

ORIGINAL RESEARCH ARTICLE - CLINICAL STUDY

Clinical Evaluation of the role of *Sanshamana* and *Sanshodhana Chikitsa* in the Management of *Pakshaghat* (Hemiplegia)

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ABSTRACT

For the current research project, it was decided to select 100 Patients of *Pakshaghat* (Hemiplegia), which were divided into four groups of 25 each and given different treatments for 2 months. Group 1 i.e. Allopathic Group was taken as the control Group, in Group 2- *Shodhana Chikitsa* (*Deepana-Pachana, Snehana (Bahya & Abhyantra), Swedana, Virechana, Sansarjana Krama* and *Basti Chikitsa*) was given, in Group 3- *Shamana Chikitsa* with (*Ekangaveer Rasa, Shatawari Guggulu* and *Kutaki Vati*) was given and in Group 4- *Shodhana Chikitsa* and *Shamana Chikitsa* was given together.

In all 100 patients CT SCAN STUDY (B.T and A.T) was taken as one of the main investigation tool out of other routine investigations like CBC, ESR, Blood Urea, S. Creatinine, Lipid Profile, Blood Sugar LFT, S. Uric Acid, Urine R/M and X-ray Chest etc. to evaluate the effect of the treatment. After Completion, it was observed that all the four groups were effective in managing *Pakshaghat* (Hemiplegia). But patients of Group 4 i.e. *Shodhana Chikitsa* and *Shamana Chikitsa* together had shown much significant results. The success of the course was that there were no side effects at all with given medication.



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Introduction:

Pakshaghat^[1] is a very important disease mentioned among *Vata Vyadhi* is as it makes the patient a cursed creature, so for his normal activities are concerned. The patient not only suffers a physical disability but also

go through psychological and mental problems, which disturb his normal life. This disease not only makes a person handicap but also makes him/ her dependent on his family. Some words quoted by the father of a *Pakshaghat* patient was that “My son walks in dreams, but how long can he sleep?”

The clinical condition similar to *Pakshaghat* in modern medical science is described by the term Hemiplegia. The Commonest cause of Hemiplegia is Cerebral Vascular Accident (CVD) or Stroke^[2]. This is the 3rd most common cause of severe Physical disability. Annual incidence^[3] of Stroke is 180-300/ 1, 00,000, which are going to rise due to less healthy lifestyles.

Need of the study:

Ayurveda has achieved wide recognition and acceptance in recent years. The basic axioms of *Ayurveda* have stood the test of time and experience. However if modern physiological approach is added to understand them then its acceptability could be widened. Scrutiny of various Ayurvedic principles in light of modern principles can unveil hidden physiological concepts in them. The present study is an attempt to portray the above points. Considering this poor prognosis of Hemiplegia and nature of the disease it was decided to evaluate certain Ayurvedic measures that could help in restoring quality of life of paralyzed patients.

Patients included in the trial underwent *Deepana Pachana, Bahya* and *Abhyantara Snehana, Swedana, Virechana, Sansarjan Krama* and lastly *Basti Karma* (*Niruha basti* and *Anuvasana Basti*) along with *Shamana* Drugs. These therapies constitute the holistic approach in the treatment of *Pakshaghat*.

Though, various Acharyas mention *Shamana* and *Shodhana chikitsa*^[4] for the management of *Pakshaghat*. Further due to its safe and effective remedial nature, it has been accepted globally and has brought the world once again towards *Ayurveda*. So the present research work was undertaken to evaluate the role of *Sanshodhana* and *Sanshamana* therapy in the management of *Pakshaghat* along with the control group of Allopathic medicines.

Aims and objectives:

The current research project was undertaken with following aims and objectives -

1. Conceptual and Clinical studies on *Pakshaghat* vis-a-vis Hemiplegia.
2. To clinically evaluate the efficacy of *Shamana Chikitsa* in the Management of *Pakshaghat*.
3. To clinically evaluate the efficacy of *Shodhana Chikitsa* in the Management of *Pakshaghat*
4. To compare the efficacy of *Shamana Chikitsa* and *Shodhana Chikitsa* in the Management of *Pakshaghat* (Hemiplegia).
5. To develop safe and effective remedy for managing *Pakshaghat* (Hemiplegia).

Materials and methods:

The study was conducted on 100 Patients of *Pakshaghat* (Hemiplegia), which were divided in independent four groups viz., patients of Group 1 were treated with allopathic medicine as per the underlying cause; patients of Group 2 were treated with *Shodhana chikitsa*; patients of Group 3 were treated with *Shamana chikitsa* as internal application and patients of Group 4 were treated with the *Shodhana* and *Shamana Chikitsa* together. Patients for this study were selected randomly from the O. P. D. & I. P. D. of NIA Hospital, Jaipur and SMS Medical College Hospital, Jaipur as per the selection criteria.

Selection of patients:

Inclusive criterias:

1. Patients presenting with Classical and Cardinal Signs and symptoms of *Pakshaghat* (Hemiplegia).
2. Age: 20 – 70 years.
3. All Patients other than excluded criteria's were included in the study.

Exclusive criterias:

1. Age less than 20 and more than 70 Years.
2. Patients found to be suffering from Hemiplegia due

to Tumour, Abscess, Trauma, Aneurysm or Febrile conditions.

3. Patients presenting with *Pakshaghat* that is associated with other Systematic diseases like Malignant Hypertension and Hemiplegia complicating with Heart disease.
4. Chronicity more than 5 years.
5. Intracranial Infections- Encephalitis, Meningitis etc.
6. Comatose and Unconscious Patients.
7. Hemiplegia caused due to congenital defects like Cerebral Agenesis, Sclerosis etc.
8. Patients suffering from marked impaired mental functions.

