



ETIOPATHOGENESIS OF PAKSHAAGHAATA W.S.R. TO CEREBROVASCULAR ACCIDENT

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ABSTRACT

Pakshaaghaata is described as a Vaata Naanaatmaja Vyaadhi. This indicates that it is manifested only due to Vaata Dosha involvement. Charaka Samhita describes Virechana as the major line of treatment for Pakshavadha. But Virechana cannot be applied to Shuddha Vaataja condition. While describing the indication of Virechana in Vaatavyaadhi Charaka states that Virechana is implied in that condition of Vaata where the Vaata is obstructed by Pitta, Rakta, Kapha and Meda. The obstruction of Vaayu due to these factors is called as Maargaavarana.

Clinical study was carried out on 60 patients distributed in three groups. 20 patients were registered in each group A, B and C respectively. Group A was managed by Snehana-Swedana and Rasona Kalpa. The patients in Group B were given Virechana per 15 days along with Abhyanga and Swedana. Virechana was carried out with Eranda Sneha. The treatment regimen in Group C included Abhyanga, Swedana, Rasona Kalpa and Virechana. The duration of treatment in each group was 45 days. Fourteen patients in Group A, twelve in Group B and seventeen patients in Group C completed the treatment.

On observation it was found that none of the etiological factor or risk factor of Cerebrovascular accident is patently related to the Shuddha Vaataja condition. The Nidaana observed for Pakshaaghaata are not directly Vaata Prakopaka but they priorly vitiate other Dosha. The patients of Group C which were managed by Shodhana and Shamana therapy i.e. Virechana and Rasona Kalpa showed better improvement in Neurological status compared to the other groups. Virechana is indicated in the condition where Vaata is obstructed with other factors like Kapha, Pitta, Rakta and Meda. Rasona also bears an exhaustive reference that, it cures all kinds of Aavarana except that of Rakta.

On the basis of the above factors it has been concluded that Pakshaaghaata due to CVA is manifested due to the Aavarana of Vaata due to other factors like Kapha, Pitta, Meda and Rakta. It also shows Aavarana of Vaataprakara i.e. Anyo-anya-Aavarana. Aavarana scavenging property of Rasona overtakes Virechana, in context of this disorder. Rasona has an impressive role on the factors building or creating atherosclerosis.

KEYWORDS :

INTRODUCTION

Pakshaaghaata is a disease of Majjavaha Strotasa. It is a Madhyama Maargagata Vyaadhi inducing Marmas like Shira and Hridaya. Shira (head) is the Mula of all Indriya (Dnyaanendriya, Karmendriya and Ubhaya Indriya) as well as Praana Vaayu. In the context of modern medicine it is the disease of Central Nervous System (CNS). CNS controls the Homeostasis of whole body systems. Hence, it is related to every system of the body.

The present study was carried out in two major parts; Conceptual study and Clinical study. Conceptual study includes disease review and drug review. Disease contrive initiates with historical review, classification of Pakshaaghaata and all the aspect with respect to Nidaana, Purvarupa, Rupa, Upashaya, Sampraapti, Chikitsa, Upadrava and Arishthaa. This part also contains description about Guna Karma of trial drugs as well as recent trials of that drug with the reference to related contexts.

Aim and Objectives :

- To study the Sampraapti of Pakshaaghaata w.s.r to C.V.A.
- To evaluate the classical quotation "Swedanam Sneha Samyuktama Pakshaaghaate Virechanam."
- To study the Sampraapti of Pakshaaghaata with respect to Aavarana.
- To study the mechanism of action of Rasona.
- To study the role of Virechana in management of Pakshaaghaata. With the mechanism of Eranda Sneha.

Materials and methods:

Criteria of selection of patients:

Patients of either sex after a preliminary diagnosis and clinical examination were selected from the O.P.D. as well as I.P.D. and included for trial.

K/c/o Hemi paresis or Hemiplegia;

- With due causes of;
 - Cerebral ischemia.
 - Cerebral infarction.
 - TIA (Transient ischemic attack)
 - Cerebrovascular thrombosis.
- Presenting neurological deficit as
 - Motor function impairment.

