting after 2 months of age) and signs (persistent primitive reflexes, increased tone, delayed milestone etc.). In case of Cerebral palsy, multidisciplinary management

under one roof with various specialists such as Occupational, physiotherapy, neurol developmental therapy (NDT), Constraint-induced movement therapy (CIMT), Hand Arm Bimanual Intensive Training (HABIT), hyperbaric oxygen, hypnotherapy and stem cell therapy are important. But in Ayurveda, the management is mainly focus on the *Vata Dosha*. Because the whole body activities such as speech, walking and hearing etc. are initiated and controlled by *Vata Dosha*. So the normal functioning of the body is disturbed by the vitiated *Vata Dosha* and causes *Phakka*, *Ekanga Roga*, *Sarvanga Roga*, *Pakshaghata*, and *Vatavyadhi*. That's shows similarity with the symptoms of CP. The Ayurvedic procedures like *Sarvanga Abhyanga*, *Nadi Swedana* and *Matra Basti* are found to be effective in the alleviation of vitiated *Vata Dosha* as well as also beneficial in the reduction of spasticity, improvement in joints flexibility/range of motion, improvement in circulation and pain reduction. Many studies are proven the significant role of

Panchakarma procedure in the effective management of CP in Children. Here in this study try to evaluate the effect of *Tail Taila* used as a media for *Panchakarma* procedure in the management of Cerebral palsy.

Aim and Objective: To assess the effect of *Murcchita Tila Taila* in procedure with oral administration of *Balapanchamrita Yoga* in Spasticity, Range of motion/movement and Quality of life in CP Child.

Material & Method:

In this study, total 14 diagnosed case of cerebral palsy were enrolled from OPD/IPD, department of Kaumarabhritya AIIA, New Delhi.

A. Inclusion criteria

1. Diagnosed case of Cerebral palsy between the age group of 1-12 years of either sex.
2. Parents submitting written consent to participate in the study.

B. Exclusion criteria

1. Recent orthopedic surgery/casting/splint, fixed contractures.
2. Congenital disorders, Progressive neurological disorder, severe intractable epilepsy, any systemic illness.
3. Acute illness that would interfere with carrying out the interventions.
4. Children had received botox (last 1yr) or had undergone phenol block injection or intrathecal baclofen medication.

C. Criteria of Assessments

1. Modified Ashworth Scale
2. Gross Motor Functional Manual Scale

3. Quality of Life

D. Treatment Protocol

Total 81 days treatment was given to the patient in the form of three courses (3 days *Udwartana*, 14 days *Sarvanga Abhyanga* and *Nadi Swedana* followed by 7 days of *Matra Basti* start from 8th days of *Sarvanga Abhyanga* and *Nadi Swedana*) with 15 days of gap between each course of treatment.

- *Udwartana*: 3days with *Tilapinyaka churna* for 15-20 min.
- *Sarvanga Abhyanga*: 14 days with *Murcchita Tila Taila* for 20 min.
- *Nadi Swedana*: 14 days with *Eranda patra kwath*.
- *Matra Basti*: 7 days with *Murcchita Tila Taila* (start from 8th day of *Sarvanga Abhyanga* and *Nadi Swedana*).

Internal medication: Balapanchamrita Yoga^[2]

- Ingredient: *Haritaki, Pippali, Shunthi, Misreya* and *Hingu*
- Dosage form- *Churna*
- *Anupana- Madhu*
- Duration- 81 days

Dosage: $\left(\frac{\text{Adult dose} \times \text{Age of child (in years)}}{12 + \text{Age in years}} \right)$

- Institutional Ethical Clearance (IEC) and Clinical Trial Registry of India (CTRI) was done before initiating the clinical study-
- IEC Number (Annexure I): AIIA/2018/PG-98
- CTRI Registration number (Annexure II): CTRI/2019/06/019645

Table 1: Showing Total duration and course of the clinical study

Course 1	Course 2	Course 3
<i>Udwaratan – 3 days</i>	<i>Udwaratan – 3 days</i>	<i>Udwaratan – 3 days</i>
<i>Sarvanga Abhyanga-14days</i>	<i>Sarvanga Abhyanga-14days</i>	<i>Sarvanga Abhyanga-14days</i>
<i>Nadi sweda -14days</i>	<i>Nadi sweda -14days</i>	<i>Nadi sweda -14days</i>
<i>Matra basti -7days</i>	<i>Matra basti -7days</i>	<i>Matra basti -7days</i>
+	+	+
<i>Balapanchamrita Yoga</i>	<i>Balapanchamrita Yoga</i>	<i>Balapanchamrita Yoga</i>
15 days gap between each course of procedure.	15 days gap between each course of procedure	15 days gap between each course of procedure

