ABSTRACT
Body is assembled by Vata Pitta and Kapha Dosha each assigned to do its Kshaya, Poshana and Dharana Karma. Vata dominates both because of its Yogavahi Guna. Pakshaghata is one of the grievous Vata Vyadhi in Ayurveda. Sansarga of other Dosha and Dhatu leads to involvement of Shodhana and Shaman Chikitsa. Snehana therapy, Bahya and Abhyantar are well known for its treatment in Vata Vyadhi. Inclination towards modernization and deviation from basic healthy life make the body vulnerable for disease especially Vata Vyadhi. We know Vata Vyadhi are fulminate in nature but early diagnosis with the help of investigation tools like CT scan, MRI etc; we can prevent from further damage caused by previous pathology. Sansarga of other Dosha and Dhatu leads to involvement of Shodhana and Shaman Chikitsa. In terms of treatment Virechana had been mentioned as Shodhana Chikitsa in our Samhita.

Here an attempt was made to apply Virechana treatment with two different Poorva karma and to evaluate the efficacy with an applied aspect. The study had been conducted on 30 patients of Pakshaghata (Hemiplegia) who were divided in two groups and were given below treatments nearly for 1 month. Group A: Virechana followed by Shashtik-Shali Pindasweda. Group B: Virechana followed by Abhyanga. It was observed that both groups are effective in Ruja, Gauravta and Cheshtanirviti in the management of Pakshaghata (Hemiplegia) but Group A is more effective in comparison to Group B.

KEYWORDS: Virechana, Pakshaghata, Hemiplegia, Vata Vyadhi, Shashtik-Shali Pindasweda.
these medicaments. Yet there is a necessity for pursuing further research to find out some safe, effective and cheap remedy.

Need of Study

The clinical condition similar to Pakshaghata in modern medical science is described by the term Hemiplegia. The Commonest cause of Hemiplegia is Cerebral Vascular Accident (CVD) or Stroke. This is the 3rd most common cause of severe physical disability. Annual incidence of Stroke is 180-300/1,00,000 which are going to rise due to less healthy lifestyles.

Taking all the above points into consideration, its poor prognosis and nature of inertia, the disease was selected, to find a measure that could help in restoring quality in life of paralyzed patients.

Although a number of projects have been carried out using the principle of Charaka at various research institutes, we have evolved a different pattern of treatment which falls under the principles boundaries of Charaka in which Shodhana i.e. Virechana and Shamian i.e. Snigdhda Sweda are also involved. A sincere effort has been made to evaluate the combined effect.

AIMS AND OBJECTIVES

• To interpret the meaning of Chikitsa Sutra of Pakshaghata.
• To evaluate the effect of Shashtik-Shali Pinda Sweda.[5]
• To evaluate the effect of Virechana in Pakshaghata

Clinical Materials

The present study was carried out in two parts, i.e. literary and clinical. For the literary part different textbooks of both school of medicine were utilized. The Ayurvedic concepts were understood on the basis of the authentic classical texts, while for the modern aspect, various textbooks on neurology, stroke, reference books and various journals were referred. Various sites on the internet related to the subject were also surfed.

A) Patients: Patient fulfilling all the section (inclusion & exclusion) criteria visiting NIA OPD, IPD, Bombay-wala Hospital and Satellite Hospital.

B) Laboratory: Assistance will be taken from the central lab of NIA hospital.

C) Drug: Drug was purchased through pharmacy of NIA Jaipur.

MATERIALS AND METHODS

The patient will be diagnosed with the help of various subjective and objective parameters as per Ayurvedic as well as modern science.

Inclusion Criteria

• Age -30 -70yr
• Irrespective of sex, religion and socio-economic status.

Exclusion Criteria

• Unconscious patient.
• Hemiplegic due to trauma.
• Hemiplegic due to intracranial infection & space occupying lesion.
• Todd's paralysis
• Hysteria

Discontinuation Criteria

• Patients not willing to continue treatment.
• Patients develop life threatening complications during treatment.
• Any other acute illness.

Duration

Group A - 15 days (Shashtik –Shali Pinda Sweda + Virechana)
Group B - 15 days (Abhyanga (Maha-Mash Taila) + Virechana)

Management of Patients

After diagnosis, the patients were randomly divided into following.

Two Groups

Group A: The patients of this group were treated by Virechana Karma undergone with Shodhana Snehanapana[6] and Swedana. After completion of Samsarjan Krama,[7] they were undergone for 15 days Shashtik –Shali Pinda Sweda.

Group B: The patients of this group were also treated Virechana Karma same as Group A After those 15 days Abhyanga was done with Maha – Masa Taila.

As both the group have Virechana common along with Shashtik –Shali Pinda Sweda and Abhyanga with Maha – Masa Taila.

Poorva-karma Includes

Deepan-Pachana: It was done with Ajmodadi Churna, a patient was brought in the normal condition of appetite and bowel clearance.

Snehana-Pana: It was done with Moorchit Tila Taila up to the appearance (duration of minimum 3 to maximum 7 days) of Samyaka Snigdhak lakshan.[8] During this time period patients were instructed to follow special code and conduct, which include Ahara and Vihar both.

