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Research Article

EFFECTIVENESS OF KSHEERABALA TAILA MATRA BASTI IN CHILDREN WITH CEREBRAL PALSY

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ABSTRACT

Cerebral Palsy means “brain paralysis”. Nearly 15-20% of total physically handicapped children suffer from cerebral palsy i.e. 2 per 1000 live births. Cerebral palsy is considered as one among Samvardhana vikara Based on the symptoms, the chief dosha was Vata travelling through Madhyam Marga. Hence Samvardhana vikara due to hampering and crippling nature during the course of samvardhana i.e. growth and development of child were treated with line of treatment Vatavikara.

For this study Matra Basti with Ksheerabala taila is selected, as it is having Vatahara property. Matra Basti was given with Ksheerabala taila after Abhyanga with Ksheerabala Taila and Swedana with Shatika Shali Pinda Sweda.

Matra Basti of Ksheerabala taila significantly improved ADL by 17.90%, Gross motor function was improved by 32.80%, and fine motor function was improved by 17.32%. Mental functions like Medha, Smrithi etc got improved by 26.76%. Performance was improved by 29.41%. This is concluding that the study gives significant relief in cerebral palsy in improving motor functions and skills.

Keywords: Cerebral palsy, Ksheerabala taila, Matra Basti, Motor function, Vatavikara.

INTRODUCTION

Cerebral Palsy is a non-progressive neuromuscular disorder resulting from multiple etiologies. It is locomotor disability that affects movements and body position. It comes from brain damage that happened before the baby born, at birth or after birth. Once damaged, the part of brain does not recover nor do they get worse. Cerebral palsy is leading cause of crippling handicap children.

The world health organization (WHO) estimated that 10% of the population has same form of disability. Statistics from different source indicate that 3.8% of population has same form of disability in India. Nearly 15 to 20% of total physically handicapped children suffer from Cerebral palsy. The prevalence of Cerebral palsy among children is 2 per 1000 live births.

Cerebral palsy is defined as non-progressive motor impairment syndrome that results from damage or dysfunction of developing brain and is often associated mental retardation, epilepsy and sense organ defects like visual, speech, hearing impairment etc.

Cerebral palsy can consider as *Shiromarma ghat janya vata vyadhi*, which can manifest itself in any of the following form *Pakshaghat, Ekangavata, Panguetc. Nidan, Samprapti* and *Lakshana* of all these *VataVikara*, are generally *Shiromarma bhigataj vata Vikara* (Cerebral palsy). *Maramabhighat* is one of the causes for *Vatavikara*, Acharya Charak while describing *Shiromarmabhighata* has mentioned many *VataVikara* such as *Chestanasha, Gadgatha* and *Sadatha* including mental impairment¹. Therefore *Shiromarma bhigata jvatavikar* is coined for Cerebral palsy and taken for present study.

Abhyanga is advocated to reduce the effect of vitiated *vata* with *Ksheerabala Taila* is said to be beneficial it reduces the effect of vitiated *vata*² *Swedan* helps to reduce *Stambha* and *Gaurava* in body, *Shashtikashali Pindasweda*, which does work both way in reducing *stambha* and also producing *Brimhana* to body³.

As *Basti* is the best treatment to overcome increased *Vayu*. *Basti* may destroy the seed of all diseases⁴ moving in *Madhyammarga*. In Cerebral palsy, *Matra Basti* can administer but *Nirooh Basti* is contraindicated during

Balyavasta by one year of child. According to *Charaka Samhita* it is said to be *Balya* (strengthening), *Sukhopachaya*, *Sruta Purisha*, *Brimhana* and *Vatarogahara*.

Acharya Vagbhata has defined the *MatraBastis* the *Bast* in which the dose of *sneha* is equal to *hrasvamatra* of *snehapana*. *Matra Basti* is promotive of strength without demand of strict regimen of diet, causes easy elimination of *Mala* and *Mutra*. It is performed the function of *Brimhana* and cures *VataVyadhi*. It can administered at all times in all seasons and is harmless⁵.

Ksheerabala Taila is used to treat *Vata Vikara* (central nervous system disorders). Main contents of *Ksheerabala Taila* is *Bala* (*sidacardifolia*), *Ksheera* and sesame oil (*Sidacordifolia*) has more antioxidant activity used for the management of neurodegenerative diseases. It also normalizes *vata* and has anti-inflammatory properties⁶. It soothes excited nerves helps in strengthen muscles. Cow's milk had both proxy radical trapping capacity and superoxide radical trapping activity. Investigators had also demonstrated the significant neuro-protective activity of Sesame oil.

AIM:

Evaluate the effect in the management of Cerebral palsy.

1. *Abhyang* with *Ksheerbala Taila*.
2. *Swedan* with *shashtishali pind swed*.
3. *Matrabasti* with *Ksheerbala Taila*.

