

Study of the efficacy of an ayurvedic treatment regimen on Balaka Pakshaghatha with special reference to cerebral palsy

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Abstract

Balaka Pakshaghatha (BP) is a condition that affects movement, posture and co-ordination, and it is caused by Shiromarmabhighata (damage of the brain), before, during or soon after birth. Because of this problem most of the children have to face many motor activities dysfunction and it becomes a common developmental disability problem. Cerebral palsy (CP) is also a condition, described in modern medical science resulting from damage to the brain before, during or soon after birth. Etiopathogenesis and symptoms of Balaka Pakshaghatha are similar to cerebral palsy. Objectives of this study were to evaluate the efficacy of an Ayurvedic treatment regimen with selected Pancha Karma (bio purification measures) treatments for the management of Balaka Pakshaghatha with special reference to cerebral palsy and to compare the effectiveness of Ayurvedic treatment and Physiotherapy treatment for the management of Balaka Pakshaghatha. Sixty patients in the age group of 1-6 years of CP/BP were taken for the study from the Paediatric Clinic of Ayurveda Teaching Hospital, Colombo and Physiotherapy Unit of Awissawella Base Hospital in Sri Lanka. Sixty patients were divided in to two groups, 30 patients in each group. The test group of 30 patients were selected for Ayurvedic treatment. 30 patients were randomly selected for physiotherapy treatments. Ayurvedic treatment regimen was of three rounds of treatment of 45 days in each round with two months gap and six months follow up. The efficacy of each therapy was evaluated by Gross Motor Function Classification System. Both Ayurvedic and Physiotherapy treatments had significant result of 'p' value at < 0.05. In Ayurvedic, treatment 'p' value is 9.44 E-13 and in the Physiotherapy treatment, has been 3.32 E-08. Ayurvedic treatment regimen and Physiotherapy have the capacity to improve the gross motor functions of Balaka Pakshaghatha. However, Ayurvedic treatment regimen is highly effective than Physiotherapy treatment in the management of Balaka Pakshaghatha.

Introduction

Balaka Pakshaghatha (BP) or Cerebral Palsy (CP) is a

condition that affects movement, posture and co-ordination, and it is caused by damage to the brain before, during or soon after birth [1]. Most of the children have to face many motor activity dysfunctions due to this problem and it becomes a common developmental disability problem. It has been recognized as one of the Vatha vyadhi in the field of Ayurvedic medicine [2]. Annual incidence of BP/CP is 2-2.5 per 1000 births [3]. Extrapolated statistics for Balaka Pakshaghatha in Sri Lanka is 39810 per 19,905,165 [4]. The objectives of this study were to evaluate the efficacy of an Ayurvedic treatment regimen with selected Pancha Karma (Bio Purification measures) treatments available in Paediatrics Ward at Boralla Ayurvedic Teaching Hospital for the management of Balaka Pakshaghatha with special reference to Cerebral Palsy and to compare the effectiveness of Ayurvedic treatment and Physiotherapy treatment for the management of Balaka Pakshaghatha.

Materials and Methods

Sixty patients in the age group of 1-6 years of BP/CP were taken for the study irrespective of their sex, race and religion etc. from the Paediatric Clinic of Ayurvedic Teaching Hospital Colombo and Physiotherapy Unit in Awissawella base Hospital.

Patients with history of delayed milestone, spasticity in one or all the limbs, persistence of primitive reflexes were diagnosed by using performa as BP/CP and selected for the study. Children who have history of delayed developmental milestone, body stiffness, communication difficulties, restless behaviour, abnormal reflexes, BP/CP with history of convulsion were included in this present study. Children those who are suffering from convulsion, who are not in progress after two months OPD treatment, children below one year and above 6 years of age, and those who have other systemic disorders like Asthmatic condition, Heart disease etc. were excluded.

The sample of sixty patients was divided in to two groups, including 30 patients of each group. Test Group

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(Group A), who had some progress after two months O.P.D. treatments, were selected for Ayurvedic Treatment. Patients in Physiotherapy group (Group B) were selected considering their age range such as 1-2 years, 2-4 years and 4-6 years for Physiotherapy Treatments.

Ayurvedic treatment schedule

Outdoor treatment period was two months. The patients who had some progress were treated in Indoor Patient Department with three rounds of treatments of 45 days, each round with two months gap, and six months follow up.

Methods of administration of drugs

In first two weeks Patients were treated with Etamaduru Decoction [5] and Bhrahmi Mandukaparnie Maduyashti Decoction (*Bacopa monnieri* L., *Centella asiatica* L., *Glycyrrhiza glabra* L.) 60 ml each twice a day, Vacha Ashvaganda [*Acorus calamus* L., *Wilhania somnifera* L. Dunal] powder ¼ tea spoon at night with bee honey, and Mahadalu Anupana [6] with Chandrakalka [7] 250mg twice a day with bee honey. As an external treatment, used Narayana oil application (Taila Abyanga) over upper limbs, lower limbs and head. In third week, Dashamooladi Decoction [8] and Bhrahmi Mandukaparnie Maduyashti Decoction 60 ml. each twice a day and Vacha Ashvaganda powder ¼ teaspoon at night with bee honey given internally and externally used Shiro Dara with Narayana oil.

During the period of fourth week, used the same internal treatment as third week and externally treated with Pizichil using Narayana oil. During the period of fifth week, internally treated with Danthimoolade Decoction [9] and Bhrahmi Mandukaparnie Maduyashti Decoction twice a day, Vacha Ashvaganda Powder at night and Saraswatha Powder [10] ¼-tea spoon with bee honey in the morning. Externally patients were treated with Sashtika shali Pinda sweda.

