



Efficacy of IISM protocol (ayurvedic regimen) in Cerebral Palsy children- Case study

Dr Saniya Pathan^{1*}, Dr T Y Swami², Dr A P Rana³, Dr D V Kulkarni⁴

¹PG Scholar, Balroga, Government Ayurvedic College, Osmanabad, India.

^{2,3}Professor, Balroga, Government Ayurved College, Osmanabad, India

⁴Professor and HOD, Dravyaguna, Government Ayurved College, Osmanabad, India

ABSTRACT: Childhood period is considered as the foundation of the better future life and every incidence has influence on the further life. Disability is a major problem which affects the healthier life of the children. Cerebral Palsy refers to a group of neurological disorders that appear in infancy or early childhood and permanently affects body movement and muscle coordination. The prevalence of CP among children is 3 per 1000 live births. At present, other than physiotherapy and supportive medication, there is no complete cure available for this disorder. In this work, we have studied the efficacy of ayurvedic regimen that is *Panchakarma Chikitsa (Abhyanga, Pindasweda, Vaikalyahar Basti and Shirodhara), Medhya aushadhi* i.e. *Brahmi ghruta* and herbomineral preparation orally, and Physiotherapy for 2 months in CP children. Even though modern medicine has labeled CP as incurable, our study on 19 CP children with Ayurvedic regimen, had revealed significant improvement. In this study GMFCS 66 has been used to study results. Paired t test was applied, which showed good result at 1% level of significance and confidence interval of 99%. Here we concluded that this ayurvedic regimen provided better direction by improving quality of life of CP children with better life expectancy.

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Keywords: Cerebral Palsy

1. Introduction

As per World Health Organization (WHO) estimation, 10 part of the global population has some or other form of disability due to various causes, In India, percentage of disability is 3 – 4 % of the total population. Nearly 1/6 of the total physically handicapped children suffer from Cerebral Palsy (CP). For India, the incidence is estimated around 3/1000 live births; however, the expected actual figure may be much higher as India is a developing country. [3]

Cerebral Palsy is a being defined as a group of non-progressive, non-contagious conditions having characteristically abnormalities in movement, posture and tone. There may be sensory organs involvement (i.e. vision, hearing, speech, etc.) and psychology including intelligence to variable extent.

As far as management or preventive aspect is concerned, no satisfactory criteria have been developed to date. Etiology and clinical features reflects that these cases should be treated with *Medhya, Vatashamak* and *Balya*

* **Corresponding author e-mail:** sypathan1991@gmail.com
Tel.: +91 0000000000

Chikitsa, hence the use of *Panchakarma* procedures and specific oral *ayurvedic* herbal medications have been employed to improve the condition of children with CP.

Aim

- To study the efficacy of IISM protocol (*ayurvedic* regimen) in children with Cerebral Palsy.

Objectives

- To evaluate the effects of *ayurvedic* regimen in CP children.
- Early rehabilitation to improve the functional capacity of child and to save him from being crippled.
- Regimen was prepared according to GMP guidelines and their safety was tested prior to use.

2. Material and methods

Place of study

Patients were screened in pediatric opd of Government Ayurvedic College and enrolled according to diagnostic & inclusion criteria.

Consent

A well informed consent was taken from all parents / guardians before start to study.

Type of study

The present study is open observational clinical trial of two months duration.

Sample size

20 patients

Regimen included in study

1) *Panchakarma Chikitsa*

2) *Medhya aushadhi (including rasa kalpa)*

3) Treatment of associated conditions

4) Physiotherapy

- ❑ *PanchakarmaChikitsa* include *SarvangaAbhyanga, Pindasweda, Basti* and *Shirodhara*.

i) *Abhyanga* – with *Tilatail*

ii) *Shalishashtik Pinda sweda*

iii) *Basti - Niruha* with *Vaikalyaharbasti (Musta, Guduchi, Shatavari, Ashwagandha, Bala and Yashtimadhu)*

iv) *Basti - Anuvasana* – with *Tilatail*

v) *Shirodhara* – with *Tilatail*

- ❑ *Medhya aushadhi - Brahmi ghruta* and herbomineral compound

- Treatment of associated Conditions – for e.g. In speech impairment- *Vacha + akkarkara choorna jivha pratisaran*

Matraof Niruha and Anuvasanabasti and Medhyadravya was given as per the reference of *CharakSamhita* and *SharangdharaSamhita* according to age respectively.

Duration of study - total duration was 6 months.

- As per convention before *Basti, Sarvanga Abhyangawith Tilatail and PindaSweda* was given to the patient for 30 days as per *Karma Basti krama*.
- Such 3 cycles of *Basti* was given with the interval of 30 days.
- *Brahmighruta* was given for 6 months early in the morning empty stomach.
- *Abhyanga, Pindasweda* and Physiotherapy was continued daily for 6 months.
- *Medhya Rasayan* drugs along with *rasa kalpa* (herbomineral preparations).

Inclusion criteria –

- Children of CP between 1 year to 16 years of age.
- All the cases of either sex irrespective of caste and religion will be included in the study.

