

## A COMPARATIVE CLINICAL STUDY ON AYURVEDA PROTOCOL AND ALLOPATHIC PROTOCOL IN THE MANAGEMENT OF PAKSHAGHATA (CEREBROVASCULAR ACCIDENT DUE TO THROMBUS)

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### ABSTRACT

**Background:** *Pakshaghata* (Cerebrovascular accident) is one among the *Vata Nanatmaja Vikara* (Vata dominating disorder), and most distressing disease among *Vatavyadhi* due to its deep-seated nature. *Pakshaghata* may be defined as loss of voluntary functions of one side of the body. *Pakshavadha* (*Pakshaghata*) by saying that morbid *Vata* beholds either side of body dries up *Sira* (Nerve) and *Snayu* (Tendon) of that part and produces *Cheshta-Nivrutti* (loss of movement) along with *Ruja* (pain) and *Vaakstambha* (Unable to speak). *Pakshaghata* is considered among the ailments of *Madhyama Roga Marga*, i.e., *Marma-Asthi-Sandhi Marga*. Stroke is the clinical term for acute loss of circulation to an area of the brain, resulting in ischemia and a corresponding loss of neurologic function such as weakness, sensory deficit, or difficulties with language. Stroke is not a disease in itself but is heterogeneous group of disorders. Hemiplegia is one of the most frequent and commonest clinical presentations of stroke (cerebrovascular accident). **Method:** In management of *Pakshaghata*, *Acharayas* says various lines of treatments. Those are – *Snehana*, *Sweda*, *Mrudu Samshodhana*, *Mastishkya Shiro Basti*, *Nasya*, *Upanaha* and *Basti* on the basis of *Vyatyasa Chikitsa Siddhanta*. In the Ayurvedic group the assessment was done first after *Nasya* then after *Virechana* and followed by *Basti* treatment and in Allopathic group the assessment was done at the time of admission and at the time of discharge. **Results:** There were statistically highly significant improvements in the signs and symptoms of *Pakshaghata*. ( $p < 0.05$ ) observed. **Conclusion:** Hence, this study is taken to standardize the protocol and the main goals of therapy are to rapidly restore and maintain adequate blood supply to ischemic tissue with an aim to minimize brain damage, and there by minimize neurologic deficit and disability, and to improve the quality of life after the manifestation of stroke.

**Keywords:** *Pakshaghata, Nasya, Virechana, Basti, Cerebrovascular Accident.*

## INTRODUCTION

Being regulator of all other *Dosha*, the disease caused by *Vata Dosha* is much importance. *Pakshaghata* remains in prime position among all other *Vatavyadhis*. It is one among *Vataj Nanatmaja Vyadhi*<sup>1</sup> and is included in *Ashtamahagada*<sup>2</sup>. Morbidity of *Vatadosa* either due to *Dhatuksaya* or *Margavarana* will lead to *Chesta nivritti* in one half of the body and the illness is prevalently known by the name *Pakshaghata*.<sup>3</sup>

Stroke is not a disease in itself but is heterogeneous group of disorders. Hemiplegia is one of the most frequent and commonest clinical presentations of stroke (cerebrovascular accident)<sup>4</sup>. The World Health Organization (WHO) defines stroke as ‘the rapidly developing clinical symptoms and/or signs of focal [at times global] disturbance of cerebral function, with symptoms lasting more than 24 hours or leading to death with no apparent cause other than that of vascular origin.’<sup>5</sup>

Stroke is the third major cause of death worldwide. The world-wide incidence has been quoted as 2/1000 population/annum; about 4/1000 in people aged 45-84 years.<sup>6</sup>

In stroke cases 85% of patients suffer from cerebral infraction and 15% from cerebral hemorrhage.<sup>7</sup> According to the India stroke factsheet updated in 2012, the estimated age-adjusted prevalence rate for stroke ranges between 84/100,000 and 262/100,000 in rural and between 334/100,000 and 424/100,000 in urban areas.<sup>8</sup>

## AIM AND OBJECTIVES

- To standardize the Ayurvedic treatment protocol in the management of *Pakshaghata* (Cerebrovascular accident-CVA) due to thrombus.
- To evaluate the efficacy of Ayurvedic treatment protocol in the management of *Pakshaghata* (Cerebrovascular accident-CVA) due to thrombus.