Plan of study: Management including drugs, dosage and duration

Group 1: Control Group/ Allopathic Group

25 patients suffering from various types of Paralysis (Hemiplegia due to Cerebro Vascular Accident or Thrombosis or Embolism) were selected on clinical examination and confirmation and were recommended respective allopathic Medicines as per the underlying cause.

Group 2: Shodhana Group

1. **Deepan Pachana: Panchakola Choorna**^[5] 5 Gm Twice Daily for 3 days with lukewarm water.

Snehana and Swedana

A. Bahya Snehana: Dashmoola taila^[6] generalized body massage daily for 7 days for 45 minutes daily.

B. Abhyantara Snehana: Cow Ghee was given for *Abhyantara Snehapana* with initial dose of 50 ml and in increasing dose of 25 ml for at best for 7 days.

Swedana: Sarwanga Swedana was performed during *Snehapana* i.e for 7 days.

2. **Virechana:** After the gap of 1 day of *Snehana*, *Virechana karma* was performed with **Triphala Choorna** in the dose of 5-10 Gm with *Sukhosna Jala*

once at bed time only for one day.

3. **Sansarjan Karma:** All the patients were asked to follow *Sansarjana Karma* at the bed for 7 days.

4. **Basti Karma:** *Karma Basti krama* was performed for 30 days.

Niruha basti: with *Dashmoola Kwath*^[7] alternately with

Anuvasana Basti: with *Dashmoola Taila*.

5. After *Basti krama* all the patients were subjected to further *Bahya Snehana* and *Swedana* for 10 days.

The total Course of Duration was about 2 months.

Group 3: Shamana group

All the Patients will be advised to take

1. *Ekangaveera rasa*^[8] 250 mg twice daily with lukewarm water for 30 days.
2. *Shatawari Guggulu*^[9] 500 mg thrice daily with lukewarm water for 30 days.
3. *Kutaki vati* 250 mg H.S with lukewarm water for 30 days.

Group 4: Shodhana and Shamana Chikitsa together

These patients were recommended all the procedures up to *Sansarjan Karma* as discussed in patients of group 2. Basti was conducted along with the *Shamana* drugs, as mentioned in patients of group 3.

Investigations to be performed:

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

1. Complete Haemogram- TLC, DLC, Hb gm %, ESR
2. Blood urea
3. Serum creatinine
4. Liver function test
5. Blood sugar
6. Lipid profile

7. URIC ACID
8. URINE R/M
9. X-RAY CHEST

10. CT SCAN STUDY^[10] (B.T and A.T)

Criteria for assesment:

A) Subjective Improvement

Patients were assessed on following symptoms as per Symptom Rating Scales, developed by Prof. A. K. Sharma et al.

- i. *Chestanivriti*- Loss of function (Sensory & Motor function of limbs)
- ii. *Ruja* - pain Sensation (Sensory function)
- iii. *Vakstambha* - Speech disorder/ dysarthria (Sensory function)
- iv. *Achetanta* - Contraction of tendons / Spasticity (Movement, strength, bulk, tone and reflexes of the muscles.)
- v. *Hastapadasamkocha*- contraction of extremities (Sensory & Motor function of limbs)

The subjective parameters mentioned in Ayurvedic classic for *Pakshaghat* were taken into consideration (Ch.ch.28/53-55). These symptoms represent impaired neurological functions, which were included in 4 main groups (according to Hutchinson's clinical examination of nervous system)^[11]. Such as:

- a) Sensory functions
- b) Motor functions
- c) Cranial nerve examination
- d) Autonomic dysfunction

The improvement in these parameters was assessed by the Symptom Rating Scale developed by Prof. A.K. Sharma et al.

B) Clinical Improvement

For assessing the results, the following symptoms were selected which are given as follows –

- 1) Finger Movements
- 2) Motor functions of Arm
- 3) Motor functions of leg
- 4) Sitting from lying down
- 5) Standing from sitting position
- 6) Loss of speech - Dysarthria
- 7) Muscle tone (Rigidity/ Spasticity)
- 8) Loss of muscle power
- 9) Reflexes
- 10) Loss of sensation
- 11) Facial Palsy
- 12) Hand grip power in mm of Hg
- 13) Walking downstairs
- 14) Increasing walking capacity
- 15) Tiredness (Klama)
- 16) Pain (Ruja)

B) Radiological assesment:

Computerized Tomography (CT) scan brain (before and after treatment) was done in all the patients.

Criteria for assessment of Severity of disease:

The improvement in the Severity of disease was assessed by the Assessment Rating Scale, developed by Prof. A.K.Sharma et al. as mentioned below.

Total items 1-16 (Total Score 56)

0-14	=	Normal
15-28	=	Mild
29-42	=	Moderate
43-56	=	Severe

Observations and results:

For the clinical study, 100 clinically diagnosed and confirmed cases of *Pakshaghat* (Hemiplegia) were registered out of these, 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 97 cases.

Majority of the subjects in this trial were Hindu 70 (70%), Males 74 (74%) and Married 92 (92%). Out of them most of the participants were between the age groups of 51 -60 yrs; 27 (27%) and 41-50 yrs; 25 (25%). Regarding level of education maximum patients were uneducated 52 (52%). Considering the socio-economic status maximum 72 (72%) subjects belonged to lower class. Maximum 58 patients (58%) were non-vegetarian. Maximum patients were addicted 53 (53%) consuming Pan, Supari followed by Smoking. Maximum patients were having Avara Ahara Shakti 54 (54%), Madhyama Samhanana 86 (86%), Madhyama Pramana 87 (87%), Madhyama Satmya 52 (52%), Madhyama Satva 29 (29%) and Tamasika Prakriti 69 (69%).