Observation and Result

In the present study, the total 15 patient were registered and total 14 patients completed the 3 course of treatment with 1 drop out in group B *(due to COVID 19 Pandemic). An equal number of patients i.e., 66.67% were from age group of 1-6 years. The majority of patients were male [80%] and 86.67% of total patients presented with history

of delayed cry. Further, prolonged labour was reported in 20% cases, Meconium aspiration in 20%, seizures in 13.33%, Jaundice in 26.67% cases, Hydrocephalus in 13.33% and Septicaemia in 06.67% cases. 80% of the total patients required hospitalization and 66.67% patients were needed resuscitation. 66.67% of the total patient was not

achieved bowel and bladder control. 93.33% patients presented with spastic type of CP and 06.67% mixed CP. Among the Spastic CP, 60% patients were of Spastic diplegic CP, 26.67% patients Spastic quadriplegic CP and 13.33% patients Spastic hemiplegic CP. 86.67% patients had speech problems and problems with eyes and vision were seen in 33.33% patients.

Table 1.2: Showing Effect of therapy on MAS (N=14)

Assessment parameters	Mean score		Mean (BT-AT)	SD +/-	S.Er.	Df	t	P value
	BT	AT						
Elbow Rt.	1.42	0.78	0.64	0.53	0.14	13	4.50	<0.000
Elbow Lt.	1.42	0.78	0.64	0.53	0.14	13	4.50	<0.000
Wrist	1.5	0.78	0.72	0.54	0.14	13	5.14	<0.000
Fingers	1.39	0.64	0.75	0.50	0.13	13	5.50	<0.000
Thumb	1.39	0.64	0.75	0.50	0.13	13	5.50	<0.000
Hamstring Rt.	2.1	1.2	0.82	0.54	0.14	13	5.68	<0.000
Hamstring Lt.	2.1	1.2	0.82	0.54	0.14	13	5.68	<0.000
Quadriceps Rt.	2.1	1.2	0.82	0.54	0.14	13	5.68	<0.000
Quadriceps Lt.	2.1	1.2	0.82	0.54	0.14	13	5.68	<0.000
Gastrocnemius	2.1	1.2	0.82	0.54	0.14	13	5.68	<0.000
Soleus	2.1	1.2	0.82	0.54	0.14	13	5.68	<0.000

Table 1.3: Showing effect of therapy on GMFM Scale (N=14)

Assessment parameters	Mean score		Mean (BT-AT)	SD +/-	S.Er.	Df	T	P value
	BT	AT						
Lying & Rolling	52.93	76.41	23.48	13.64	3.64	13	6.44	<0.000
Sitting	39.04	62.49	23.45	12.53	3.34	13	7.00	<0.000
Crawling & Kneeling	16.83	33.65	16.81	9.96	2.66	13	6.31	<0.000
Standing	4.57	28.19	23.62	13.97	3.73	13	6.32	<0.000
Walking & Running	4.95	17.55	12.59	7.19	1.92	13	6.55	<0.000

Table 1.4: Showing effect of therapy on QOL Scale (N=14)

Assessment parameters	Mean score		Mean (BT-AT)	SD +/-	S.Er.	Df	t	P value
	BT	AT						
Family & Friends	69.05	77.37	8.32	3.98	1.06	13	7.81	<0.000
Participation	25.47	30.55	5.07	5.47	1.46	13	3.46	<0.004
Communication	54.75	62.69	7.93	4.56	1.21	13	6.51	<0.000
Health	51.93	60.21	8.27	3.56	0.95	13	8.67	<0.000
Special equipment	61.90	74.86	12.96	8.18	2.18	13	5.92	<0.000
Pain & Bother	70.31	51.11	19.19	7.83	2.09	13	9.16	<0.000
Final question	52.22	42.06	10.15	3.56	0.95	13	10.67	<0.000
Access	58.33	69.04	10.71	6.93	1.85	13	5.77	<0.000
Your health	83.64	86.34	2.69	1.28	0.34	13	7.82	<0.000

Table1.5: Showing Overall response of the therapy

Parameters	MAS		GMFM		QOL	
	No.	%	No.	%	No.	%
No response (Less than 5%)	0	0	0	0	02	14.29
Mild response -I (5%-25%)	11	78.58	11	78.58	12	85.71
Mild response -II (25%-50%)	03	21.42	03	21.42	0	0
Moderate response (50%-75%)	0	0	0	0	0	0
Excellent response (75%-100%)	0	0	0	0	0	0