- To compare the efficacy of Ayurvedic treatment protocol with allopathic treatment protocol in the management *Pakshaghata* (Cerebrovascular accident-CVA) due to thrombus

## MATERIALS AND METHODS

### Source of data:

Patients were recruited from outpatient and inpatient unit of Department of Kayachikitsa, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan.

### Methods of collection of data:

Patients were screened and selected based on the screening form prepared for the said purpose. A case report form was prepared with all points of history taking, physical signs and symptoms of *Pakshaghata*. The selected patients were subjected to detail clinical history and complete physical examination before undergoing the clinical study.

**Diagnostic criteria:** *Pakshaghata* (Cerebrovascular accident -CVA) due to Thrombus.

### Research Design:

Non-randomized, open labeled, active controlled clinical study was carried out in two groups (*Ayurvedic* group and Allopathic group) with sample size of 15 patients in each group.

**Inclusion Criteria:** Caused by most prevalent disease like Diabetes Mellitus, Hypertension, Hyperlipidemia (Any of these). Either gender, Patients aged between 30-75 years,

**Exclusion criteria:** *Pakshaghata* complicated with heart disease, H/o or E/o Intra cranial infection- encephalitis, meningitis, etc. Cerebral tumor, cerebral abscess. Congenital defects- diffused sclerosis, cerebral agenesis. *Pakshaghata* ass. with COPD patients. Marked impaired mental function. Deep unconscious patients.

**Laboratory Investigations:** CT Scan of Head, Blood Routine, Urine Routine, Serum Electrolytes,

Chest X-Ray AP And Lat View and Fasting blood sugar, post prandial blood sugar (If Diabetic)

**Intervention:** After the screening of patients, consent was taken and the full details of the treatment was explained to the patients and patient parties, then only the patients were enrolled for the treatment. Study duration: 10 days

**A. Ayurvedic group treatment protocol:** - During the treatment, 15 patients of the Ayurvedic group were administered the Ayurvedic treatment protocol, observation was noticed after *Nasya*, *Virechana* and followed by *Basti* treatment:-

**Table 1:** Treatment plan for Ayurvedic Group

Days	Treatments	Dose & Administered time															
1 <sup>st</sup> day to 3 <sup>rd</sup> day	<i>Shirodhara</i> with room temperature water	Thrice in a day for 30 minutes															
	<i>Nasya</i> with <i>Pippali</i> , <i>Saindhava Lavana</i> , <i>Maricha</i> , <i>Shunthi</i> , <i>Hingu</i> , <i>Yasthimadhu</i> , <i>Vacha</i> in equal quantity with water	Six drops in each nostril thrice a day.															
	<i>Kavala</i> with <i>Lavangadi vati</i>	One tab thrice a day after <i>Nasya</i> for chewing.															
	<i>Shirosthalam</i> with <i>Manjisthadi Choorna</i> with <i>Shatadhoutha Ghrita</i>	Once in a day for 2 hours.															
	<i>Kalayanaka ghrita pana</i>	25 ml empty stomach one hour before breakfast.															
	Tab. <i>Anand bhairava rasa</i>	One tab thrice a day after food															
	Tab <i>Chandraprabha vati</i>	One tab thrice a day after food															
4 <sup>th</sup> day	<i>Virechana</i> with <i>Gandharvahastadi taila</i> and luke warm milk.	<i>Gandharvahastadi tail</i> 30 ml and luke warm milk 40 ml at 7:00 am															
5 <sup>th</sup> day	<i>Samsarjana karma</i>	<i>Laghu aahara</i>															
6 <sup>th</sup> day to 10 <sup>th</sup> day	<i>Sarvanga Abhyanga</i> with <i>Bruhat Saindhava taila</i> and <i>Nadi Sweda</i>	<i>Abhyanga</i> for 30 minutes and <i>swedana</i> up to <i>swedaagamana</i> .															
	<i>Yogabasti</i> (modified schedule)	<i>Anuvasana basti</i> with <i>Bruhat Saindhava taila</i> 60 ml <i>Niruha basti</i> with <i>Erandamoola kashaya</i> 350 ml <i>Madhu</i> 60 ml <i>Saindhava lavana</i> 10 gms <i>Bruhat Saindhava taila</i> 60 ml <i>Putiyavanyadi kalka</i> 25 gms															
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	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>												
	A	N	N	N	A												
		A	A	A													
	<i>Agni chikitsa lepa-</i> <i>Haridra</i> , <i>Maricha</i> , <i>Lavanga</i> , <i>Lashuna</i> , <i>Sarshapa</i> , <i>Tulsi</i> , <i>Agnimantha</i> , <i>Shigru</i> , <i>Nirgundi</i> in equal quantity	External application over the effected part.															
	Tab. <i>Chandraprabha vati</i>	One tab thrice a day after food															
	Tab. <i>Tapyadi loha</i>	One tab thrice a day after food															
	<i>Maharasanadi kashaya</i>	Three tea spoon, thrice a day after food															
Physiotherapy	Half an hour to the effected part of the body																

