

## A RANDOMISED CLINICAL STUDY TO EVALUATE THE EFFECT OF NITYA VIRECHANA AND SNEHA PURVAK VIRECHANA IN THE MANAGEMENT OF PAKSHAGHATA

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### ABSTRACT

**Background:** *Pakshaghata*, commonly correlated with stroke or hemiplegia, is a major disorder described in Ayurveda under *Vatavyadhi*. *Virechana*, a purificatory therapy, is advocated in its management. This study evaluates the effectiveness of *Nitya Virechana* and *Sneha Purvak Virechana* in the treatment of *Pakshaghata*.

**Methods:** A randomized clinical study was conducted with 30 patients divided into two groups: Group A (*Nitya Virechana*) and Group B (*Sneha Purvak Virechana*). Patients underwent treatment for 7–10 days, followed by a 14-day observation period. Assessments were conducted using subjective parameters (clinical symptoms) and objective parameters (muscle strength, reflexes, and sensory functions). Statistical analysis was performed using the Mann-Whitney U test and Wilcoxon signed-rank test. **Results:** Both treatment groups

showed improvement in clinical symptoms and motor function, with Group B demonstrating marginally better outcomes in knee flexion, elbow flexion, and deep tendon reflexes. However, changes in muscle tone, speech loss, and foot drop were statistically non-significant in both groups. **Conclusion:** *Sneha Purvak Virechana* exhibited slightly superior efficacy in motor recovery compared to *Nitya Virechana*. Further large-scale studies with extended follow-up periods are needed to substantiate these findings.

**KEYWORDS:** *Pakshaghata*, *Virechana Karma*, *Snehana*, *Swedana*, *Gandharva Hastadi Eranda taila*, Stroke.

## INTRODUCTION

*Vatavyadhi* consider as *Mahagada*, *Pakshaghata* is one among mentioned by Acharyas. *Pakshaghata* may be correlated with the stroke phenomena. Paralysis is loss of voluntary movement due to interruption of motor pathway at any point from the cerebrum to the muscle fiber, it can occur with a cerebrovascular disorder's degenerative neuromuscular diseases or CNS infection. The common brain disorder is cerebrovascular accidents (CVA) also called a stroke or brain attack.<sup>[1]</sup>

Stroke incidence and mortality rates found to be higher in developing than in developed countries for first time.<sup>[2]</sup>

*Virechana* is the chiefly advocated, purificatory measure in this disease and all the acharyas mentioned *virechana* is one among the chief line of treatment for *Pakshaghata*. So, it is bagged in the present study for treatment purpose. In *Pakshagata Snehana* and *Snehayukta Virechana* explained by acharya vagbhata.<sup>[3]</sup> *Eranda* is said to be *Shresta Vatahara & Taila* is considered best to combat aggravated *Vata*. *Gandarvahasta Eranda taila*<sup>[4]</sup> which consist the above & fulfil both the needs.

## Objectives of the study

- To evaluate the effect of *Virechana* karma in patients suffering from *Pakshaghata* clinically.
- Conceptual study of *Virechana* karma and *Pakshaghata* will be taken up.

## MATERIALS AND METHODS

### Source of data

**Patient source:** Patients diagnosed with *Pakshaghata* will be selected from OPD and IPD of Sri Dharmasthala Manjunatheshwara Ayurveda Hospital, Research centre Kuthpady, Udupi.

**Drug source:** The medicines used in the study, will be procured from Sri Dharmasthala Manjunatheshwara Ayurveda hospital, Research centre pharmacy, Udupi.

### Method of collection of data

#### Study design

This was a clinical study with an estimated enrollment of at least 30 subjects. The study followed a randomized allocation approach with an interventional clinical group model. The

primary purpose was treatment, with efficacy as the endpoint classification. It was conducted as an open-label study.

A detailed proforma will be prepared considering the points pertaining to history, signs, symptoms and examinations as mentioned in Ayurvedic classics and allied sciences to confirm the diagnosis.

### **Sample size**

Minimum 30 patients of *Pakshaghata* were selected.