Ahara: Drava, Usna, Ana-Abhisyandi, Na-Ati-Sankirna and Snigdh Bhojana,[9] warm water.

Vihar: Bramhachari Jeevana[10], avoid day sleep, not arresting natural urges, avoiding heavy exercise, loud speak, anger, depression, too much cold, hot and airy places.

Abhyanga-Swedana: After completion of Snehapana, patients had undergone with Abhyanga with Maha-
Mash Taila and Swedana with Dashmool-Kwatha for 3 days.

**Pradhana-karma**

On 4th day they were given Virechana- Yoga, combination of (Trivrit, Haritki, Danti, Chitrak-mool, Pippali-mool, and Jaggery)\[11\] nil orally in the morning.

After Snehana and Swedana, purgation starts within 1-3 hrs. Patients were instructed to take only warm water up to the Samyaka Lakshana.

**Paschaka-karma**

According to the Vaigaki, and Antaki lakshana patients were followed by Samasargjana Krama. Pariharkala\[12\] is usually double the time required for total procedure.

**Investigations Performed**

Following investigations were advised to exclude the cases as per the exclusion criteria as mentioned earlier.

1. Complete Haemogram - TLC, DLC, Hbgm %, ESR
2. Liver Function Test
3. Blood Sugar
4. Lipid Profile
5. Urine R/M

**Criteria for Assessment**

**A) Subjective Improvement\[13\]**

i) Chestanivriti
ii) Ruja
iii) Vakstambha
iv) Achetanta
v) Hasta-Pada-Samkochha
vi) Shaitya
vii) Gaurav

**B) Clinical Improvement**

1. Increase in walking capacity
2. Sitting from lying position
3. Standing from sitting position
4. Tone of muscle

**Grading Chestanivritti**

Mild – able to lift limbs against gravity
Moderate– only flickering of fingers present
Severe – not able to move limbs at all

**1. Ruja**

Normal – no pain
Mild – pain only when movement is done
Severe – pain on touch

**2. Vaka Satambha**

Mild – slight slurred speech
Moderate – can speak but not so clear
Severe – not able to speak at all

**3. Achetanta**

Touch – normal
Superficial touch diminished - Mild
No sensation - Severe

**4. Hasta – PadaSankoch**

Normal –no contracture
Mild – limbs are in flexed position, but able to extend
Severe – not able to extend limbs

**5. Shaitya**

Normal – normal temprature
Mild – slight feeling cold
Sev er – temperature of limbs are low, sever feeling cold

**6. Gaurav**

Normal – no heaviness
Mild - Heaviness
Moderate - Heaviness

**7. Walk**

Not able to walk -3
Walk with moderate support – 2
Walk with mild support – 1

**8. Sitting from lying position**

Not able to sit from lying position -3
Able to sit with moderate support – 2
Able to slight support – 1

**9. Tone**

Total paralysis – 0
Flicker of contraction – 1
Movement against gravity - 2

**OBSERVATIONS AND RESULTS**

For the clinical study, 30 clinically diagnosed and confirmed cases of Pakshaghata (Hemiplegia) were registered on the basis of a specially designed perfrorna prepared for the purpose. 3 cases were dropped out from the study in the initial phase of trial and the study was carried out by following complete protocol in 27 cases.

Pakshaghata involves Dhatu like Majja, association of one of the Marma among Trimarma\[14\] (Sira) which makes the disease Krichra-Sadhya or Asadhy. Pakshaghata makes the patient very much anxious and it is common in patient of Vata-Pitta Prakriti and vice-versa. Long course of treatment make the condition worse. This might be the probable cause for the patients for Lama.

The results were assessed in regard to the clinical signs and symptoms, functional capacity of the patient, laboratory investigations, degree of disease activity and the overall improvement. The overall effect of therapy was assessed in terms of, major improvement, minor improvement and unimproved or progression. Observation and results are described below.
### Table 1: Age wise distribution of patients

| Sex          | Number of patient | Total | Percentage |
|--------------|-------------------|-------|------------|
|              | Group A | Group B |       |            |
| 30 - 40yrs  | 0       | 1       | 1     | 3.33%      |
| 40 - 50yrs  | 5       | 5       | 10    | 33.33%     |
| 50 - 60yrs  | 3       | 5       | 8     | 26.66%     |
| 60 - 70yrs  | 7       | 4       | 11    | 36.66%     |

### Table 2: Sex wise distribution of patients

| Sex | Number of patient | Total | Percentage |
|-----|-------------------|-------|------------|
|     | Group A| Group B |       |            |
| Male| 12      | 11     | 23    | 76.66%     |
| Female| 3     | 4       | 7     | 23.33%     |

### Table 3: Religion wise distribution of patients

| Religion | Number of patients | Total | Percentage |
|----------|--------------------|-------|------------|
|          | Group A | Group B |       |            |
| Hindu    | 12      | 8       | 20    | 66.66%     |
| Muslim   | 3       | 7       | 10    | 33.33%     |
| Other    | 0       | 0       | 0     | 0%         |

### Table 4: Marital Status wise Distribution of Patients

| Marital status | Number of patient | Total | Percentage |
|----------------|-------------------|-------|------------|
|                | Group A | Group B |       |            |
| Married        | 15      | 14      | 29    | 96.67%     |
| Unmarried      | 0       | 1       | 1     | 3.33%      |