All the medicine prescribed during the treatment was from GMP certified and available in SDM Hassan pharmacy having reference of classic.

**B. Allopathic group treatment protocol:** - 15 patients were screened in this group and they were administered modern treatment protocol and assessment was done on date of admission and date of discharge from hospital.

**Assessment criteria:**

Assessment was done based on the improvement in the signs and symptoms by using the following

scales before and after the treatment protocol. In the Ayurvedic group the assessment was done first after *Nasya* then after *Virechana* and followed by *Basti* treatment and in Allopathic group the assessment was done at the time of admission and at the time of discharge.

**OBSERVATION AND RESULT:**

In this Study among 26 diagnosed subjects of *Pakshaghata* due to thrombus were administered to Ayurvedic (14 patients) and Allopathic treatment protocol (12 patients).

**Table 2:** Demographic Observation (for Ayurvedic group)

Geographic observation	Predominance	Percentage	No of patients
Age	51-60 years	53.3%	8
Gender	Male	80.0%	12
Marital status	Married	93.3%	14
Occupation	Farmer	33.4%	5
Habits	Alcohol, smoking and coffee intake	60.0%	9
Diet	Mixed	71.4%	10
Dietary Habits	Irregular	78.5%	11
Prakruthi	Vata-pitta	40.0%	6
Time of onset of disease	Morning	40.0%	6
Duration	Acute	46.6%	7
Dosha Anubandha	Pitta	46.7%	7

**Table 3:** Demographic Observation (for Allopathic group)

Geographic observation	Predominance	Percentage	No of patients
Age	41-50 years	45.2%	5
Gender	Female	54.5%	6
Marital status	Married	100.0%	11
Occupation	Farmer	69.7%	8
Habits	Alcohol and smoking	45.4%	9
Diet	Mixed	58.3%	7
Dietary Habits	Irregular	66.6%	21
Prakruti	Vata-pitta	45.4%	5
Time of onset of disease	Morning	45.4%	5
Duration	Acute	54.5%	6
Dosha Anubandha	Pitta	54.5%	6

The effects of the therapy in 26 patients are being shown here for statistical analysis, Friedman test Wilcoxon Signed Rank test, McNemar test and

Mann-whitney test were done to assess the signs and symptoms as parameters to interpret the time of significant change. (Table no 4)