While considering the *Vyayama Shakti* maximum Subjects were having *Madhyama Vyayama Shakti* 60 (60%), suffering from *Anidra* 52 (52%), *Mandagni* 61 (61%) and *Mridu Koshta* 49 (49%).

Regarding the incidence of onset maximum patients has history of sudden onset of disease 88 (88%) and maximum patients came for treatment in hospital with in a month 22 (22%).

Maximum patients were having Right side paralysis 57 (57%), with No Family History 91 (91%), and moderate general condition 57 (57%). Maximum patients were from Jangala Pradesh 91 (91%), having Morning time of onset of Disease 46 (46%) and Majority of them had taken allopathic treatment previously 78 (78%).

While considering the Nature of lesion, Maximum patients were having Infarct in their Computerized Tomography (CT) Scan Report 86 (86%). Majority had Hypertension 27 (27%) followed by Diabetes Mellitus. 13 (13%) and Maximum patients were having Depressive Emotional Status 41 (41%).

Regarding the Improvement in Computerized Tomography (CT) Scan report majority 82 patients (82%) had No Significant Improvement in Computerized Tomography Scan report. While 15 patients (15%) showed Improvement in Computerized Tomography Scan reports (Infarct/ Haemorrhage was resolved). 2 patients did not show any changes and only 1 Patient (1%) had history of increased number of infarct in his Computerized Tomography Scan report.

Table No. I: The incidence of Improvement in Computerized Tomography Scan observed in 100 registered cases of *Pakshaghat*.

Improvement	Group A		Group B		Group C		Group D		Total / %
	No.	%	No.	%	No.	%	No.	%	No. / %
No Significant	19	76	21	84	23	92	19	76	82
Resolved/ Improved	4	16	3	12	2	8	6	24	15
Unknown	2	8	0	0	0	0	0	0	2
Increased	0	0	1	4	0	0	0	0	1
Total	25	100	25	100	25	100	25	100	100

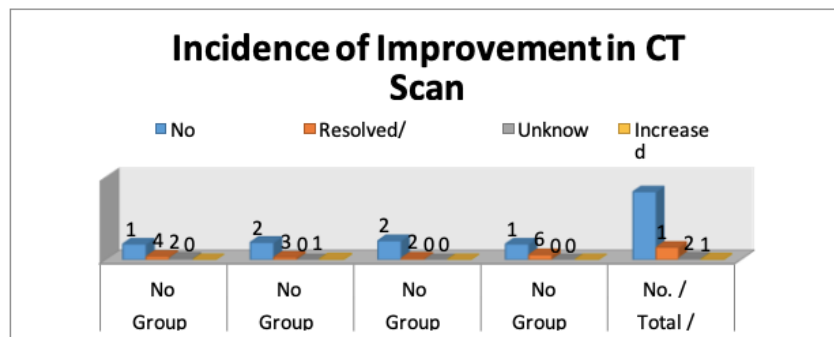


Table No. II: Clinical (Subjective) improvement in the symptoms of *Pakshaghat* (Hemiplegia) in all the four Groups-

Sr. No.	Symptoms	Groups	Relief %	S.D. (±)	S.E. (±)	t	p	Results
1.	Chestanivriti- Loss of functions	A	40.323	0.6903	0.1409	7.3931	<0.0001	HS
		B	27.941	0.8307	0.1661	4.5747	<0.001	HS
		C	18.841	0.8718	0.1744	2.9824	<0.01	S
		D	30.159	0.658	0.1343	5.8941	<0.001	HS
2.	Ruja- pain Sensation	A	39.474	0.6469	0.132	4.7331	<0.001	HS
		B	35.294	0.5859	0.1172	4.0959	<0.001	HS
		C	15.789	0.4359	0.0872	2.753	<0.05	S
		D	38.71	0.5898	0.1204	4.1533	<0.001	HS
3.	Vakstambha- Speech disorder	A	32.558	0.7755	0.1583	3.6849	<0.01	S
		B	21.429	0.4899	0.098	3.6742	<0.01	S
		C	20.455	0.8602	0.172	2.0925	<0.05	S
		D	35.897	0.6539	0.1335	4.3705	<0.001	HS
4.	Achetanta- Contraction of tendons	A	42.105	0.7802	0.1593	6.2792	<0.001	HS
		B	27.692	0.8426	0.1685	4.2724	<0.001	HS
		C	18.75	0.8718	0.1744	2.753	<0.05	S
		D	32.258	0.637	0.13	6.4087	<0.001	HS
5.	Hastapada samkocha- contraction of extremities	A	34.426	0.7974	0.1628	5.3756	<0.001	HS
		B	23.881	0.8602	0.172	3.7199	<0.001	HS
		C	18.75	0.8718	0.1744	2.753	<0.05	S
		D	30.769	0.702	0.1433	5.8158	<0.001	HS
6.	Hatva Pakshamekam (affected side)	A	35.484	0.8805	0.1797	5.0999	<0.001	HS
		B	22.388	0.1	0.2	0.3	<0.01	S
		C	16.667	0.8699	0.174	2.5291	<0.05	S
		D	28.333	0.55	0.1123	6.3089	<0.001	HS
7.	Sharira adhama chetana (Loss of sensation)	A	37.5	0.6123	0.125	0.7	<0.001	HS
		B	29.032	0.8426	0.1685	4.2724	<0.001	HS
		C	22.034	0.8718	0.1744	2.9824	<0.01	S
		D	34.545	0.5882	0.1201	6.5933	<0.001	HS
8.	Shaitya- Heaviness	A	40.909	0.6124	0.125	0.9	<0.001	HS
		B	58.571	0.9522	0.1904	8.6117	<0.001	HS
		C	29.412	0.7071	0.1414	5.6569	<0.001	HS
		D	52.632	0.7372	0.1505	8.3066	<0.001	HS