### Table 5: Occupation wise distribution of patients

| Occupation | Number of patient | Total | Percentage |
|------------|-------------------|-------|------------|
|            | Group A | Group B |       |            |
| House wife | 3       | 4       | 7     | 23.3%      |
| Govt. Service | 3   | 1       | 4     | 13.33%     |
| Labour     | 3       | 3       | 6     | 20%        |
| Business   | 3       | 5       | 8     | 26.67%     |
| Retired    | 3       | 2       | 5     | 16.67%     |

### Table 6: Education wise Distribution of patients

| Education     | Number of patients | Total | Percentage |
|---------------|--------------------|-------|------------|
|              | Group A | Group B |       |            |
| Illiterate    | 2       | 4       | 6     | 20%        |
| Primary       | 6       | 4       | 10    | 33.33%     |
| Secondary     | 2       | 7       | 9     | 30%        |
| Graduate      | 5       | 0       | 5     | 16.67%     |

### Table 7: Socio- Economic Status wise Distribution of Patients

| Socio-economic status | Number of patient | Total | Percentage |
|-----------------------|-------------------|-------|------------|
|                       | Group A | Group B |       |            |
| Poor                  | 5       | 4       | 9     | 30%        |
| Middle                | 7       | 8       | 15    | 50%        |
| Upper middle          | 3       | 3       | 6     | 20%        |
| Higher                | 0       | 0       | 0     | 0%         |

### Table 8: Family wise Distribution of Patients

| Family History | Number of patient | Total | Percentage |
|----------------|-------------------|-------|------------|
|                | Group A | Group B |       |            |
| Present        | 0       | 1       | 1     | 3.33%      |
| Absent         | 15      | 14      | 29    | 96.67%     |
Table 9: Addiction wise Distribution of Patients

| Addiction | Number of patients |
|-----------|--------------------|
|           | Group A | Group B | Total | Percentage |
| Cigarette | 2       | 2       | 4     | 13.33 %    |
| Tea       | 12      | 8       | 20    | 66.67 %    |
| Tobacco   | 1       | 1       | 2     | 6.67 %     |
| Alcohol   | 0       | 2       | 2     | 6.67 %     |
| No habit  | 0       | 2       | 2     | 6.67 %     |

Table 10: Dietary Habit wise Distribution of Patients

| Dietary Habit | Number of patients |
|---------------|--------------------|
|               | Group A | Group B | Total | Percentage |
| Veg           | 10      | 6       | 16    | 53.33 %    |
| Mix           | 5       | 9       | 14    | 46.67 %    |

Table 11: Habitat wise Distribution of Patients

| Habitat | Number of patients |
|---------|--------------------|
|         | Group A | Group B | Total | Percentage |
| Urban   | 12      | 13      | 25    | 83.33 %    |
| Rural   | 3       | 2       | 5     | 16.67 %    |

Table 12: Shārīra-Prakṛiti wise Distribution of Patients

| Prakṛiti | No. of patients |
|----------|----------------|
|          | Group A | Group B | Total | Percentage |
| VP       | 5       | 4       | 9     | 30 %       |
| VK       | 6       | 9       | 15    | 50 %       |
| PK       | 4       | 2       | 6     | 20 %       |

Table 13: Manasa Prakṛiti wise Distribution of Patients

| Manasa Prakṛiti | No. of patients |
|-----------------|----------------|
|                 | Group A | Group B | Total | Percentage |
| Rajsik          | 9       | 10      | 19    | 63.33 %    |
| Tamsik          | 3       | 3       | 6     | 20 %       |
| Satvik          | 3       | 2       | 5     | 16.67 %    |

Table 14: Sāra wise Distribution of Patients

| Sāra | No. of patients |
|------|----------------|
|      | Group A | Group B | Total | Percentage |
| Pravar | 5       | 3       | 8     | 26.67 %    |
| Madhyama | 7       | 6       | 13    | 43.33 %    |
| Avara   | 2       | 6       | 8     | 26.67 %    |

Table 15: Sātva wise Distribution of Patients

| Sātva | No. of patients |
|-------|----------------|
|       | Group A | Group B | Total | Percentage |
| Pravara | 3       | 2       | 5     | 16.67 %    |
| Madhyama | 8       | 11      | 19    | 63.33 %    |
| Heena   | 4       | 2       | 6     | 20 %       |

Table 16: Sātmya wise Distribution of Patients

| Sātmya | No. of patients |
|--------|----------------|
|        | Group A | Group B | Total | Percentage |
| Pravara | 3       | 3       | 6     | 20 %       |
| Madhyama | 10      | 9       | 19    | 63.33 %    |
| Avara   | 2       | 3       | 5     | 16.67 %    |

Table 17: Ahara Shakti wise Distribution of Patients

| Ahara Shakti | No. of patients |
|--------------|----------------|
|              | Group A | Group B | Total | Percentage |
| Pravara      | 4       | 5       | 9     | 30 %       |
| Madhyama     | 9       | 7       | 16    | 53.33 %    |
| Avara        | 2       | 3       | 5     | 16.67 %    |
Table 18: Agni wise Distribution of Patients

| Agni  | No. of patients | Total | Percentage |
|-------|----------------|-------|------------|
| Sama  | 2              | 1     | 3          | 10%        |
| Manda | 1              | 2     | 3          | 10%        |
| Vishama | 4          | 5     | 9          | 30%        |
| Teekshna | 8         | 7     | 15         | 50%        |