**Table 4:** Parameters of *Pakshaghata* (In Ayurvedic group)

Serial No.	Parameter	Ayurvedic group		Remark
		Chi-square	p-value	
1.	<i>Mada</i>	15.00	.002	<b>S</b>
2.	<i>Sanjanasha</i>	9.00	.029	<b>S</b>
3.	<i>Bhrama</i>	33.00	.000	<b>S</b>
4.	<i>Chestanivriti</i>	41.89	.001	<b>S</b>
5.	<i>Vaakatambhata</i>	37.93	.001	<b>S</b>
6.	<i>Ruja</i>	31.01	.001	<b>S</b>
7.	<i>Gauravata</i>	26.84	.001	<b>S</b>
8.	<i>Shunayata</i>	35.32	.001	<b>S</b>

**Table 5:** Parameters of *Pakshaghata*

Serial No.	Parameter	Ayurvedic group		Allopathic group	
		p-value	Remark	p-value	Remark
<b>Wilcoxon Signed rank</b>					
1.	Speech	.001	<b>S</b>	.002	<b>S</b>
2.	Facial Expression	.034	<b>NS</b>	.655	<b>NS</b>
3.	Arm Drift	.000	<b>S</b>	.006	<b>S</b>
4.	Leg Drift	.001	<b>S</b>	.002	<b>S</b>
5.	Sitting from lying down	.005	<b>S</b>	.011	<b>S</b>
6.	Walking	.003	<b>S</b>	.525	<b>NS</b>
7.	GCS-Eye	.180	<b>NS</b>	.025	<b>NS</b>
8.	GCS-Motor	.001	<b>S</b>	.021	<b>NS</b>
9.	GCS-Verbal	.001	<b>S</b>	.020	<b>NS</b>
<b>McNemar Test</b>					
1.	Romberg's test	.70	<b>NS</b>	.250	<b>NS</b>
2.	Tenden Walking	.016	<b>S</b>	.250	<b>NS</b>
3.	Finger- nose test	.002	<b>S</b>	.063	<b>NS</b>
4.	Knee-heel test	.004	<b>S</b>	.063	<b>NS</b>
5.	Sensory touch	.002	<b>S</b>	.016	<b>S</b>
6.	Sensory temperature	.002	<b>S</b>	.063	<b>NS</b>
7.	Sensory Position	.002	<b>S</b>	.125	<b>NS</b>
8.	Sensory Pain	.002	<b>S</b>	.125	<b>NS</b>

## DISCUSSION

When treatment was planned the few points were kept in mind while dealing with patients of *Pakshaghata* (CVA). They are:-

1. To restore the function of *Tridosha*.
2. *Rakshana* of *Marma* with restoring the function of *Rasavaha*, *Raktavaha*, *Manovaha* and *Sanjavaha Srotas*.
3. To overcome the pathology of *Pakshaghata*.

4. To avoid or decrease the Morbidity and Motility of *Pakshaghata*.

Keeping the all above factor in mind treatment was carried out. The conscious condition of *Pakshaghata* will be affected by the imbalance of *Manasika Dosha (Tama and Pita)* and *Sangya*.<sup>9</sup> Hence the *Sanja Prabodhana* and *Shiras Shuddhikara Nasya* is the method to restore the function of *Manas* .

In classics other type of *Murdhni chikitsa (Shirodhara, Shirosthalam)* help in restoration of

imbalance *Tridosha* by using *Vyatyasa Chikitsa Siddhanta* for *Pitta Anubandha Vata Vyadhi*<sup>10</sup> Along with the *Ama Pachaka Oushadhi, Vyadhi Pratyaneeka (Shilajitu)*<sup>11</sup> for restoring the *Agni* and *Anabhishtyandi* which helps in cleansing the channels of circulation can be administered. As *Pakshaghata* is *Vata Pradhana Tridoshaja Vyadhi, Amashaya* and *Pakwashya* is the site of origin.