Table No. III: Clinical (Functional) improvement in the symptoms of *Pakshaghat* (Hemiplegia) in all the four Groups-

Sr. No.	Symptoms	Groups	Relief %	S.D. (±)	S.E. (±)	t	p	Results
1.	Finger Movements	A	50.943	0.8999	0.1837	6.1245	<0.001	HS
		B	37.931	0.8327	0.1665	5.2842	<0.001	HS
		C	29.63	0.8602	0.172	3.7199	<0.01	S
		D	42.593	0.8065	0.1646	5.8216	<0.001	HS
2.	Motor functions of Arm	A	53.333	0.978	0.1996	5.0091	<0.001	HS
		B	42.593	1.0376	0.2075	4.4332	<0.001	HS
		C	29.412	0.866	0.1732	3.4641	<0.01	S
		D	52.174	0.8341	0.1703	5.8737	<0.001	HS
3.	Motor functions of leg	A	54.348	0.9546	0.1949	5.3459	<0.001	HS
		B	43.636	0.9781	0.1956	4.9075	<0.001	HS
		C	25.532	0.9183	0.1837	2.6134	<0.05	S
		D	45.652	0.8502	0.1735	5.0419	<0.001	HS
4.	Sitting from lying down	A	40	0.702	0.1433	4.6526	<0.001	HS
		B	26.087	0.7703	0.1541	3.1157	<0.01	S
		C	29.167	0.7681	0.1536	3.6453	<0.01	S
		D	39.13	0.6757	0.1379	5.438	<0.001	HS
5.	Standing from sitting position	A	39.024	0.702	0.1433	4.6526	<0.001	HS
		B	32.609	0.8165	0.1633	3.6742	<0.01	S
		C	25	0.7703	0.1541	3.1157	<0.01	S
		D	42.222	0.658	0.1343	5.8941	<0.001	HS
6.	Loss of speech - Dysarthria	A	45.238	0.833	0.17	4.6561	<0.001	HS
		B	33.333	0.6455	0.1291	4.6476	<0.001	HS
		C	25.532	0.8718	0.1744	2.753	<0.05	S
		D	35.135	0.5882	0.1201	4.5112	<0.001	HS
7.	Muscle tone (Rigidity / Spasticity)	A	32.202	0.7211	0.1472	5.3787	<0.001	HS
		B	37.143	0.8406	0.1681	6.1858	<0.001	HS
		C	39.13	0.8622	0.1724	6.2633	<0.001	HS
		D	44.444	0.8165	0.1667	7	<0.001	HS
8.	Loss of muscle power	A	40.323	1.0826	0.221	4.7136	<0.001	HS
		B	39.506	1.1372	0.2274	5.6276	<0.001	HS
		C	36	1.222	0.2444	4.4189	<0.001	HS
		D	44.928	0.8065	0.1646	7.8465	<0.001	HS
9.	Reflexes	A	37.778	0.6903	0.1409	5.0273	<0.001	HS
		B	35	1.0279	0.2056	4.0858	<0.001	HS
		C	29.63	0.5686	0.1137	5.6276	<0.001	HS
		D	33.333	0.847	0.1729	4.338	<0.001	HS

10.	Loss of sensation	A	39.535	0.6241	0.1274	5.5602	<0.001	HS
		B	26.667	0.5859	0.1172	4.0959	<0.001	HS
		C	29.412	0.7638	0.1528	3.9279	<0.001	HS
		D	40	0.4423	0.0903	8.3066	<0.001	HS
11.	Facial Palsy	A	50	0.7697	0.1571	3.9782	<0.001	HS
		B	25	0.4583	0.0917	3.0551	<0.01	S
		C	27.586	0.4761	0.0952	3.3607	<0.01	S
		D	51.852	0.6539	0.1335	4.3705	<0.001	HS
12.	Hand grip power	A	37.313	0.9546	0.1949	5.3459	<0.001	HS
		B	21.429	0.6455	0.1291	4.6476	<0.001	HS
		C	25.352	0.7916	0.1583	4.5476	<0.001	HS
		D	40	0.8165	0.1667	7	<0.001	HS
13.	Walking downstairs	A	29.032	0.847	0.1729	4.338	<0.001	HS
		B	20.588	0.7681	0.1536	3.6453	<0.01	S
		C	19.718	0.8699	0.174	3.2189	<0.01	S
		D	26.984	0.8065	0.1646	4.3029	<0.001	HS
14.	Increasing walking capacity	A	48.913	1.2619	0.2576	7.2792	<0.001	HS
		B	25	0.5774	0.1155	8.6603	<0.001	HS
		C	21	0.8981	0.1796	4.6763	<0.001	HS
		D	36.458	0.9315	0.1901	7.6694	<0.001	HS
15.	Tiredness (Klama)	A	32.075	0.6903	0.1409	5.0273	<0.001	HS
		B	37.5	0.8505	0.1701	4.9383	<0.001	HS
		C	25.455	0.5831	0.1166	4.802	<0.001	HS
		D	47.368	0.6124	0.125	9	<0.001	HS
16.	Pain (Ruja)	A	36.585	0.6469	0.132	4.899	<0.001	HS
		B	45.946	0.6272	0.1254	5.4212	<0.001	HS
		C	34.884	0.5774	0.1155	5.1962	<0.001	HS
		D	41.026	0.702	0.1433	4.6526	<0.001	HS

The best results obtained in patients of group D are possibly due to combined use of *Shodhana & Shamana* therapy.