Table 19: Koshtha wise Distribution of Patients

| Koshtha | No. of patients | Total | Percentage |
|---------|----------------|-------|------------|
| Mridu   | 2              | 3     | 5          | 16.67%     |
| Madhyam | 7              | 8     | 15         | 50%        |
| Kusra   | 6              | 4     | 10         | 33.33%     |

Table 20: Distribution of patients According to Total Amount of Abhyantar Snehapana

| Total amount of Abhyantar Snehapana | No. of Patients | Total | Percentage |
|-----------------------------------|----------------|-------|------------|
| 200-400ml                         | 2              | 2     | 4          | 14.81%     |
| 400-600ml                         | 6              | 7     | 13         | 48.15%     |
| 600-800ml                         | 5              | 5     | 10         | 37.04%     |

Table 21: Distribution of Patients According to Days Required for Snehana

| Days required for Snehana | No. of Patients | Total | Percentage |
|---------------------------|----------------|-------|------------|
| 5 days                    | 2              | 3     | 5          | 18.52%     |
| 6 days                    | 4              | 5     | 9          | 33.33%     |
| 7 days                    | 7              | 6     | 13         | 48.15%     |

Table 22: Distribution of patients According to Vaigiki Shuddhi

| Type of Shuddhi | No. of Patients | Total | Percentage |
|----------------|----------------|-------|------------|
| Uttama (21-30) | 0              | 0     | 0          | 0%         |
| Madhyam (11-20) | 2           | 3     | 5          | 18.52%     |
| Hina (< 10)    | 11             | 11    | 22         | 81.48%     |

Table 23: Distribution of patients According to Antiki Shuddhi

| Antiki Shuddhi | No. of Patients | Total | Percentage |
|----------------|----------------|-------|------------|
| Kaphanta       | 4              | 4     | 8          | 29.62%     |
| Pittanta       | 9              | 10    | 19         | 70.37%     |

Table 24: Distribution of patients in both groups

| Complete | Group A | Group B | Total | Percentage |
|----------|---------|---------|-------|------------|
|          | 13      | 14      | 27    | 90%        |
| LAMA     | 2       | 1       | 3     | 10%        |

Table 25: Nidra (Sleep-pattern) wise distribution of patients

| Nidra    | No. of patients | Total | Percentage |
|----------|----------------|-------|------------|
| Atinidra | 1              | 1     | 2          | 6.67%      |
| Samyaka-nidra | 5   | 4     | 9          | 30%        |
| Alpanidra | 6          | 8     | 14         | 46.67%     |
| Anidra   | 3              | 2     | 5          | 16.67%     |

Table 26: Showing the incidence of onset of the disease

| Onset  | No. of patients | Total | Percentage |
|--------|----------------|-------|------------|
| Sudden | 2              | 1     | 3          | 10%        |
| Gradual| 13             | 14    | 27         | 90%        |
Table 27: Mental Status Wise Distribution of Patients

| Mental Status | Group A | Group B | Total | Percentage |
|---------------|---------|---------|-------|------------|
| Sound         | 3       | 3       | 6     | 30%        |
| Irritative    | 5       | 5       | 10    | 33.33%     |
| Angry         | 5       | 6       | 11    | 36.67%     |
| Anxious       | 2       | 1       | 3     | 10%        |

Table 28: Affected Part Wise Distribution of Patients

| Affected side | Group A | Group B | Total | Percentage |
|---------------|---------|---------|-------|------------|
| Rt side       | 5       | 9       | 14    | 46.67%     |
| Lt side       | 10      | 6       | 16    | 53.33%     |

Table 29: Chronicity Wise Distribution of Patients

| Chronicity     | Group A | Group B | Total | Percentage |
|----------------|---------|---------|-------|------------|
| 1-6 month      | 5       | 4       | 9     | 30%        |
| 7-12 month     | 6       | 3       | 9     | 30%        |
| 13-18 month    | 2       | 3       | 5     | 16.67%     |
| 19 month-2yrs  | 1       | 2       | 3     | 10%        |
| 2yrs – 2.5 yrs | 0       | 0       | 0     | 0%         |
| 2.5 – 3 yrs    | 1       | 1       | 2     | 6.67%      |

The observations made on the 30 patients of Pakshaghata of this series showed that maximum number of patients 36.66% were in the age Group of 60-70 years, male and female were 76.66% and 23.37% respectively, majority of patients, were Hindu i.e. (70%), 96.67% were married and only 1 patient (3.33%) was unmarried, maximum 26.67% belongs to business class.

50% were from middle socio-economic status, most of them 52% was educated up to primary level, maximum 83.33% were living in urban area, 46.67% patient were having Alpa-nidra at night, about 50% had Madhya Kostha. Nearly 96.76% had negative family history.