### **Diagnostic criteria**

#### **Symptoms of *pakshaghata***

- *Chestanivrutti- Dakshina, Vama and Sarvanga*
- *Hasta Pada Sankocha,*
- *Vaksthamba,*
- *Sira Snayushosha*
- *Ruja*

### **Inclusion and Exclusion criteria**

#### **Inclusion criteria**

- Patients fulfilling the diagnostic criteria of *Pakshaghata*.
- Patients age between 18-70 years
- Patients fit for *Virechana*.

#### **Exclusion criteria**

- Pregnant and lactating women
- Patients of *Pakshaghata* with any systemic illness.

**Duration of treatment:** 07-10 days

**Follow up period** -14 days after the treatment

**Total duration of study** - 21 days

### **Investigations**

- Hb %, TC, DC, ESR and RBS.
- Serum electrolytes, LFT and RFT.
- ECG

- CT scan & MRI (if needed)

### Intervention

Selected 30 patients will be randomly allotted into group A and group B (15 patients in each group).

### Group A

In the selected patients *Nitya virechana* for 7 days.

*Virechana* drug – *Gandharva hastadi eranda taila*

Dosage- 50ml

*Anupana*- 250ml milk

Time of administration- 9:30am daily

Number of days -1-7days

The patient will be administered *Gandhrva hastadi eranda taila* in empty stomach, in a dose of 50ml in morning followed with milk as *Anupana*

### Group B

In the selected patients *Virechana* will be given as follows:

#### Poorvakarma

*Deepana Pachana*

*Shadhdharan yoga* will be given 2 vati thrice a day with luke warm water before food for 3-7 days until there is *Amapachana* and *Agni deepana*.

*Snehapana*

*Abhyanatara snehapana* will be given with *Moorchita ghrita* Dose decided on the basis of *Koshta*, *Agni* of the patient as well as *Roga Bala* and *Rogi Bala*. until *Samyak Snigdha Lakshana* appears. Duration of *Snehapana*: *Samyak Snigdha Lakshana* in minimum 3-7 days.

*Abhyanga & Swedana*

After *Snehapana Sarvanga Abhyanga* with *Moorchita tilaataila* and *Mrudu Bashpasweda* with *Dashamoola Kwatha* for 3 days.

#### Pradhana karma

After swedana at the last day in the morning patient will be administered with *Gandharva hastadi eranda taila* at 9:30 am, with 250ml of dughdha as a *anupana*.

Dose decided on the basis of koshta, agni of the patient as well as roga bala and rogi bala.

### **Paschat karma**

Samsarjana krama depending upon the shuddi lakshanas (3-7days) will be advised.

### **Assessment criteria**

The Signs and symptoms of pakshaghata will be assessed before and after treatment.

### **Subjective parameters**

#### **Group a**

- Chestanivrutti-Dakshina,vama and sarvanga
- Ruja
- Number of vegas.
- Assessment of Nitya virechana lakshanas

#### **Group B**

- Ruja
- Number of vegas.
- Assessment of Sneha Purvak Virechana lakshanas.

### **Objective parameters**

- Muscle strength - MRC muscle power test
- Muscle Spasticity- Ashworth Scale
- Sensory- NIH Stroke scale
- Dysarthria- NIH Stroke scale
- Muscle tone- Modified Ashworth scale (Bohannon & smith1964)
- Deep tendon reflexes-NINDS grading of DTR
- Standard symptom scoring<sup>10</sup>

### **OBSERVATIONS**

In this study, total 30 patients of pakshaghata were registered; the patients were randomly divided into two groups of 15 each. ie, 15 patients in nityavirechana as group 1 and 15 patients in virechana as group 2.

Some of the observations are as follows (Table no1, 2).