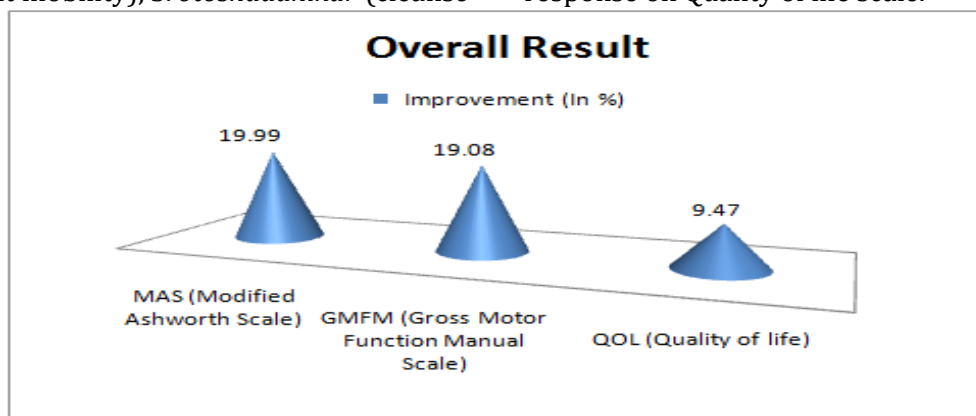
Table 1.6: Showing Overall Clinical improvement of the therapy

S.No.	Parameter	Improvement (In %)
1.	MAS (Modified Ashworth Scale)	19.99
2.	GMFM (Gross Motor Function Manual Scale)	19.08
3.	QOL (Quality of life)	9.47

DISCUSSION

Udwartana is Kaphavataharam (decrease fat and open the hair follicles), *Sthrikanam* (provide stability), *Twakprasaadkarnam* (glow and luture), and also help in alleviation of vitiated *Vata* by *Snegdha* and *Ushana* properties of *Tilapinyak churna*. On the other hand *Udwartana* opens the minute channels and improves blood as well as lymphatic circulation. *Abhyanga* reduces increased muscle tone, improves muscle bulk and power in CP cases.^[3] *Abhyanga* involves cutaneous manipulation and it is considered as the prime procedures for mitigating *Vata*. Massage stimulates sensory nerve ending of the skin and gives abundant sensory inputs to the cortical and other centers in central nervous system; and also improves the blood supply to muscles, relieves muscular fatigue and reduce stiffness. *Abhyanga* and *Swedana* are the prime procedure in the various neurological conditions. Pressure application in proper way can help in reduction of motor neuron hyper-excitability by reducing the alpha motor neuron activity. *Swedana* is *Sthambhghna* (relieves spasticity), *Sandhichestakar* (improves joint mobility), *Srotoshuddhikar* (cleanse

channels), *Kaphavata nirodhaka* (pacifies *Kapha* and *Vata*); and also relives heaviness, stiffness and coldness in the body parts^[4]. *Basti* is consider as ‘*Ardha Chikitsa*’ (half treatment) of *Vata* and most important *Panchkarma* in CP. *Basti* have *Brimhana* (nourishing) effect and improves the flexibility of joints in case of CP by *Vatashamana*^[5]. *Basti* therapy instantaneously promotes *Bala* (strength), *Varna* (complexion), *Harsha* (sense of exhilaration), *Mardavatva* (tenderness) and *Snehana* (unctuousness) of the body^[6]. *Matra Basti* provides more nourishment to deeper *Dhatus* (tissues)^[7]. *Basti* may block neuromuscular transmission by binding to receptor sites on motor or sympathetic nerve terminals, entering the nerve terminals, and may inhibit the release of acetylcholine^[8]. *Basti* found beneficial in spastic *diplegia*^[9]. In this study, the effect of *Panchakarma* therapy with *Mucchita Tila Taila* has shown 78.58% patients with mild response I and 21.42% patients with mild response II on both Modified Ashworth scale and Gross Motor Function Manual Scale, 85.71% patients with mild response I and 14.29% patient with no response on Quality of life scale.



CONCLUSION

The overall comparative clinical improvement in the present study have shown 19.99% on Modified Ashworth scale, 19.08% on Gross Motor Function Manual Scale and 9.47% on Quality of life scale. Thus *Murcchita Tila Taila* has shown the significant result in the management of cerebral palsy in children on the assessment parameters i.e. Modified Ashworth Scale, Gross Motor Functional Manual Scale and Quality of Life Scale. Therefore on the basis of these result, base oil (*Murcchita Tila Taila*) used in *Panchakarma* procedure shows good result as other *Vatahara Taila*. It can be used in poor patients as main drugs in various procedures with same benefits and low cost. And also help in reducing the economic burden of treatment in poor and long treating diseased patients.

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