The study of Dashavidha-pariksha showed that all the patients were of Dvandvaja Prakriti with maximum i.e. 50% were of Vata-Kaphaja Prakriti, 63.33% were of Rajasik Manasika prakriti, 43.33% were of Madhyama-sara, 63% were of Madhyama Satmya, 60% were of Madhyama Satva, about 50% had Madhyama Kostha and 50% were having Tikshnagni followed by 30% were having Vishamagni.

Elaborated dietetic history disclosed that maximum i.e. 58% patients were vegetarian.

Observation and Result

Table 30: Showing the pattern of clinical (Subjective) improvement in symptoms of Chestanivriti in the patients of Pakshaghata in both groups

| Group | N | Mean  | Relief % |
|-------|---|-------|----------|
|       |   | BT    | AT       |          |
| A     | 13| 2.462 | 1.231    | 50%      |
| B     | 14| 2.357 | 1.571    | 33.33%   |

Table 31: Showing the pattern of clinical (Subjective) improvement in symptom of Ruja in the patients of Pakshaghata in both groups

| Group | N | Mean  | Relief % |
|-------|---|-------|----------|
|       |   | BT    | AT       |          |
| A     | 13| 2.462 | 0.9231   | 62.46%   |
| B     | 14| 2.286 | 1.286    | 43.74%   |

Table 32: Showing the pattern of clinical (Subjective) improvement in symptom of Vakstambha in the patients of Pakshaghata in both groups

| Group | N | Mean  | Relief % |
|-------|---|-------|----------|
|       |   | BT    | AT       |          |
| A     | 13| 1.077 | 1.154    | 7.1%     |
| B     | 14| 0.7857| 0.5714   | 27%      |
Table 33: Showing the pattern of clinical (Subjective) improvement in symptom Achetanta-in the patients of Pakshaghata in both the groups

| Group | N  | Mean     | Relief % |
|-------|----|----------|----------|
|       |    | BT       | AT       |
| A     | 13 | 0.3846   | 0.2308   | 39.98    |
| B     | 14 | 0.2857   | 0.1429   | 50       |

Table 34: Showing the pattern of clinical (Subjective) improvement in symptom of Hasta-Pada-Samkocha in the patients of Pakshaghata in both the groups

| Group | N  | Mean     | Relief % |
|-------|----|----------|----------|
|       |    | BT       | AT       |
| A     | 13 | 2.154    | 1.308    | 39.3     |
| B     | 14 | 2.00     | 1.429    | 28.57    |

Table 35: Showing the pattern of clinical (Subjective) improvement in symptom of Shaitya in the patients of Pakshaghata in both the groups

| Group | N  | Mean     | Relief % |
|-------|----|----------|----------|
|       |    | BT       | AT       |
| A     | 13 | 0.6923   | 0.5385   | 22.32    |
| B     | 14 | 0.588    | 0.3571   | 22.22    |

Table 36: Showing the pattern of clinical (Subjective) improvement in symptom of Gaurava in the patients of Pakshaghata in both the groups

| Group | N  | Mean     | Relief % |
|-------|----|----------|----------|
|       |    | BT       | AT       |
| A     | 13 | 2.00     | 0.5385   | 73.1     |
| B     | 14 | 1.857    | 1.214    | 34.62    |

Table 37: Showing the pattern of clinical (Functional) improvement in symptom of Sitting from Lying in the patients of Pakshaghata in both the groups

| Group | N  | Mean     | Relief % |
|-------|----|----------|----------|
|       |    | BT       | AT       |
| A     | 13 | 3.154    | 2.538    | 19.51    |
| B     | 14 | 3.357    | 2.714    | 19.15    |

Table 38: Showing the pattern of clinical (Functional) improvement in symptom of Standing from sitting in the patients of Pakshaghata in both the groups

| Group | N  | Mean     | Relief % |
|-------|----|----------|----------|
|       |    | BT       | AT       |
| A     | 13 | 2.846    | 2.154    | 24.30    |
| B     | 14 | 3.00     | 2.214    | 26.19    |

Table 39: Showing the pattern of clinical (Functional) improvement in symptom of Muscle Tone in the patients of Pakshaghata in both the groups

| Group | N  | Mean     | Relief % |
|-------|----|----------|----------|
|       |    | BT       | AT       |
| A     | 13 | 2.923    | 3.385    | 15.78    |
| B     | 14 | 2.714    | 3.429    | 26.3     |

Table 40: Showing the pattern of clinical (Functional) improvement in symptom of increasing walking capacity in the patients of Pakshaghata in both the groups

| Group | N  | Mean     | Relief % |
|-------|----|----------|----------|
|       |    | BT       | AT       |
| A     | 13 | 2.231    | 1.538    | 31       |
| B     | 14 | 2.071    | 1.571    | 24.14    |

Table 41: Showing the pattern of overall clinical (Functional) improvement in symptom of Assessment scale in the patients of Pakshaghata in both the groups

| Group | N  | Mean     | Relief % |
|-------|----|----------|----------|
|       |    | BT       | AT       |
| A     | 13 | 2.035    | 1.413    | 30.58    |
| B     | 14 | 1.936    | 1.500    | 22.54    |
Data shows that a mild improvement is found in symptom of Group A (30.58%), and in Group B it is (22.54%), so there was no improvement. Both are significant. Maximum (30%) patients were having chronicity between 1-6 months.