Inter Group Comparison For Clinical (Subjective) Improvement

Table No. IV: Clinical (Subjective) improvement in the symptoms of *Pakshaghat* (Hemiplegia) in all the four Groups -

Sr. No.	Symptoms	Comparison in Groups	Mean difference	t	p	Results
1.	<i>Chestanivriti</i> - Loss of Functions	Group A vs. Group B	0.4183	2.663	>0.05	N.S
		Group A vs. Group C	0.6983	4.445	<0.05	S
		Group A vs. Group D	0.2917	1.838	>0.05	N.S
		Group B vs. Group C	0.2800	1.801	>0.05	N.S
		Group B vs. Group D	0.1267	0.8063	>0.05	N.S
		Group C vs. Group D	0.4067	2.5893	>0.05	N.S

2.	Ruja- pain Sensation	Group A vs. Group B	0.07833	0.6583	>0.05	N.S
		Group A vs. Group C	0.3217	2.703	>0.05	N.S
		Group A vs. Group D	0.1667	1.387	>0.05	N.S
		Group B vs. Group C	0.4000	3.396	>0.05	N.S
		Group B vs. Group D	0.08833	0.7423	>0.05	N.S
		Group C vs. Group D	0.4833	4.104	<0.05	S
3.	Vakstambha- Speech disorder	Group A vs. Group B	0.1117	0.5700	>0.05	N.S
		Group A vs. Group C	0.1917	0.9783	>0.05	N.S
		Group A vs. Group D	0.1667	0.8422	>0.05	N.S
		Group B vs. Group C	0.08000	0.4126	>0.05	N.S
		Group B vs. Group D	0.2783	1.421	>0.05	N.S
		Group C vs. Group D	0.3583	1.829	>0.05	N.S
4.	Achetanta- Contraction of tendons	Group A vs. Group B	0.5050	3.712	<0.05	S
		Group A vs. Group C	0.7050	5.182	<0.01	H.S
		Group A vs. Group D	0.3750	2.729	>0.05	N.S
		Group B vs. Group C	0.2000	1.485	>0.05	N.S
		Group B vs. Group D	0.1300	0.9556	>0.05	N.S
		Group C vs. Group D	0.3300	2.426	>0.05	N.S

Sr. No.	Symptoms	Comparison in Groups	Mean difference	t	p	Results
5.	Hastapada sam- kocha- contraction of extremities	Group A vs. Group B	0.3733	2.421	>0.05	N.S
		Group A vs. Group C	0.4133	2.680	>0.05	N.S
		Group A vs. Group D	0.2083	1.337	>0.05	N.S
		Group B vs. Group C	0.040000	0.2620	>0.05	N.S
		Group B vs. Group D	0.1650	1.070	>0.05	N.S
		Group C vs. Group D	0.2050	1.329	>0.05	N.S
6.	Hatva Pak- shamekam (affected side)	Group A vs. Group B	0.4133	2.624	>0.05	N.S
		Group A vs. Group C	0.5333	3.385	>0.05	N.S
		Group A vs. Group D	0.1250	0.7855	>0.05	N.S
		Group B vs. Group C	0.1200	0.7696	>0.05	N.S
		Group B vs. Group D	0.2883	1.830	>0.05	N.S
		Group C vs. Group D	0.4083	2.592	>0.05	N.S
7.	Sharira adhama chetana (Loss of sensation)	Group A vs. Group B	0.3017	2.564	>0.05	N.S
		Group A vs. Group C	0.3817	3.243	>0.05	N.S
		Group A vs. Group D	0.04167	0.3505	>0.05	N.S
		Group B vs. Group C	0.08000	0.6869	>0.05	N.S
		Group B vs. Group D	0.2600	2.209	>0.05	N.S
		Group C vs. Group D	0.3400	2.889	>0.05	N.S

8.	Shaitya- Heaviness	Group A vs. Group B	0.4650	3.173	>0.05	N.S
		Group A vs. Group C	0.2950	2.013	>0.05	N.S
		Group A vs. Group D	0.5000	3.377	>0.05	N.S
		Group B vs. Group C	0.7600	5.239	<0.01	S
		Group B vs. Group D	0.03500	0.2388	>0.05	N.S
		Group C vs. Group D	0.7950	5.424	<0.01	S

All the results were evaluated by ANOVA test.

Inter group comparison for clinical (functional) improvement

Table No. V: Clinical (Functional) improvement in the symptoms of *Pakshaghat* (Hemiplegia) in all the four Groups-

Sr. No.	Symptoms	Comparison in Groups	Mean difference	t	p	Results
1.	Finger Movements	Group A vs. Group B	0.3567	2.491	>0.05	N.S
		Group A vs. Group C	0.4367	3.050	>0.05	N.S
		Group A vs. Group D	0.2083	1.440	>0.05	N.S
		Group B vs. Group C	0.08000	0.5645	>0.05	N.S
		Group B vs. Group D	0.1483	1.036	>0.05	N.S
		Group C vs. Group D	0.2283	1.595	>0.05	N.S
2.	Motor functions of Arm	Group A vs. Group B	0.3650	2.401	>0.05	N.S
		Group A vs. Group C	0.5650	3.717	<0.05	S
		Group A vs. Group D	0.04167	0.2714	>0.05	N.S
		Group B vs. Group C	0.2000	1.330	>0.05	N.S
		Group B vs. Group D	0.3233	2.127	>0.05	N.S
		Group C vs. Group D	0.5233	3.443	>0.05	N.S
3.	Motor functions of leg	Group A vs. Group B	0.3650	2.222	>0.05	N.S
		Group A vs. Group C	0.5250	3.195	>0.05	N.S
		Group A vs. Group D	0.1667	1.004	>0.05	N.S
		Group B vs. Group C	0.1600	0.9839	>0.05	N.S
		Group B vs. Group D	0.1983	1.207	>0.05	N.S
		Group C vs. Group D	0.3583	2.181	>0.05	N.S
4.	Sitting from lying down	Group A vs. Group B	0.3600	2.291	>0.05	N.S
		Group A vs. Group C	0.3600	2.291	>0.05	N.S
		Group A vs. Group D	0.1667	1.050	>0.05	N.S
		Group B vs. Group C	0.000	0.000	>0.05	N.S
		Group B vs. Group D	0.1933	1.230	>0.05	N.S
		Group C vs. Group D	0.1933	1.230	>0.05	N.S

