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Research Article

EVALUATE THE EFFICACY OF *SHASHTIK-SHALI PINDA SWEDA* AND *ABHYANGA* IN MANAGEMENT OF *PAKSHAGHATA* ALONG WITH *VIRECHANA* W.S.R. TO HEMIPLEGIA

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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 *Cheshtanivriti* 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*.

INTRODUCTION

Vata, Pitta and *Kapha* are the three basic pillars of Ayurveda and body*.* Any disturbance in their normal physiology produces diseases. *Vata* is dominant among these so its disorders. 80 *Vata Vyadhis*[1] are described in *Samhitas*. Amongst them *Pakshaghata*[2] is one, which cripples the body permanently. Ayurveda has broadly classified treatment into three parts, i.e., *Nidan Parivarjana*, *Shodhan* and *Shaman Chikitsa*[3]*.* Acharay Charak had specially designed a peculiar treatment for it. Considering this, Acharya Charak gave the precise *Chikitsa Sutra* for *Pakshaghata*.

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This *Sutra* provides an extra and special line of treatment for *Pakshaghata*. *Vata* is treated with *Sneha-Yukta Swedana* and *Rakta* by *Virechana*.

The description of *Pakshaghata* can be interpreted with Hemiplegia. Modern medical science attributes this condition as damage to brain or CNS structures caused by abnormalities of the blood supply. Hemiplegia is defined as paralysis of musculature of the face, arm and leg on one side of the body. It is the most frequent distribution of paralysis in human beings.

With advent of modern drugs, the pattern of disease has grossly changed, where the drugs only assuage the symptoms temporarily and the underlying pathology goes on progressively to worsen the condition. Though ample research is being carried out for alleviating the disease and new avenues are being explored for treating early ischemic injury by thrombolytic agents, Neuroprotectants, anti oxidants, etc, followed by physical rehabilitation, physiotherapy etc., yet the disease has not been dominated and remains incurable. To add it up, the adverse effects pose a distant threat to the wellbeing.

Therefore, the Ayurvedic therapeutics has attracted considerable glamour for providing safe and effective remedies. Numerous researches have been done time and again to reprove the worth of

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 *Shaman* i.e. *Snighdha 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 –Sahli 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 *Shodhnang 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 Pind 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 Snigdha lakshana.*[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 *Snigdha 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*.

Paschata-karma

According to the *Vaigaki,* and *Antaki lakshana* patients were followed by *Samasarjana 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-Samkocha*
vi) Shaitya
vii) Gaurava

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
Sever – 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 form 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 performa 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 *Asadhya*. *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 %
Buiseness	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		Total	Percentage
	Group A	Group B		
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 patient		Total	Percentage
	Group A	Group B		
Veg	10	6	16	53.33 %
Mix	5	9	14	46.67 %

Table 11: Habitat wise Distribution of Patients

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

Table 12: *Sharira-Prakriti* wise Distribution of Patients

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

Table 13: *Manasa Prakriti* wise Distribution of Patients

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

Table 14: *Sara* wise Distribution of Patients

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

Table 15: *Satva* wise Distribution of Patients

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

Table 16: *Satmya* wise Distribution of Patients

Satmya	No. of patients		Total	Percentage
	Group A	Group B		
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

AharaShakti	No. of patients		Total	Percentage
	Group A	Group B		
Pravara	4	5	9	30 %
Madhyam	9	7	16	53.33 %
Avara	2	3	5	16.67 %

Table 18: *Agni* wise Distribution of Patients

Agni	No. of patients		Total	Percentage
	GroupA	Group B		
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
	Group A	Group B		
Mridu	2	3	5	16.67 %
Madhyam	7	8	15	50 %
Krura	6	4	10	33.33 %

Table 20: Distribution of patients According to Total Amount of *Abhyantara Snehapana*

Total amount of *Abhyantara Snehapana*	No. of Patients		Total	Percentage
	Group A	Group B		
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
	Group A	Group B		
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
	Gr. A	Gr. B		
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
	Group A	Group B		
Kaphanta	4	4	8	29.62%
Pittanta	9	10	19	70.37 %