After the fifth week, patients were treated three days with Darthri Powder [11] ½ tea spoon at night, which has mild purgative action. During the last week of treatment regimen, internally used Mashabalade Decoction [12] and Bhrahmi Manduka parnie Maduyashti Decoction 60 ml each twice a day, Saraswatha Powder ¼ tea spoon in the morning with bee honey and Vacha Ashvaganda Powder ¼ tea spoon with bee honey at night. Administered Vasti treatment (Enema) using one ounce of Narayana oil.

Physiotherapy treatment schedule

Physiotherapy treatment depended on the affected limbs and the body parts. It consists of a number of exercises that include stretching, strengthening, and

positioning. Bracing, abduction pillows, knee immobilizers, wheelchair inserts, sitting recommendations and handling techniques were used in physiotherapy according to the affected parts of the body.

Duration for physiotherapy was 45 minutes per day. It continued with three rounds of treatment of 45 days, each round with two months gap and six months follow up.

Assessment criteria

The criteria for assessment of treatment was based on gross motor function classification system (GMFCS) [13]. Before starting the treatment for the children, they were assessed by using the assessment criteria of GMFCS. Then patients were categorized according to the age and levels of their conditions. GMFCS contains of five levels. Level 1 is the best (maximum improvement) and level 5 is the least (minimum improvement). After completion of the treatment, they were assessed by using GMFCS, compare pre treatment, and post treatment levels.

Statistical method

Inter group statistical analysis was performed by using sample t test of pre-treatment and post-treatment. Level of significance was set at $p < 0.05$ in both groups.

Discussion

The efficacy of each therapy was studied by using GMFCS and results were derived after subjecting to statistical analysis.

In group A, only five patients were found between the age from 1-2 years. One patient was in level 5, three were in level 4 and one was in level 3 at the beginning of Ayurvedic treatments. After completion of this treatment regimen, they were found to be in the levels of 1, 2, and 3 (Table 1) Seventeen patients were between the ages of 2 and 4 years. All of them had a significant progress and came forward (Table 2). Eight patients were found between the ages of 4 and 6 years. Most of them achieved progress after the Ayurvedic treatment (Table 3).

In Group B, 10 patients were found between the age of 1-2 years. They too were in the levels of 3, 4, and 5 at first, after treatments they acquired some improvement. Some of them remained in the same level even after treatment (Table 1). There were only 10 patients between the age group of 2 and 4 years. Some patients remained in the same levels even after the treatments (Table 2). Only 10 patients were found between the age groups of 4 to 6 years. After treatment, they achieved some progress. However, no one succeed to the level 1 and 2 (Table 3).

Table 1: Effects of treatment of patients between 1 and 2 years of age (Group A and B) (n=15)

GMFCS Levels	No. of patients before treatment		No. of patients progressed after treatment (GMFCS Levels)									
	A	B	Level 1		Level 2		Level 3		Level 4		Level 5	
5	1	5	0	0	0	0	1	1	0	2	0	2
4	3	4	1	0	1	1	1	2	0	1	0	0
3	1	1	0	0	1	1	0	0	0	0	0	0
Total	5	10	1	0	2	2	2	3	0	3	0	2

Table 2: Effects of treatment of patients between 2 to 4 years of age (Group A and B) (n=27)

GMFCS Levels	No. of patients before treatment		No. of patients progressed after treatment (GMFCS Levels)									
	A	B	Level 1		Level 2		Level 3		Level 4		Level 5	
5	5	3	1	0	2	0	1	0	1	2	0	1
4	10	5	1	0	7	0	2	4	0	1	0	0
3	2	2	1	1	1	1	0	0	0	0	0	0
Total	17	10	3	1	10	1	3	4	1	3	0	1

Table 3: Effects of treatment of patients between 4 to 6 years of age (Group A and B) (n=18)

GMFCS Levels	No. of patients before treatment		No. of patients progressed after treatment (GMFCS Levels)									
	A	B	Level 1		Level 2		Level 3		Level 4		Level 5	
5	2	5	0	0	0	0	1	1	1	4	0	0
4	5	4	0	0	2	0	2	2	1	2	0	0
3	1	1	0	0	1	0	0	1	0	0	0	0
Total	8	10	0	0	3	0	3	4	2	6	0	0

Table 4: Intra Group analysis of the overall effect of Ayurvedic Treatment Regimen and Physiotherapy Treatment regimen

Group	Mean		SD	t	P	Remarks	
	BT	AT					
Ayurvedic (Group A)	4.133333	2.333333	0.62881	0.844182	11.64127	9.44E-13	Significant
Physioth. (Group B)	4.275862	3.413793	2.067816	1.847645	7.260223	3.32E-08	Significant

P values are significant at $p < 0.05$

According to the Table 4, Inter group analysis of pre treatment and post treatment progress levels of both the groups revealed significant 'p' value ($p < 0.05$). The 'p' value of treated group is 9.44E-13 whereas 'p' value of physiotherapy group is 3.32 E-08.

Conclusion

Ayurvedic treatment regimen and Physiotherapy have the capacity to improve the gross motor functions of Balaka Pakshaghatha/Cerebral Palsy. However, ayurvedic treatment regimen is highly effective than that of Physiotherapy treatment in the management of Balaka Pakshaghata/Cerebral Palsy. Further studies are proposed to evaluate the efficacy of combine therapy, i.e. Ayurvedic treatment regimen and Physiotherapy for the management of Balaka Pakshaghatha/Crebral Palsy.

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