Sr. No.	Symptoms	Comparison in Groups	Mean difference	t	p	Results
5.	Standing from sitting position	Group A vs. Group B	0.1983	1.326	>0.05	N.S
		Group A vs. Group C	0.3983	2.663	>0.05	N.S
		Group A vs. Group D	0.04167	0.2757	>0.05	N.S
		Group B vs. Group C	0.2000	1.351	>0.05	N.S
		Group B vs. Group D	0.1567	1.047	>0.05	N.S
		Group C vs. Group D	0.3567	2.384	>0.05	N.S
6.	Loss of speech - Dysarthria	Group A vs. Group B	0.2417	1.258	>0.05	N.S
		Group A vs. Group C	0.4417	2.299	>0.05	N.S
		Group A vs. Group D	0.04167	0.2147	>0.05	N.S
		Group B vs. Group C	0.2000	1.052	>0.05	N.S
		Group B vs. Group D	0.2000	1.041	>0.05	N.S
		Group C vs. Group D	0.4000	2.082	>0.05	N.S
7.	Muscle tone (Rigidity / Spasticity)	Group A vs. Group B	0.09333	0.6253	>0.05	N.S
		Group A vs. Group C	0.01333	0.08932	>0.05	N.S
		Group A vs. Group D	0.2083	1.382	>0.05	N.S
		Group B vs. Group C	0.08000	0.5415	>0.05	N.S
		Group B vs. Group D	0.3017	2.021	>0.05	N.S
		Group C vs. Group D	0.2217	1.485	>0.05	N.S
8.	Loss of muscle power	Group A vs. Group B	0.4183	2.157	>0.05	N.S
		Group A vs. Group C	0.3783	1.951	>0.05	N.S
		Group A vs. Group D	0.04167	0.2127	>0.05	N.S
		Group B vs. Group C	0.04000	0.2084	>0.05	N.S
		Group B vs. Group D	0.3767	1.942	>0.05	N.S
		Group C vs. Group D	0.3367	1.736	>0.05	N.S
9.	Reflexes	Group A vs. Group B	0.3933	2.732	>0.05	N.S
		Group A vs. Group C	0.3533	2.454	>0.05	N.S
		Group A vs. Group D	0.3333	2.292	>0.05	N.S
		Group B vs. Group C	0.04000	0.2807	>0.05	N.S
		Group B vs. Group D	0.06000	0.4167	>0.05	N.S
		Group C vs. Group D	0.02000	0.1389	>0.05	N.S

Sr. No.	Symptoms	Comparison in Groups	Mean difference	t	p	Results
10.	Loss of sensation	Group A vs. Group B	0.2367	2.144	>0.05	N.S
		Group A vs. Group C	0.3567	3.231	>0.05	N.S
		Group A vs. Group D	0.04167	0.3736	>0.05	N.S
		Group B vs. Group C	0.1200	1.098	>0.05	N.S
		Group B vs. Group D	0.1950	1.766	>0.05	N.S
		Group C vs. Group D	0.3150	2.853	>0.05	N.S

11.	Facial Palsy	Group A vs. Group B	0.2150	1.484	>0.05	N.S
		Group A vs. Group C	0.2150	1.484	>0.05	N.S
		Group A vs. Group D	0.08333	0.5695	>0.05	N.S
		Group B vs. Group C	0.000	0.000	>0.05	N.S
		Group B vs. Group D	0.2983	2.060	>0.05	N.S
		Group C vs. Group D	0.2983	2.060	>0.05	N.S
12.	Hand grip power	Group A vs. Group B	0.4500	2.665	>0.05	N.S
		Group A vs. Group C	0.3700	2.191	>0.05	N.S
		Group A vs. Group D	0.000	0.000	>0.05	N.S
		Group B vs. Group C	0.08000	0.4787	>0.05	N.S
		Group B vs. Group D	0.4500	2.665	>0.05	N.S
		Group C vs. Group D	0.3700	2.191	>0.05	N.S
13.	Walking down-stairs	Group A vs. Group B	0.3267	1.803	>0.05	N.S
		Group A vs. Group C	0.4467	2.465	>0.05	N.S
		Group A vs. Group D	0.08333	0.4553	>0.05	N.S
		Group B vs. Group C	0.1200	0.6692	>0.05	N.S
		Group B vs. Group D	0.2433	1.343	>0.05	N.S
		Group C vs. Group D	0.3633	2.005	>0.05	N.S
14.	Increasing walking capacity	Group A vs. Group B	1.042	5.578	<0.0001	H.S
		Group A vs. Group C	1.202	6.435	<0.0001	H.S
		Group A vs. Group D	0.5833	3.092	>0.05	N.S
		Group B vs. Group C	0.1600	0.8657	>0.05	N.S
		Group B vs. Group D	0.4583	2.454	>0.05	N.S
		Group C vs. Group D	0.6183	3.311	>0.05	N.S