In *Pakshaghata*, *Sira Snayu Vishosha* takes place where *Sira* and *Kandara* are the *Upadhatu* of *Rakta*. *Charaka* has mentioned *Virechana* in *Raktaja Vikara*<sup>12</sup> and for *Pittaja Vikara Virechana* is the treatment of choice. *Kaphandubandhita* and *Pittanubandhita Pakshaghata* have been described in *Madhava Nidana*. This can be compared with *Kaphavruta* and *Pittavruta Vata* respectively. In treatment of both these conditions *Virechana* has been mentioned.<sup>13</sup> After reduction of *Vata, Dosha Anulomana* and *Jataragni Pradeepana, Bahirparimarjana Chikitsa* and *Basti (shodhanartha)* with *Agnichikitsa Lepa* were practiced for correction of pathological consequence seen at the level of *Mamsavaha, medavaha* and *Majjavaha Srotas* help in purifying the morbid *Dosha, Ama Pachana* and *Rakta* and *Vata Parisancharana*. Physiotherapy was followed after the *Virechana* treatment for rehabilitation treatment.

**Shaman Oushadhi used:** During the treatment *shaman Oushadhis* were used. They are:

1. *Ama Pachaka Oushadhi* like *Ananda Bhairava Rasa, Chandraprabhavati* were selected and used during the treatment for purpose of *Pitta anubandhi Pakshaghata, Jatharaagni Mandya Janya Vikara*. These will do the *Vighatana* of morbid *Dosha* and *Ama* at the level of *Amashaya*. In first stage of *Pakshaghata (CVA)* *Pitta Pradhanya Kaphanubandhya Vata Prakopa* usually happens. These treatments were selected to help in reducing *Ushna* and *Teekshna* nature of *Pitta* and *Mala Rupi Kaphadosha (Ama Pachana)* and restore the *Jatharagni*.
2. *Kalayanaka ghrita* was selected as *Shamana Oushadha* in *Avara Matra* for restoring *Vata*

from its *prasarana* nature of *Mudha Avasta* found in earlier stage of *Pakshaghata (CVA)* which is having tendency to spread randomly. To control the *Prasarana* of *Vata* and *Sneha* gives nourishment to the emaciated tissue, promote strength, again and *Pushti* and *Prana Shakti Vardhana*.<sup>14</sup>

3. *Mridu Virechana* with *Gandharvahastadi Taila* for elevating *Pakwashaya Gata Vata* and *Kapha Dosha* for *Samsrushta Dosha* (if *Pitta*, with *Ksheera* and *Kapha* with *Amritasara*).<sup>15</sup>
4. *Chandraprabhavati, Tapyadi loha, Maharasnadi Kashaya* was used during the treatment for purpose of *Shamana* of *Vata* and restores the function of *Mamsa* and *Majja Dhatu*. *Chandraprabhavati, Tapyadi loha* is used as *Naimittika Rasayana*.<sup>16</sup>
5. *Basti* is *Pradhana Chikitsa* for *Pakwashya Gata Dosha* and act as an *Ardha Chikitsa* by controlling all *Vata* and restore its normal function. So *Anuwasana* and *Niruha Basti* were planned with *Bhrihat Saindhava Taila* and *Erandamoola Kashaya*.
6. *Sarvanga Abhyanga* and *Swedana* with physiotherapy were adopted for *Dhatu Prasadana*, strengthening and rehabilitation.

## CONCLUSION

*Pakshaghata (CVA)* is a *Vataja* disorder and always exhibits with *Anubandha Dosha (Pitta and Kapha)*. If *Pita -Vata Anubandha* is there than we have to treat according to *Pitta Vatahara* line of treatment. If *Kapha- Vata Anubandha* is there than we have to treat with *Kapha Vatahara* line of treatment. If *Pitta-kapha Anubandha* is there than first *Pittahara Chikitsa* first, then *Kaphahara Chikitsa* and later *Vatahar Chikitsa* to be followed. In this study it was found that there was statistically significant relief in the symptoms of *Pakshaghata (CVA)* when treated with Ayurvedic treatment protocol. When result was analyzed in both *Ayurvedic* treatment and *Allopathic* treatment protocol, no statistically significant result was found. Hence, both *Ayurvedic* treatment proto-

col and Allopathic treatment protocol are effective in the management of *Pakshaghata* (CVA) due to thrombus.

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