OBJECTIVE:

1. To stress the importance of *Basti Chikitsa* in Cerebral palsy.
2. To study any other associated benefits of *MatraBasti*.

MATERIALS AND METHOD

Selection of patient-

Patients of Cerebral palsy were selected from O.P.D. and I.P.D. of S. S. N. Jain Ayurveda Hospital, Solapur, during 2011 to 2014.

Study Population: Patient from periphery area of Solapur/ Maharashtra.

Sample Size: 20 patients having Cerebral palsy after clinical examination willingly participating study were selected from S. S. N. Jain Ayurveda Hospital, Solapur.

Inclusion criteria-

1. Children of Spastic Diplegia, Cerebral palsy in age group 2 to 7 years were included in the study.
2. Children with developmental disability i.e. both physical and mental in mild to moderate degree were included in the study.

Exclusion criteria-

1. Patients with severe physical disability excluded from the study.
2. Children of cerebral palsy having Cardiac diseases, Diabetes, epilepsy and congenital disorders were excluded from the study.

Ethical Consideration: Ethical clearance was obtained from institutional Ethical Committee of SGR Ayurveda College Solapur, Maharashtra.

Plan of study:

It was a clinical study with pre-test and posttest design. About 20 patients fulfilling the criteria for inclusion were studied.

Method of administration of *Matra Basti*:

Matra Basti was given after the patient has passed the stool routinely and has taken light meal. First patient was subjected for *Matra Basti* with *Shatika Shali Pinda Sweda* for about 40 minutes. 20 ml of *Ksheerabala Taila* made lukewarm and *Basti* was given with Catheter and 50 ml syringes. Then the patient was asked to lie on supine posture.

Duration of treatment:

After the completion of 7 days of *Basticourse* a gap of 7 days was given and then again 7 day course of *Matra Basti* was given, in these ways total 6 courses of *Matra Basti* with 7days gap were given during the period of 3 months.

Assessment Criteria:

1. ADL Evaluation:

Eating, Drinking, Brushing, Bathing and Toileting was assigned the following score-

Total dependent	3
Can do with physical support	2
Can do with verbal prompting	1
Can do independently	0

2. Gross Motor:

Crawls a distance of 5 feet or more, Sitting, Standing, Walk for minimum 5-10 steps and claps hands

Cannot perform at all	3
Can do with support	2
Can do without support	1
Can do independently	0

3. Fine motor:

Puts small objects into a container, Throws ball in any direction, Uses thumb and index finger and folds paper and insert it into an envelope-

Not does at all.	2
Does with help	1
Does independently	0

4. Language:

A) Ability to understand verbal commands-

No response	3
Turns face but not	2
Understands but not acting accordingly	1
Understands and act accordingly	0

B) Speech-

No speech and sound	4
Pronounces sound without speech	3
Pronounces same words with meaning	2
Making not well formed sentences	1
Can speak well formed sentences	0

5. Performance:

Making a triangle between three points-

Cannot draw at all	2
Can meet 2 points	1
Can draw triangle	0

6. Mental status:

A) Medha (grasping power or Intellect)-

Very poor to grasp ideas even with continuous explanation	2
Can grasp ideas with continuous explanation	1
Can grasp ideas by single explanation	0

B) Smrithi(Memory after showing five familiar objects)-

Cannot recollect any one of the object shown	2
Can recollect objects but forgets the order.	1
Can recollect five objects in the same order.	0

C) Bhayam/ Dhairyam-

Scares easily by sudden response or events.	2
Scares but adopts by exposure to events	1
Rarely scares to sudden response to events and adopts easily	0

D) Vasyatha (Obedience)-

Never obedient when instructed	2
Often obedient when instructed	1
Always obedient when instructed	0

E) Harsha-

Never Laughs or enjoys on social events	2
Occasionally laughs or enjoys on social events	1
Normally laughs or enjoys on social events	0

FOLLOW-UP:

After the completion of 3 months treatment, patients were advised to attend the OPD at an interval of 15 days for next 3 months for the follow up.

Assessment of the above mentioned skills and abilities were made initially before starting the treatment and at the end of treatment i. e. after 3 months and improvement is compared and analyzed statistically. No control group has been kept in the study.

OBSERVATION:

In the present study cerebral palsy was more prevalent in male children (65%) in age group of 2-4 years (60%), hailing from middle class (50%), and Urban (area 60%). Birth asphyxia showed as major causative factor for cerebral palsy. *Krura Kostha* is found in more cases of cerebral palsy, may be because of *Apana Vata Vikruti*.

13 Patients (65%) had an H/o consanguineous marriage and remaining (35%) parents of patient did not have such history. In study 55% patients father were businessman where 30% were agriculturist. Out of 20 patient 10 patient mothers received regular ANC while 9 had history of irregular ANC and 1patients mother had no ANC. In Present study 12 patients were born at full term, 7had pre term birth history and 1 had post term.