Sr. No.	Symptoms	Comparison in Groups	Mean difference	t	p	Results
15.	Tiredness (<i>Klama</i>)	Group A vs. Group B	0.1000	0.7757	>0.05	N.S
		Group A vs. Group C	0.1400	1.086	>0.05	N.S
		Group A vs. Group D	0.2500	1.920	>0.05	N.S
		Group B vs. Group C	0.2400	1.881	>0.05	N.S
		Group B vs. Group D	0.1500	1.164	>0.05	N.S
		Group C vs. Group D	0.3900	3.025	>0.05	N.S
16.	Pain (<i>Ruja</i>)	Group A vs. Group B	0.2833	2.596	>0.05	N.S
		Group A vs. Group C	0.03667	0.3359	>0.05	N.S
		Group A vs. Group D	0.1250	1.134	>0.05	N.S
		Group B vs. Group C	0.3200	2.962	>0.05	N.S
		Group B vs. Group D	0.1583	1.450	>0.05	N.S
		Group C vs. Group D	0.1617	1.481	>0.05	N.S

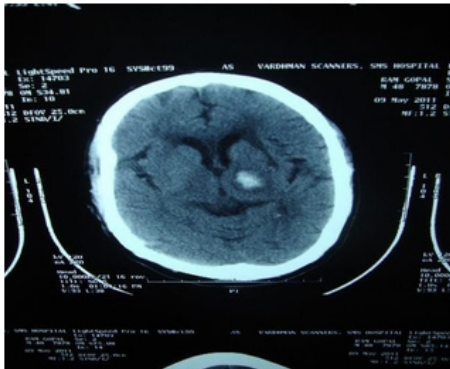
17.	Assessment scale	Group A vs. Group B	4.678	2.490	>0.05	N.S
		Group A vs. Group C	6.238	3.321	>0.05	N.S
		Group A vs. Group D	1.083	0.5709	>0.05	N.S
		Group B vs. Group C	1.560	0.8390	>0.05	N.S
		Group B vs. Group D	03595	1.914	>0.05	N.S
		Group C vs. Group D	5.155	2.744	>0.05	N.S

This may be possible because the *Shamana* therapy gives better results when administered with *Shodhana* therapy. Complete cure was not observed in any patient. There was not a single adverse or toxic effect recorded during and after the course of therapy in all the patients of all the four Groups (A, B, C and D).

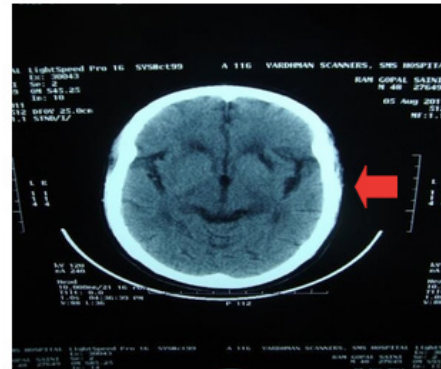
But while considering the t-statistics of the observations, it is clear that patients of Group A (Allopathic drugs) and Group D who were treated by *Shodhana* and *Shamana Chikitsa* together produced more pronounced improvement than the patients of the groups treated with Group B (*Shodhana*) and Group C (*Shamana* therapy) respectively.

CT SCAN OF Group-A (B.T AND A.T)

- 1.B.T. (Intraparenchymal Hematoma of 17 x 19 mm noted in left thalamo-capsular region with minimal perifocal edema).
2. A.T. (Near complete resolve Intraparenchymal hematoma with minimal residual chronic infarct seen).



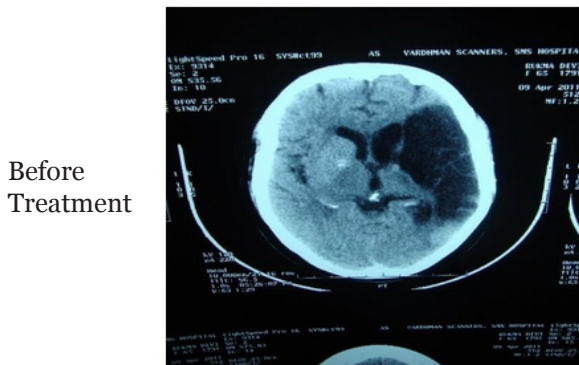
Before Treatment



After Treatment

CT SCAN OF Group-B (B.T AND A.T)

- 1.B.T. (MCA Territory infarct in Left Fronto-temporo-parietal lobe including Basal Ganglia).
2. A.T. (left MCA territory infarct zone transform into Gliotic area. No secondary hemorrhage seen).



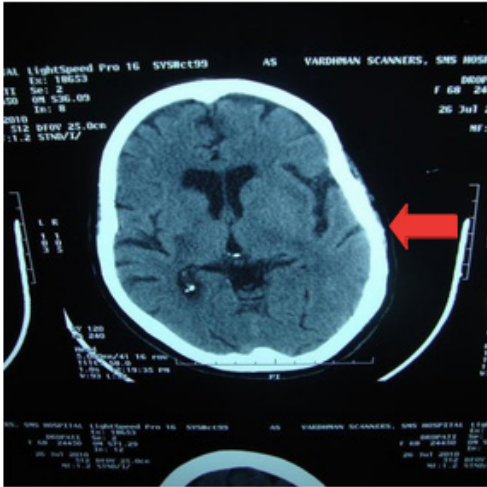
Before Treatment



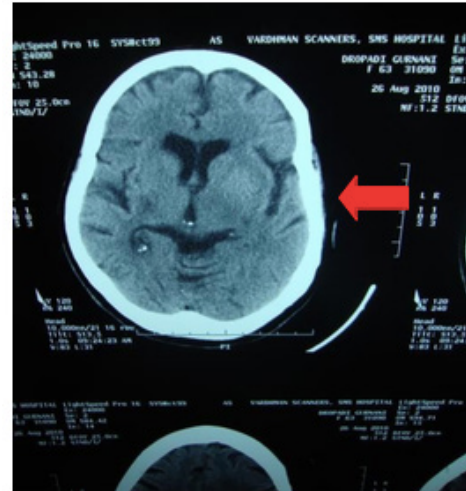
After Treatment

CT SCAN OF Group - C (B.T & A.T)