In Group A, in activities of daily living of the patients, improvement in modified ranking scale was 19.51%, improvement in sitting from lying down. Walking was improved by 31% and improvement in standing from sitting position was 24%.

On activities of daily living of the patients of Group B, improvement in modified ranking scale was 19.15%, improvement in sitting from lying down. Walking was improved by 24.14% and improvement in standing from sitting position was 26.19%. Highly significant improvement was observed in walking.

Both the groups show significant improvement in muscle tone, standing from sitting position, sitting from lying position. Highly significant improvement was seen in Ruja (62.46%) and Gaurav (73.1%).

### Table 42: Clinical improvement in the symptoms of Pakshaghata (Hemiplegia) in both the Groups

| Symptoms          | Gr.  | Mean | Relief | S.D. (±) | S.E. (±) | t     | p    | Res.   |
|-------------------|------|------|--------|----------|----------|-------|------|--------|
|                   |      | BT   | AT     | Diff.    |          |       |      |        |
| Chestanivriti     | A    | 2.462| 1.231  | 1.231    | 50       | 0.438 | 0.1216 | 10.12  | <0.001 | HS     |
|                   | B    | 2.357| 1.571  | 0.785    | 33.33    | 0.5789 | 0.1547 | 5.078  | <0.001 | HS     |
|                   |      |      |        |          |          |       |       |        |
|                    | A    | 2.462| 0.9231 | 1.538    | 62.46    | 0.5189 | 0.1439 | 10.69  | <0.001 | HS     |
|                    | B    | 2.286| 1.286  | 1.00     | 43.74    | 0.3922 | 0.1048 | 9.539  | <0.001 | HS     |
|                    |      |      |        |          |          |       |       |        |
|                    | A    | 1.077| 1.154  | 0.0769   | 7.1      | 0.2774 | 0.0769 | 1.00   | >0.05  | NS     |
|                    | B    | 0.7857| 0.5714| 0.2143   | 27       | 0.4258 | 0.1138 | 1.883  | >0.05  | NS     |
|                    |      |      |        |          |          |       |       |        |
|                    | A    | 0.3846| 0.2308| 0.1538   | 39.9     | 0.3755 | 0.1042 | 1.477  | >0.05  | NS     |
|                    | B    | 0.2857| 0.1429| 0.1429   | 50       | 0.3631 | 0.097  | 1.472  | >0.05  | NS     |
|                    |      |      |        |          |          |       |       |        |
|                    | A    | 2.154| 1.308  | 0.8462   | 28.57    | 0.4629 | 0.1804 | 2.462  | <0.001 | HS     |
|                    | B    | 2.00 | 1.429  | 0.5714   | 28.57    | 0.5136 | 0.1373 | 4.163  | <0.01  | S      |
|                    |      |      |        |          |          |       |       |        |
|                    | A    | 0.6923| 0.5385| 0.1538   | 22.32    | 0.8006 | 0.2221 | 0.693  | >0.05  | NS     |
|                    | B    | 0.588| 0.3571 | 0.1429   | 22.22    | 0.5345 | 0.1429 | 1.00   | >0.05  | NS     |
|                    |      |      |        |          |          |       |       |        |
|                    | A    | 2.00 | 0.5385| 1.462    | 73.1     | 0.1518 | 0.1439 | 10.16  | <0.001 | HS     |
|                    | B    | 1.857| 1.214  | 0.6429   | 34.62    | 0.4972 | 0.1329 | 4.837  | <0.001 | HS     |

### Table 43: Showing the pattern of overall clinical (functional) improvement in symptom of assessment scale in the patients of Pakshaghata in both groups

| Group | N  | Mean | Relief | S.D. (±) | S.E. (±) | t     | p    | Results |
|-------|----|------|--------|----------|----------|-------|------|---------|
|       |    | BT   | AT     | Diff.    |          |       |      |         |
| A     | 13 | 2.035| 1.413  | 0.6225   | 30.58    | 0.6386 | 0.1926 | 3.233   | <0.01  | S      |
| B     | 14 | 1.936| 1.500  | 0.4365   | 22.54    | 0.4662 | 0.1406 | 3.106   | <0.01  | S      |

Group A shows better improvement i.e. (30.58%) as compared to Group B (22.54%). This may be due to Shashtik-Shali Pinda Sweda which provides two benefits, firstly better absorption of Maha-Mash Taila and moist heat effect.
In inter group comparison Group A was highly significant in Ruja and Gaurava as compared to Group B in the symptom Chestaniwriti it was only significant result.

Table 45: Clinical (Functional) improvement in the symptoms of Pakshaghat (Hemiplegia) in both the Groups

| Sr. No. | Symptoms | Comparison in Groups | t     | p     | Result |
|---------|----------|----------------------|-------|-------|--------|
| 1       | Walk     | Group A vs. Group B  | 0.8681| >0.05 | NS     |
| 2       | Sitting from lying position | Group A vs. Group B  | 0.1112| >0.05 | NS     |
| 3       | Standing from sitting position | Group A vs. Group B  | 0.5355| >0.05 | NS     |
| 4       | Tone     | Group A vs. Group B  | 1.33  | >0.05 | NS     |

From Table No. 43 it was observed that after Inter Group Comparisons in all the symptom i.e. Walk, Sitting from lying position, Standing from sitting position and Tone, were found to be statistically Not Significant (p>0.05).