Exclusion criteria

- Children less than 1 year & more than 16 years of age and whose DQ is more than that of the 5 years of normal child.
- Children with severe infectious diseases such as TB, meningitis.
- Children with any major congenital malformation such as Congenital heart disease.

Note The conflict of interest in this study is none.

3. Observations and results

Although it is incurable; in our study we have treated 20 CP children. Our study has shown improvement in such patients. so this study can provide better direction by improving quality of life of CP children with better life expectancy. In this present study GMFCS 66 has been used to study results. Paired t test is being applied shown good result at 1% level of significance and confidence interval of 99 %.DF of 19 at $t_{19} = 7.49$ & mean 5.92, SD3.55, SE of difference = 0.79, n =20, p=0.001%. some patient shown decrease in GMFCS scores as felt seriously ill during the treatment.it is observed that the velocity of improvement was fast as compared to parents previous experience with other modalities of treatment.

All the observed data was subjected to statistical analysis. It shows that the total cpk level were decreased after 1 month of treatment. Clinical improvement of symptom was observed in terms of decreased rigidity of calf muscles. Their ability to walk, climb or doing daily routine improved to some extent. Their extension of shoulder and arms improved as they started using it for picking objects better than before. Some patients were not able to eat with their hands started using spoons for eating with little assistance for care takers. Some patient's mobility was improved as they were not ambulant before starting the treatment. Now they are able to sit with support on wheel chair as they can hold their body in a plane to some extent.

Neck movement of some patients also increased, resulting in increase in their visual field, and became more attached to the surroundings. Patient's social involvement was increased as a result of that they started interacting with their peers. They started playing simple games like picking the balls, rings, etc. as a part of their occupational therapy. During physiotherapy it has been observed that the angles of extension of their joints like shoulder joint, elbow joint, wrist joint, hip joint, knee joint, ankle joint. so it has been observed that this regimen is helpful to serve CP patients.

Discussion

The above results give us idea to go for RCT in near future with multicentre trials. we should go for more micro level research to derive result in various components of treatment with *Abhyantar snehapan* with medicated *ghruta* gives *santarpan* to the child along with, it works in neurogenesis, myelination & synaptogenesis as *Brahmi* has stabilised results for that. Internal medications we give works on the vitiated doshas & they are *dhatu poostikara*. Shirodhara proves to be mood stabilizer in action. It normalizes *rajand tamGuna* in child. *Bahya Abhyanga & sweda* gives strength to the *maans dhatu*, *sandhibandha*, *shira* and *kandaras*. It nullifies the effect of *vata dosa*. Overall effect of the treatment is *dhatu poostikara*, *dosashamaniya*, *Medhya & santarpaniya* which is very essential for these children as they are malnourished, delays in developmental milestones. They are nutritionally deprived. Thus with this very primitive but meticulous study we can produce a ray of hope for such patients.

Summary

The treated 20 CP children of our study has shown improvement. so this study can prove to be better by improving quality of life of CP children with better life expectancy. In this present study GMFCS 66 has been used to study results. Paired t test is being applied shown good result at 1% level of significance and confidence interval of 99%. DF of 19 at $t_{19} = 7.49$ & mean 5.92, SD 3.55, SE of difference = 0.79, n = 19 p = 0.001%. Some patients have shown decrease in GMFCS scores as they became ill during the treatment. it is observed that the improvement was rapid as compared to the previous experiences of parents of patients with other modalities of treatment. Over all compliance of the patient was good.

Conclusion

The conclusion is drawn based on overall assessment, tabulations, statistic and graphical presentation. The present study shows encouraging results to put forwards the integrated protocol including ayurvedic therapy and therapeutics along with all other specialities in the management of cerebral palsy.