- Impaired sensory function.
- Cranial nerve dysfunction.

Criteria For Exclusion :

- Cerebrovascular Hemorrhage
- Age more than 75 years.
- Onset more than 3 years.
- Comatose and unconscious patients.
- Marked impaired mental function.
- Personality disorder.
- Paralysis with cardiac disorder.
- Paralysis with due cause of trauma, tumor.
- Congenital anomalies of central nervous system.
- Intracranial infective anomaly
- Acute flaccid paralysis.

I) Investigations:

- Routine blood investigations: H% , TLC, DLC, ESR, BSL, BT, CT. Sr. cholesterol
- Routine urine investigation examination and physical examination.
- VDRL was done in order to exclude syphilis.
- The investigations like X- ray chest & skull were done wherever needed.
- ECG was taken wherever cardiac complication were suspected.
- Fundoscopy was also done in cases with raised intracranial tension and also to evaluate retinal damage if any.

Regimen of treatment :

A. Drug regimen:

- Rasona Kalpa:
- Eranda Sneha:
- Tila Taila:

. Drug Administration, Dosage And Duration:

GROUP 'A' :

The patients in this group were managed by Shamana therapy as per following schedule.

Abhyanga : Sarvaanga Abhyanga i. e. external oleation with Tila Taila throughout the trial duration.

Swedana : Sarvaanga Baasha or Naadi Swedana as per the Condition of patient was given

Shamana : Rasona Kalpa was given as a Shamana. Gandusha or Kawala of this powder mixed in milk was carried till Samyaka Lakshana of either was achieved.

Dose: 500 mg 3 times a day

Duration : 45 days.

GROUP 'B' :

The patients in this group were treated with Shodhana therapy i. e. Virechana. The schedule was as follows

I stage :

Snehapana : Plain Tila Taila initially 25 ml and then increasing the dose by 30- 50 ml on each succeeding day until 7 days or up to Samyaka Shehana Lakshana appeared.

Snehana- External Snehana or Abhyanga by plain Tila Taila &

Swedana: Baashpasweda or Naadi Sweda for 3 consecutive days as Purvakarma of Virechana.

Vireka : 20-50 ml of Eranda Taila as per Koshtha of patient such (Anulomana) that Madhyama Shuddhi should be achieved.

II Stage:

Snehana- Snehana with plain Tila oil & Baashpa or Naadi Sweda was Swedana continued accordingly throughout trial duration .

Virechana : Virechana was carried out after a gap of 15 days.

(Anulomana)Duration: 45 days.

GROUP 'C':

Following procedure was implied for management in this group.

- Virechana karma was carried out as per stage I implied in Group'B'.
- Rasona Kalpa was administered in same manner of Group A along with Snehana and Swedana.
- Virechana was given to patients showing Pitta Vriddhi due to Rasona Kalpa.

Duration: 45 days.

CRITERIA FOR ASSESSMENT OF STUDY:

A. Subjective symptoms:

The subjective symptoms were those signs and symptoms which have clinical importance and occur as cardinals for distinguishing the types of Pakshaahaata.

These signs were given certain numerical values for assessment. The incidence of these signs before and after study revealed the data for calculations.

B. Objective Parameters:

Facial paralysis:

This symptom was assessed with the help of gradation scale based on the status of nasolabial fold, symmetry of grimace in response to stimuli, rising of eyebrows and closure of eyes etc.

Power of movements:

A five grade scale ranging from normal to no movement of the major joints of affected limb was applied. The abduction, adduction, flexion etc. were given numerical values as per the scale.

Weight lifting ability:

The ability of the patient to hold and lift weight of certain quantity was assessed. In this criterion, a scale according to the magnitude of weight was prepared.

Grip strength:

The height of mercury level of the sphygmomanometer after gripping of its calf by patients was tallied with the gradation scale. A ten grade scale was used.