In study 65% patients had h/o normal delivery, 25% had LSCS and 10% had a H/o Instrumental delivery. Out of 20 patients 16 patients had late weaning and 6 patients had H/o birth asphyxia.

Majority of patients were of Spastic variety and diplegic in nature. This supports H/O birth asphyxia as the major cause for cerebral palsy.

RESULTS

Effect of KsheerabalaTaila on ADL evaluation-

At the end of three months of treatment the effect of *Ksheerabala Taila* on ability of eating was found to be improved by 28.81% with highly significant P value <0.001. Ability to drinking improved by 30.14%. Good improvement i.e. 18.42% was seen in brushing, 12.08 in bathing and 4.78 in toileting. In all results P value is significant.

Effect of KsheerabalaTaila on Gross motor functions-

Improvement in crawling by 34.78%, with P value at <0.001, sitting by 36.36%, clapping hand by 26.31% in both P value is <0.001. Activities in standing showed improvement by 32.55% and in walking improvement was 34.04%. All results are statistically highly significant.

Effect of Ksheerabala Taila on Fine motor activities-

Ksheerabala Taila in the form of *Matra Basti* showed good improvement in performing skills such as putting objects in the container by 19.35%, throwing ball in any direction is 30.00%. Retain 2 one inch cubes by 15.38% , Using thumb and index finger by 9.37% and Folding paper end inserts in envelop by 12.5%.

Effect of Ksheerabala Taila in ability to understanding verbal commands-

Ability of patient to understand for verbal commands was improved by 38.63% with highly significant P value.

Effect of Ksheerabala Taila in Speech-

Effect shows, improvement with respect to Speech by 23.52% with P value at <0.005.

Effect of Ksheerabala Taila in Mental status-

Effect of *Ksheerabala Taila* in improving the mental status is statistically highly significant. *Smrithi* increased by 27.58%, *Bhayam/Dhairyam* increased by 23.33% in both P value is < 0.005. Improvement in *Harsha* is 35.71% with P value < 0.001. *Vasyatha* of the patient after treatment has improved by 25.00% which is highly significant. *Medha* improved by 27.58% with significant P at <0.005.

Effect of Ksheerabala Taila in Performance-

The performance skill was improved by 27.42% at a significant level of P < 0.00. Overall result of *Ksheerabala Taila Matra Basti* is encouraging.

Sr. No.	Assessment criteria	Improvement after 3 months	Improvement after 6 months
1.	ADL Activities	17.90%	23.68%
2	Gross motor	32.80%	36.43%
3	Fine motor	17.32%	22.10%
4	Ability to understand verbal commands	38.63%	40.90%
5	Speech	23.52%	23.52%
6	Mental functions	26.76%	30.20%
7	Performance	29.41%	35.29%
	Total	26.62%	30.30%

DISCUSSION

In this clinical trial *Matra Basti* was used which was retained for 2-4 hours. So drug might have been absorbed well into the system and gives maximum benefits in cerebral palsy. In ADL evaluation, brushing, bathing, toileting etc. may need proper and continuous training along with improvement in general motor functions and mental functions. Improvement in gross motor function may *Brumhana* effect and *Vatahara* property of *Basti*.

Cerebral palsy is compared with *Shiromarma bhigatajvata Vikara* and *Basti* with *Vatahara Taila* advised as the line of treatment in the classics with intention to alleviate *Vata*. Probable mode of action: The main causative factor for the Cerebral palsy is *Vata* and best therapy is supposed to be *Basti Chikitsa*. This is most probably due to its controlling and regulating mechanism over the nervous system. *Basti Dravya* may enter minute channels of body and tissues get proper nourishment.

Drugs administered high in the rectum are usually carried directly to the liver and thus, are subject to metabolism. Drugs administered low in the rectum are drained systemically by the inferior and middle rectal veins before passing through the liver.

Rectal pH may also influence drug uptake by altering the amount of drug that is ionized. The greater lipid solubility of no ionized drugs enhances their movement across biological membrane. The pH of the rectal Vault in the children ranges from 7.2 to 12.2. This pH ranges favors absorption of the drug.

CONCLUSION

Pathogenesis of cerebral palsy can understood in terms of *Vatavyadhi* due to *Aghataja* leading *Vata Prakopa*. The present study showed better results in Activities of daily living (ADL) evaluation, Gross motor function and mental function. If treatment can be started early age, (i.e. immediately after cerebral injury or as early as possible) when there is a lag in milestones of development, one can expect better results. Management of cerebral palsy includes of *Medha Rasayanas* specific *Panchakarma* like *Abhyanga*, *SSPS* and *Basti* therapy etc. Modern science mentioned a team of approach towards cerebral palsy patient with occupational therapist, physiotherapist etc. So rather than a single drug therapy a multiple treatment modality should be carried out to find better solution for Cerebral palsy.

LIMITATION

The study was limited to single geographical area and also sample size was very small. Further studies are necessary to evaluate the effect of *KsheerabalaTaila*.

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