1. B.T. (Subacute infarct in right posterior limb of internal capsule. Third and lateral ventricles are dilated. Sylvian fissures and superficial sulcal spaces are prominent-DCA).
2. A.T. (Size of infarct convert into Gliotic cavity)



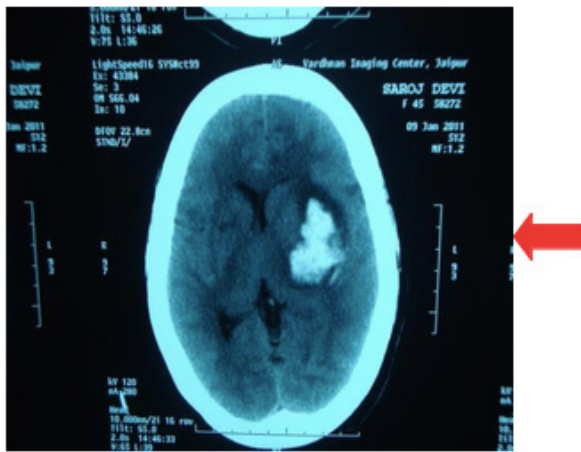
Before Treatment



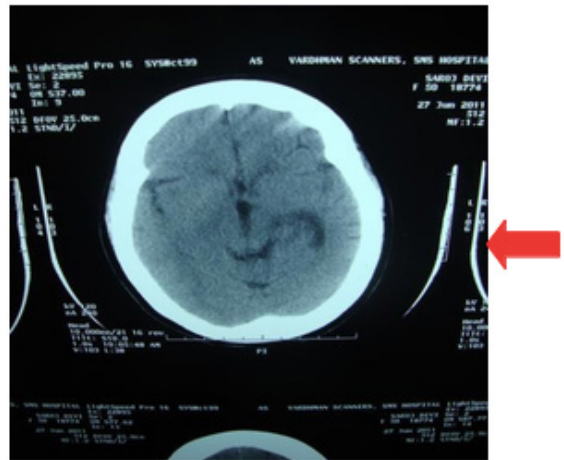
After Treatment

CT SCAN OF Group-D (B.T AND A.T)

1. B.T. (Intraparenchymal Hematoma of 46 x 30 mm noted in left capsule- ganglionic region with perifocal edema and upto 4 mm midline shift.).
2. A.T. (Near complete resolved Intraparenchymal hematoma with no midline shift).



Before Treatment



After Treatment

Conclusions:

Following conclusions can be drawn from the current research work-

- Patients of all groups showed encouraging results in the management of *Pakshaghat* (Hemiplegia). But the result produced in the patients of Group –D was excellent where a combined treatment (*Shodhana* and *Shamana Chikitsa* both) was administered to the patients as compared to Group A (Allopathic group), than Group B (*Shodhana* Group) and Group C (*Shamana* group) respectively.
- Inter Group Comparisons of patients of all groups in the symptom of Assessment Scale with the patients of all other groups were found to be statistically Insignificant ($p > 0.05$) respectively, which proves the Importance of Ayurvedic treatment in the management of *Pakshaghat* (Hemiplegia) disease.
- The complete restoration in muscle power on the affected side and recovery from the disability caused due to CVA in patients of *Pakshaghat* (Hemiplegia) are very rare.
- Considering all these factors, it can be concluded that *Shamana* and *Shodhana Chikitsa* together can be considered as potent treatment modality for managing *Pakshaghat* (Hemiplegia), which is even more compatible to Modern medicines, without producing any toxic or harmful effects in the body as compared to other Ayurvedic treatment – only *Shamana* or *Shodhana* therapy and Allopathic Treatment.
- Hence the *Shamana* and *Shodhana Chikitsa* administered together can be considered as potent treatment modality for managing *Pakshaghat* (Hemiplegia).

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सारांशः

प्रस्तुत शोध में पक्षाघात के 100 रोगियों को 25-25 की संख्या में 4 वर्गों के अन्तर्गत लगभग 2 माह तक चिकित्सा दी गयी, जिसमें प्रथम वर्ग में आधुनिक चिकित्सा (कारणानुसार) के रोगियों को लिया गया, द्वितीय वर्ग के रोगियों में शोधन चिकित्सा (दीपन-पाचन, स्नेहन (बाह्य व आभ्यांतर), सर्वांग स्वेदन, विरेचन कर्म, संसर्जन क्रम व बस्ति कर्म) आदि चिकित्सा दी गयी, तृतीय वर्ग के रोगियों में शमन चिकित्सा (एंकागवीर रस, शतावरी गुग्गुलु व कुटकी वटी) दी गयी एवं चतुर्थ वर्ग में दोनों शोधन व शमन चिकित्सा एक साथ दी गयी।

चिकित्सा अवधि समाप्त होने पर यह पाया गया कि उपरोक्त सभी वर्गों की चिकित्सा लाभकारी है, परन्तु चतुर्थ वर्ग की एकसाथ शोधन व शमन चिकित्सा ज्यादा फलदायी है, जिसकी पुष्टि मुख्य आधुनिक जाँच मानक सी0 टी0 स्कैन के परीक्षण से भी होती है। इस परीक्षण को हमने अन्य जाँच मानकों के इलावा मुख्य मानक भी लिया है। इस पूरी चिकित्सा अध्ययन अवधि में किसी भी रोगी में किसी प्रकार के औषधि के दुष्प्रभाव नहीं पाए गए।