Posture or decubitus :

The changes in the posture of patient before and after the treatment were assessed under this parameter. A seventeen scale valuation scale based on routine activities and capability of sitting. Standing, walking etc. was used for assessment.

Walking speed:

The time taken by the patient to cover a previously standardized

distance of twenty meters was the base of this parameter.

Tendon reflexes:

A four grade scale supplemented with numerical Values was used for assessment.

The reflexes were noted before and after the study for statistical application as well as to evaluate the neurological deficit origin.

Muscle Tone:

The muscle tone was assessed under two heads, hypotonia and hypertonia.

The incidence of Hypotonia before and after study was noted for valuation.

The Hypertonia was valued with the help four grade scale based on resistance in and passive movements of joints.

Wasting:

Wasting of affected part was assessed by comparing the measurement of circumference with that of the unaffected side. The measurement of thigh was taken under major consideration. The difference was valued under three grades as per normal readings.

Statistical analysis:

The statistical analysis was done under two headings as follows:

- Analysis of comparability of Groups - Chi- square test
- Analysis of efficacy of treatments – Paired t test and ANOVA.

Level of significance – A customary level of significance was used for the assessment of study (P<0.05)

OBSERVATIONS

Observations of statistical analysis:

- Analysis of comparability of treatment groups:

Aim:

- To show that the groups are eligible for comparison.
- To avoid the bias in the results of the study.

a. Chi- square (X²) table for Age of patients:

Age group (years)	Group A	Group B	Group C	Total
25-55	6	6	11	23
55-65	8	10	4	22
65-75	6	4	5	15
Total	20	20	20	60

O- Observed frequency, E- Expected frequency; df=(c-1)(r-1)=4

X² Value for age of patients in the three groups is 5.11. This value is less than the table value at 4 degrees of freedom at 0.1% level. Hence this indicated that there is no significant difference in the Ages of the patients of all three groups.

b. Chi- square (X²) table for Chronicity of patients:

Chronicity	Group A	Group B	Group C	Total
0-6 m	6	8	7	21
6m-1yr	5	4	5	14
1-3- yr	9	8	8	25
Total	20	20	20	60

O- Observed frequency E- Expected frequency. df=(c-1)(r-1)=4.

X² value for chronicity of patients in the three groups is 0.48. This value is less than the (x²) table value at 4 degrees of freedom at 0.1% level. This indicates that there is no significant difference between the chronicity of distributed patients.

A total of 60 patients were registered for the study. Out of 60 patients, 14 patients in group A , 12 in group B and 17 patients in group C completed the regimen of treatment . The data of 43 patients has been presented for judging the effect of therapy

Effect of therapy on subjective parameters:

The subjective parameters were those signs and symptoms which have clinical importance and occur as cardinals for distinguishing the types

of Pakshaaghaata.

Number of patients:

Parameter	Number of patients					
	Group A		Group B		Group C	
	B.T.	AT.	B.T.	A.T.	B.T.	A.T.
Prabhavit Anga Vichetanatva	5	2 (40)	4	1 (25)	4	0 (0)
Rujaa	8	4 (50)	6	2 (33.33)	8	2 (25)
Daaha	6	2 (33.33)	5	2 (40)	5	2 (40)
Vaakstambha	9	4 (44.44)	7	4 (57.14)	9	3 (33.33)

(%) - The values in parentheses indicate percentage.

Effect of therapy on associated symptoms:

Parameter	Number of patients					
	Group A		Group B		Group C	
	B.T.	AT.	B.T.	A.T.	B.T.	A.T.
Vibandha	9	1 (11.11)	11	1 (9.09)	10	1 (10)
Gaurava	11	3 (27.27)	10	4 (40)	14	2 (14.28)
Shota	3	1 (33.33)	3	1 (33.33)	4	1 (25)
Bhrama	10	3 (30)	10	2 (20)	7	2 (28.57)
Shaitya	4	0 (0)	3	1 (33.33)	4	0 (0)
Shirashula	8	2 (25)	7	2 (28.57)	10	2 (20)
Mutra Agyaanta visaraga	1	0 (0)	0	0 (0)	2	0 (0)

* The values in parenthesis indicate percentage.