DISCUSSION

Probable Modes of Action of Drugs

1. Deepan and Pachana (Carminative and Digestion) with Ajmodadi churna.
   - Katu Rasa, Laghu, Ruksha Guna and Ushna Veerya. Pachana properties of these drugs help in digestion of Ama Dosh, leading to Srotosodhana.
2. Abhyantara Snehapana (Internal Oleation) with Moorchit Tila Taila.
   - Taila is best known for its Vata and Kapha Shamak property, which is good for Virechana. Moorchana removes the Ama Dosh and enhance its Varna and Gandha, which is a necessary part in palatability.
3. Swedana (Sarwanga Swedana) (Fomentation/Sudation Therapy)
   - Swedana removes Stambha (stiffness), Gaurava (Heaviness), Sheeta (coldness) and produces sweating indicating different effects achieved by Swedana.
   - Swedana causes sweating, dilates the Srotas (micro channels) and helps to cleanse the Srotas as well as brings the adhering Ama Dosha to Kostha for Shodhana.
4. Virechana Karma (Medicated Purgation) with one of the Charak Yoga mentioned in Kalpa Sthana. Yoga contains Haritaki, Trivrit, Danti-moola, Pippali-moola, Chitrak-Moola and Jaggery. The former three are known for their good purgative action, without any severe complication. Pippali-moola and Chitrak-Moola produces local irritation with their good Deepana-Pachana property. Jaggery provides hypertonic solution. It also increases the palatability of Yoga.
5. Sansarjan Karma (Post Procedure diet and regimen)
   - Virechana Karma temporarily diminishes the Kosthagni (Digestive fire). Peyadi Samsarjan Krama was given as post Shodhana regimen to regulate the ignited Agni.

Probable Mode of Action of Virechana

In Pakshaghatra, Vata is not only a culprit, Rakta and Pitta are also involved. Therefore Acharya Charak specially mentioned the role of Virechana.

Virechana cleanses the different types of toxic materials resulting due to the metabolic activities, the things to be excreted through the liver and the intestinal mucosa, along with the unabsorbed residues of gastrointestinal tract. Further Virechana drugs have cholerrhatic action thus increasing the production of bile. Some of the lipophilic toxins brought back to the liver from periphery are transformed into water soluble forms and are excreted through urine. Some toxins as described earlier are excreted from the body through bile during Pittantaka Vamana and during Virechana.

Virechana Karma regulates Vata-Dosha by movement regulation (Vatanulomana), Pitta Dosha by chemo-enzymatic secretions and Kapha Dosha by regulating the intestinal mucosal secretions. By increased movements of intestines, due to smooth muscle contractions the glandular secretions related
to gastrointestinal tract are pumped into the tract where existing Sroto Varodhaka Ama and accumulated Malas are propelled into the intestinal lumen. Due to these hyperbaric solutions in the gut through osmosis, the accumulated toxins in the cells (Rasa, Lasika and Udaka etc.) move into the gut through the intestinal mucosa. Thus all the secretions drained into the ileum are safely brought out of the body by peristalsis, which is the ultimate aim of Shodhana therapy. The sodium which might have been in excess previously is lost through Virechana, which may regulate sodium and potassium exchange. This indirectly regulates Agni and gives no place for formation of Ama Dosh (endotoxins).

**Probable Mode of Action of Abhyanga**

In Abhyanga results are obtained by two thing first pressure, temperature, and friction and vibration second drug used. Improvement is due to net result of both.

It is able to penetrate body at various levels it has long lasting effects on Rasa, Rakta Mamsa, Meda, Asthi and Majja Dhatu. Blood amino acids like tryptophan increases after massage and an increase in plasma tryptophan subsequently cause a parallel increase in neurotransmitters and serotonin, which is made from tryptophan. All the functions of serotonin have yet to be elucidated but its depletion causes mental effects such as depression, florid hallucinations, paranoia, severe headache, anxiety and irritability. So it helps in reducing the blood pressure which is the main cause of hypertension.

Spasticity i.e. Sankocha is a feature of Vata-Dosha, best and simple method of treating Vata vitiation is by Snehana and Swedana. Masha (Urdha), Mamsa (meat), milk, and Jiviniya Gana drugs make complete combination of the nutrition for weak muscles. Milk and Taila make it permeable to skin and thus better absorption. Tila Taila enters directly without metabolism keeping its nutritive value via Sukshma and Vyvayi Guna, absorption. Pratiloma type of massage renders Vyana and Udanato normal functional state and thus, all Srotas fills with the applied Sneha, which nourishes the body after digestion by Bhrajakaj Pitta.

**Mode of Action of Shashtik-Shali Pinda Sweda**

Khara, Ruksha and Vishada fractions of Vata, and Ushna and Tikshna fractions of Pitta are responsible to cause required Sira and Shalay Shosha to form a clot in cerebral arteries and thus the stroke. For stroke, medicine should be such a one, which is steeped in exact opposite of Khara, Ruksha, Vishada, Ushna and Tikshna i.e. Shlakshna, Snigdha, Pichhila and Shita, Mridu/Manda. Shashtik –Shali is one of them.