Table 24: Distribution of patients in both groups

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

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

Nidra	No. of patients		Total	Percentage
	Group A	Group B		
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
	Group A	Group B		
Sudden	2	1	3	10%
Gradual	13	14	27	90%

Table 27: Mental Status Wise Distribution of Patients

Mental Status	No. of patients		Total	Percentage
	Group A	Group B		
Sound	3	3	9	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	No. of patients		Total	Percentage
	Group A	Group B		
Rt side	5	9	14	46.67 %
Lt side	10	6	16	53.33 %

Table 29: Chronicity Wise Distribution of Patients

Chronicity	No. of patients		Total	Percentage
	Group A	Group B		
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 *Madhyama 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
Ruja	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
Vakstambha	A	1.077	1.154	0.0769	7.1	0.2774	0.0769	1.000	>0.05	NS
	B	0.7857	0.5714	0.2143	27	0.4258	0.1138	1.883	>0.05	NS
Achetanta	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
Hasta-Pada-Samkocha	A	2.154	1.308	0.8462	39.3	0.3755	0.1042	8.124	<0.001	HS
	B	2.00	1.429	0.5714	28.57	0.5136	0.1373	4.163	<0.01	S
Shaitya	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
Gaurava	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

Symptoms	Gr.	Mean			Relief %	S.D. (±)	S.E. (±)	t	p	Res
		BT	AT	Diff.						
Sitting from Lying	A	3.154	2.538	0.6154	19.51	0.6504	0.1804	3.411	<0.01	S
	B	3.357	2.714	0.6429	19.15	0.6333	0.1693	3.798	<0.01	S
Standing from Sitting	A	2.846	2.154	0.6923	24.30	0.4804	0.1332	5.196	<0.001	HS
	B	3.00	2.214	0.7857	26.19	0.4258	0.1138	6.904	<0.001	HS
Muscle Tone	A	2.923	3.385	0.4615	15.78	0.5189	0.1439	3.207	<0.01	S
	B	2.714	3.429	0.7143	26.3	0.4688	0.1253	5.701	<0.001	HS
Increasing walking capacity	A	2.231	1.538	0.6923	31	0.6304	0.1748	3.959	<0.01	S
	B	2.071	1.571	0.500	24.14	0.5189	0.1387	3.606	<0.01	S

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 compaired 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.

Table 44: Clinical (Subjective) improvement in the symptoms of *Pakshaghat* (Hemiplegia) in both Groups

S. No.	Symptoms	Comparison between group	t	p	Result
1	*Chestanivriti*	Group A vs. Group B	2.2413	<0.05	S
2	*Ruja*	Group A vs. Group B	2.9406	<0.001	HS
3	*Vakstambha*	Group A vs. Group B	1.8974	>0.05	NS
4	*Achetanta*	Group A vs. Group B	1.001	>0.05	NS
5	*Hasta-padasamkocha*	Group A vs. Group B	1.3198	>0.05	NS
6	*Shaitya*	Group A vs. Group B	1.0299	>0.05	NS
7	*Gaurav*	Group A vs. Group B	3.9223	<0.001	HS

In inter group comparison Group A was highly significant in *Ruja* and *Gaurava* as compaired to Group B. in the symptom *Chestanivriti* it was only significant result.

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

Sr. No.	Symptoms	Comparison in Groups	t	p	Results
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 Dosha*, 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 Dosha* 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 *Pakshaghata*, *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 Dosha* (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 (Urda)*, *Mamsa* (meat), milk, and *Jivniya Gana* drugs make complete combination of the nutrition for weak muscles. Milk and *Tail* 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 *Udana*to normal functional state and thus, all *Srotas* fills with the applied *Sneha,* which nourishes the body after digestion by *Bhrajaka 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 *Snayu 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 Bhojana, Divaswapna, Ati-Chinta, Avyaayaama, Snigdha Bhojana, Guru Bhojana, Tikshna Bhojana, Ati Lavana Sevana, Ratri jagarana, Adhyashana,* smoking and *Atimadya Pana.*
- In most of the times *Pakshaghata* due to CVA present as sudden onset without prodormal symptoms.
- The predominant *Dosha* 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.

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