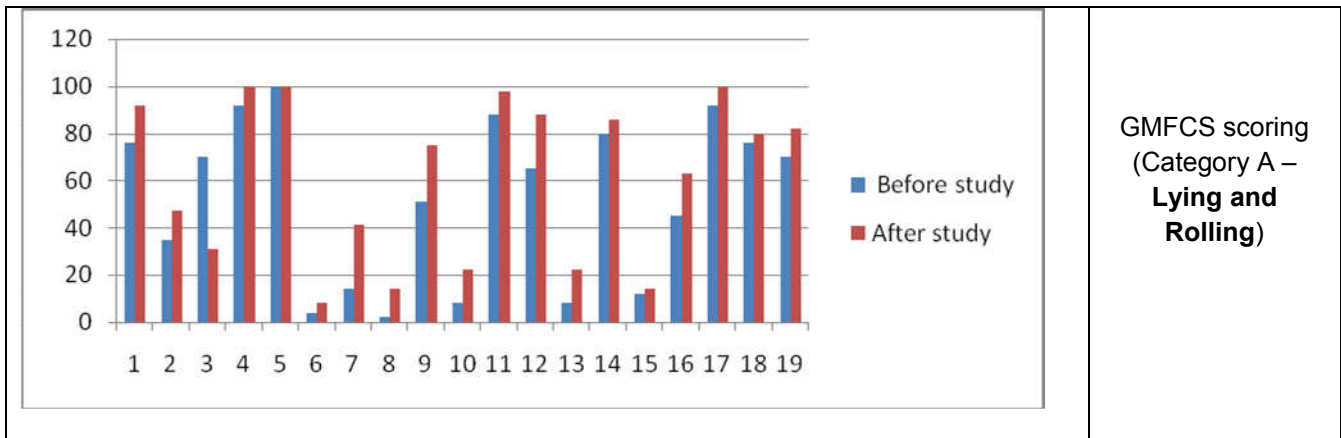
Abbreviations

1. Abhyanga - Manual penetration of premedicated oil with external massage over skin in specific direction and pressures.
2. Shashtishalik Pindasweda - application of steam of pre-cooked rice (Shashtishalik) in milk.
3. Karma Basti - 30 days regimen of pre-medicated drugs in enema form.
4. IISM - Integrated Indigenous System of Medicine.

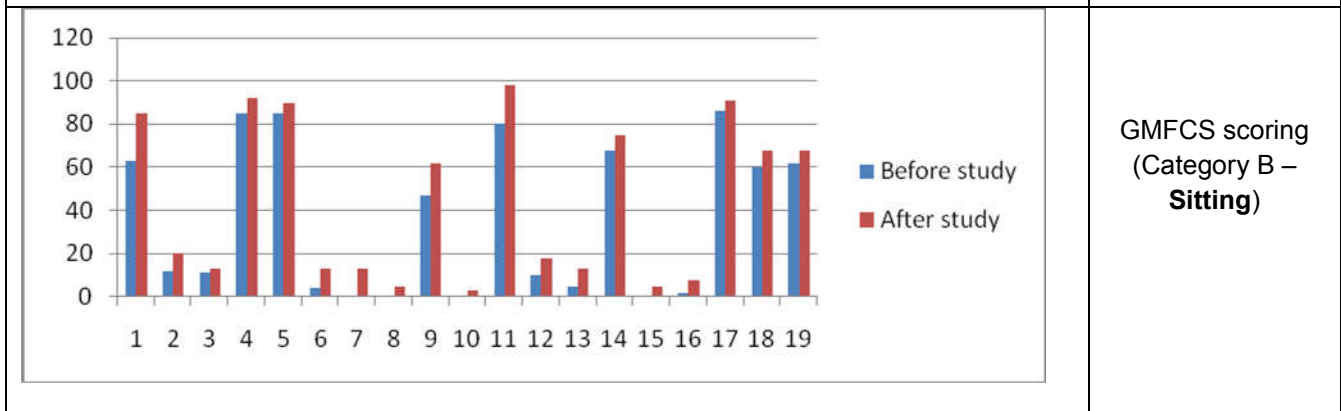
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Patient no	GMFCS on admission	GMFCS after 6 months
1	42.26	44.31
2	14.35	25.12
3	40.88	60.05
4	18.99	19.13
5	2.15	11.31
6	50.17	60.10
7	34.02	34.21
8	52	54
9	4.30	12.51
10	33.01	44.32
11	1.22	11.79
12	0.60	3.63
13	10.77	15
14	15.02	20.67
15	20.02	33.61
16	17.55	29.03
17	45	56.71
18	3.30	3.65
19	25.33	31.24
20	33.01	45.35



GMFCS scoring
(Category A –
**Lying and
Rolling**)



GMFCS scoring
(Category B –
Sitting)

<p>GMFCS scoring (Category C - Crawling and Kneeling)</p> <table border="1"> <thead> <tr> <th>Category</th> <th>Before study</th> <th>After study</th> </tr> </thead> <tbody> <tr><td>1</td><td>60</td><td>65</td></tr> <tr><td>2</td><td>0</td><td>0</td></tr> <tr><td>3</td><td>10</td><td>15</td></tr> <tr><td>4</td><td>65</td><td>68</td></tr> <tr><td>5</td><td>62</td><td>62</td></tr> <tr><td>6</td><td>0</td><td>0</td></tr> <tr><td>7</td><td>0</td><td>12</td></tr> <tr><td>8</td><td>0</td><td>0</td></tr> <tr><td>9</td><td>8</td><td>22</td></tr> <tr><td>10</td><td>0</td><td>0</td></tr> <tr><td>11</td><td>78</td><td>85</td></tr> <tr><td>12</td><td>8</td><td>28</td></tr> <tr><td>13</td><td>0</td><td>0</td></tr> <tr><td>14</td><td>12</td><td>45</td></tr> <tr><td>15</td><td>0</td><td>0</td></tr> <tr><td>16</td><td>2</td><td>2</td></tr> <tr><td>17</td><td>65</td><td>68</td></tr> <tr><td>18</td><td>5</td><td>10</td></tr> <tr><td>19</td><td>5</td><td>8</td></tr> </tbody> </table>	Category	Before study	After study	1	60	65	2	0	0	3	10	15	4	65	68	5	62	62	6	0	0	7	0	12	8	0	0	9	8	22	10	0	0	11	78	85	12	8	28	13	0	0	14	12	45	15	0	0	16	2	2	17	65	68	18	5	10	19	5	8	
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