Moist heat therapy[15] has been believed to be more effective at warming tissues than dry heat, because water/ milk transfers heat more quickly than air. Moist heat is more effective than dry heat because it penetrates more deeply, which increases the effect on muscles, joints, and soft tissue. Use it for 15 to 20 minutes or longer. Moist heat caused a significantly higher skin blood flow (about 500% greater) than dry heat. Most of the greater increase in skin blood flow with moist heat was due to the greater rate of rise of skin temperature with moist versus dry heat while some of the increase in blood flow was due to the moisture itself. Therefore, although an MHP must be applied for a longer period to increase muscle temperature, muscle temperature remains elevated for a longer period, giving the subject an extended time period for use of other modalities to increase flexibility.

The procedure not only provides heat but also medicine. As we know the process includes two things Maha-Mash Taila and Ksheer, Shashtika Shali. Swedana makes the skin more permeable by opening the skin appendage through sweating, dilating blood vessel, all these things helps in absorption of medicine. Superficial layer of skin is generally impermeable to most of the things. Phospholipids present in milk, which is an important components of cell membranes. Its amphipathic nature helps in absorption of medicine.

**CONCLUSION**

- In most cases Pakshaghata is the result of CVA.
- Pakshaghata due to cerebrovascular accident will come under Anya dosha Samsrista Pakshaghata.
- The males are more affected with the disease Pakshaghata due to CVA.
- Peak incidence of the disease is found in middle age.
- The Nidana for Pakshaghata due to CVA are Ushna Bhohana, Divaswapna, Ati-Chinta, Ayyaayaama, Snigdha Bhohana, Guru Bhohana, Tikshna Bhohana, Ati Lavana Sevana, Ratri jagarana, Adhyashana, smoking and Atimadya Pana.
- In most of the times Pakshaghata due to CVA present as sudden onset without prodromal symptoms.
- The predominant Dasha are all the five type of Vata with dominancy of Vyana and Prana Vayu along with Pitta and Kapha.
- The Dushya involved to manifest Pakshaghata due to CVA are Rasa, Rakta, Meda, Asthi and Majja.
- Shashtik-Shali-Pinda Sweda shows better improvement as compared to Sarvanga Abhyanga with Maha-Mash Taila in the signs & symptoms of
Pakshaghata as well as the activities of daily livings there by making better the quality of life of the patients.

- Virechana has more preventive role than curative. It prevent from further damage caused by previous pathology and future attack by controlling blood pressure.
- Significant improvement is seen in symptoms like Ruja, Gaurava and Chestanivriti.
- Considering the deep seated nature of the disease, its chronicity, involvement of a main Marma (Sira) longer duration of therapy may be required for even more admirable results.

REFERENCES

1. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy Varanasi, Sutra Sthana 20/10 pg no. 399.
2. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy Varanasi, Sutra Sthana 20/11 pg no. 399.
3. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy Varanasi, Sutra Sthana vimana Sthana pg no. 734.
4. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy, Varanasi, Sutra Sthana chikitsa Sthana 28/100 pg no. 795.
5. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy, Varanasi, Sutra Sthana 14/41 pg no 290.
6. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy, Varanasi, Sutra Sthana pg no. 266.
7. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy, Varanasi, Siddhi Sthana 1 pg. no. 961.
8. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy, Varanasi, Sutra Sthana 13 pg.no. 272.
9. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy, Varanasi, Sutra Sthana 13/60 pg no. 271.
10. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy, Varanasi, Sutra Sthana 13/62 pg no. 272.
11. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy, Varanasi, Kalpa Sthana 12/29 pg no. 942.
12. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy, Varanasi, Kalpa Sthana pg no. 962.
13. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy, Varanasi, Chikitsa Sthana 28/53 pg no. 787.
14. Satyanarayan Shastri, Charak Samhita Vidyotini Hindi Vyakhya, Published by Chaukhamba Bharati Academy, Varanasi, Chikitsa Sthana 26/3 pg no. 716.
15. J. Petrofsky et al. Does skin moisture influence the blood flow response to local heat? A re-evaluation of the Pennes model J Med Eng Technol. 2009; 33(7):532-7.

Cite this article as:
Nisha Singh, Sriyash Dubey. Evaluate the Efficacy of Shashtik-Shali Pinda Sweda & Abhyanga in Management of Pakshaghata Along With Virechana w.s.r. To hemiplegia. International Journal of Ayurveda and Pharma Research. 2020;8(7):1-12.

Source of support: Nil, Conflict of interest: None Declared

*Address for correspondence
Dr Nisha Singh
Assistant Professor,
Department of Panchakarma,
Ankerite Ayurvedic Medical College and Hospital, Lucknow (U.P.)
Email: singhnisha2009@gmail.com

Disclaimer: IJAPR is solely owned by Mahadev Publications - dedicated to publish quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IJAPR cannot accept any responsibility or liability for the articles content which are published. The views expressed in articles by our contributing authors are not necessarily those of IJAPR editor or editorial board members.