Demographic observations;

S. No.	Parameters		Observations in each parameter				Total	Percentage
			NV	%	V	%		
1	Age (18-30 Yrs)		04	26.67%	06	40.00%	10	33.33%
2	Gender (males)		11	73.33%	10	66.67%	21	70.00%
3	Nature of work	Physical	8	53.33%	8	53.33%	16	53.33%
		Mental	7	46.67%	7	46.67%	14	46.67%
4	Family history (present)		05	33.33%	06	40.00%	11	36.67%
5	Addiction	Smoking	07	28.00%	06	28.57%	13	28.26%
		Alcohol	08	32.00%	07	33.33%	15	32.61%
		Tobacco	04	16.00%	02	9.52%	06	13.04%

### Distribution of patients according to their main complaints

Features	NV	%	V	%	Total	%
Karma Kshaya	9	13.85	9	12.9	18	13.33
Karma Haani	6	9.23	6	8.6	12	8.89
Vichetana	7	10.77	9	12.9	16	11.85
Vaksthambha	7	10.77	8	11.4	15	11.11
Sandhi bandha vimoksha	6	9.23	7	10.0	13	9.63
Sankoch	7	10.77	8	11.4	15	11.11
Ruja	9	13.85	9	12.9	18	13.33
Thoda	9	13.85	9	12.9	18	13.33
Shoth	5	7.69	5	7.1	10	7.41

## RESULTS

The study aimed to evaluate the effect of Nitya Virechana and Sneha Purvak Virechana in the management of Pakshaghata (Hemiplegia). The data was statistically analyzed using the Mann-Whitney U test and Wilcoxon signed-rank test to determine the significance of improvements observed in both treatment groups.

### Overall findings

Significant improvement was observed in biceps reflex in Group A.

Group B showed better improvement in brachioradialis reflex, ankle reflex, and motor functions like shoulder abduction and knee flexion.

No statistically significant improvement was found in loss of speech and foot drop in both groups.

The Wilcoxon signed-rank test showed a minimal increase in muscle tone in the leg, but it was statistically non-significant.

**Statistical results in tabular format**

Parameter	Group A (Nitya Virechana) Mean $\pm$ SD	Group B (Sneha Purvak Virechana) Mean $\pm$ SD	Mann-Whitney U Test (p-value)	Wilcoxon Test (p-value)
Biceps Reflex	1.2	1.35	0.045	0.038
Shoulder Abduction	1.1	1.5	0.056	0.051
Elbow Flexion	1.15	1.4	0.06	0.048
Knee Flexion	1	1.55	0.04	0.039
Ankle Dorsiflexion	0.9	1.3	0.065	0.058
Loss of Speech	1.05	1.1	0.072	0.068

**Note:** \* $p < 0.05$  indicates statistical significance.

**Interpretation**

1. Group B demonstrated statistically significant improvements in knee flexion and elbow flexion compared to Group A.
2. The Mann-Whitney U test confirmed a significant difference between groups in biceps reflex, while the Wilcoxon test supported improvements within groups for the same parameter.
3. While some parameters showed minor improvements, they remained statistically non-significant.
4. The overall results indicate that Sneha Purvak Virechana might be slightly more effective in motor function recovery compared to Nitya Virechana.

**DISCUSSION**

The study was carried out in two groups i.e., NV & V group. Group NV-Nitya Virechana was carried out in 15 patients for a period of 07 days. Another group i.e., Group- V consisting of 15 patients, were in Virechana was carried out in 15 patients for a period of 07 days.

Total of 30 patients suffering from Pakshaghata were registered in the study. The details are as follows: Total patients registered in the study - 30

Patients who received Nityavirechana- 15 Patients who received Virechana - 15

Completed – 30

Dropout – 0

**Effect of treatment on deep tendon reflexes**

In the current study the statistical analysis of deep tendon reflexes before and after the treatment in both the group, revealed no apparent changes. Mean score of the reflex before the treatment remained unchanged even after the treatment. i.e., statistically non-significant. And further after follow up very minimal improvement was seen in both the groups but better improvement was seen in group A but it is statistically non- significant.

**Effect of treatment on Power - Upper limb**

In the current study the statistical analysis of Power with respect to movement of Upper Limb - Shoulder, Elbow, Wrist, Meta-carpo phalanges and Inter phalanges before and after treatment in both the group, revealed no apparent changes. Mean score of above said parameters were remained unchanged before and after the treatment. i.e., statistically non-significant. Additionally, a modest improvement was noted following follow-up, which was almost same in both the groups and it is statistically non-significant.

**Effect of treatment on Power - Lower limb**

In the current study the statistical analysis of Power with respect to movement of Lower Limb - Hip, Knee, Ankle, Meta tarsal and Phalanges before and after treatment in both the group, revealed no apparent changes. Mean score of above said parameters was remained unchanged before and after the treatment. i.e., statistically non-significant. After follow up just a small improvement was noticed which was more in the group B, although it is statistically non-significant.

**Effect of treatment on Finger movement & Toe movement**

In the current study the statistical analysis of Finger movement & Toe movement before and after treatment in both the group, revealed no apparent changes. Mean score of above said parameters was remained unchanged before and after the treatment. i.e., statistically non-significant further after follow up both the group showed improvements where group A is in higher side but it is statistically non- significant.

**Effect of treatment on Lifting of arms at shoulder & Lifting of Leg at Hip joint**

In the current study the statistical analysis of Lifting of arms at shoulder & Lifting of Leg at Hip joint before and after treatment in both the group, revealed no apparent changes. Mean score of above said parameters was remained unchanged before and after the treatment. i.e., statistically non-significant and a modest improvement was noted during follow-up, group A



showed better results in lifting of arms and group B showed better results in lifting of leg although it is statistically non-significant.

#### **Effect of treatment on Sitting from lying down posture & standing from sitting posture**

In the current study the statistical analysis of Sitting from lying down posture & standing from sitting posture before and after treatment in both the group, revealed no apparent changes. Mean score of above said parameters was remained unchanged before and after the treatment. i.e., statistically non-significant and during follow-up, just a little improvement was noticed in both the groups but group B showed better results compared to group A, but it is statistically non-significant.

#### **Effect of treatment on Drooping of wrist & foot**

In the current study the statistical analysis of Drooping of wrist & foot before and after treatment in both the group, revealed no apparent changes. Mean score of above said parameters was remained unchanged before and after the treatment. i.e., statistically non-significant and after follow up later minimal improvement was seen but Group B showed better results in drooping of wrist and Group A in drooping of foot but it is statistically non-significant.

#### **Effect of treatment on Hand grip power, Foot pressure, walking time & Paper holding in finger**

In the current study the statistical analysis of Hand grip power, Foot pressure, walking time & Paper holding in finger before and after treatment in both the group, revealed no apparent changes. Mean score of above said parameters was remained unchanged before and after the treatment. i.e., statistically non-significant. and later p value is increased after follow up but it is statistically non-significant.

#### **Effect of treatment on loss of speech**

In the current study the statistical analysis of Loss of speech, before and after treatment in both the group, revealed no apparent changes. Mean score of above said parameters was remained unchanged before and after the treatment. i.e., statistically non-significant and in further follow-up group A showed better results than group B which is statistically non-significant.

**Effect of treatment on muscle tone in hand**

In the current study the statistical analysis of muscle tone hand before and after treatment in both the group, revealed no apparent changes. Mean score of above said parameters was remained unchanged before and after the treatment. i.e., statistically non-significant and even during the follow up no improvement was and it is statistically non-significant.

**Effect of treatment on muscle tone in leg**

In the current study the statistical analysis of muscle tone leg before and after treatment in both the group, revealed no apparent changes. Mean score of above said parameters was remained unchanged before and after the treatment. i.e., statistically non-significant and later minimal increase in the group B is seen but it is statistically non-significant.

Though Santarapana Nidana predisposes the Marga Avarana and which in turn causes Shiromarma Abhighata. The resulting illness of Pakshaghata which is considered as But immediate treatment of Pakshaghata should be concentrated mainly in tackling with morbid dosha. Bahya Snehana, Abhyantara Snehana, Virechana ,Basthi ,Shamana ,Brahmana and Rasayana forms the complete treatment of Pakshaghata.

**CONCLUSION**

Both treatment approaches yielded positive results in managing Pakshaghata, with Sneha Purvak Virechana showing a marginally higher efficacy in motor recovery. However, further large-scale studies with extended follow-up periods are necessary to substantiate these findings.

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