A) Subjective symptoms:

1. Numbness (Prabhavitanga Vichetanatva):

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	5	2	0.8	60	1.09	0.49	2.45*
B	4	2	0.5	75	1	0.5	3*
C	4	2	0.5	75	1	0.5	3*

2. Pain (Rujaa):

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	8	2	1	50	1.07	0.38	2.63
B	6	2	0.67	66.67	1.03	0.42	3.16
C	8	2	0.67	25	0.93	0.33	4.54

3. Burning sensation (Daaha):

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	6	2	1	50	1.09	0.44	2.27*
B	5	2	0.8	50	1.22	0.54	2.22*
C	5	2	0.8	60	1.09	0.48	2.5*

4. Speech Difficulty :

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	9	2	0.89	55.56	1.05	0.35	3.17
B	7	2	1.14	57.14	1.07	0.4	2.85
C	9	2	0.67	66.67	1	0.33	4.03

B) Objective signs:

1. Facial Paralysis:

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	12	1.42	0.42	70.59	0.6	0.17	5.88
B	9	1.78	1	43.75	0.83	0.27	2.89
C	10	1.4	0.4	71.43	0.66	0.21	4.76

2. Power of movements in Shoulder joint:

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	14	6.93	5.57	19.59	1.15	0.3	4.53
B	12	6.75	4.5	33.33	1.48	0.43	5.23
C	17	6.53	3.76	42.34	0.90	0.29	9.5

3. Power of movements in Hip joint:

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	14	6.5	5	23.07	1.34	0.36	4.17
B	12	6.67	4.42	33.75	1.6	0.46	4.89
C	17	6.53	3.47	46.84	1.91	0.46	6.65

4 Weight lifting ability :

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	14	3.36	2.64	21.27	1.07	0.28	2.53
B	12	3.67	2.5	31.82	1.11	0.32	3.65
C	17	3.59	1.94	52.46	1.76	0.43	4.37

5 Grip strength :

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	14	7.14	6.36	11	0.89	0.24	3.25
B	12	6.33	4.42	30.26	1.31	0.38	5.05
C	17	6.23	3.62	41.51	1.69	0.41	6.16

6 Posture :

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	14	11.78	7.86	33.33	2.4	0.63	6.14
B	12	11.75	6.33	46.09	3.26	0.94	5.76
C	17	11.23	5.41	51.83	3.06	0.74	7.86

7. Walking speed

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	14	4.71	4	15.15	1.41	0.38	1.87
B	12	4.92	4.17	15.25	1.05	0.3	2.5
C	17	4.88	3.7	21.68	1.6	0.39	2.14

8. Abnormal superficial reflexes:

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	14	1.3	0.5	54.54	0.69	0.22	2.72
B	5	1.4	0.6	57.14	1.09	0.49	1.63*
C	6	1.17	0.33	71.42	0.75	0.3	2.78

9. Abnormal Deep reflexes :

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	14	6.93	5.11	26.29	1.28	0.34	5.35
B	12	6.7	3.33	50.31	0.81	0.23	5.8
C	17	5.61	3.17	43.45	1.97	0.49	4.98

10. Hypotonia :

Group	No.	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	8	2.5	0.4	60	0.92	0.32	4.68
B	7	3.14	0.28	90.9	1.07	0.4	7.15

C	7	3.14	0.57	81.81	0.97	0.37	6.94
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11. Hypertonia:

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	6	3	2.25	25	0.82	0.33	2.27*
B	5	2.4	1.4	41.67	1.11	0.49	2.04*
C	9	2.33	0.28	88.09	1.05	0.33	5.6

12. Sensory changes :

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	6	2	0.67	66.67	1.03	0.42	3.17
B	5	2	0.4	80	0.89	0.39	4.1
C	6	2	0.33	83.33	0.82	0.33	5.05

13. Wasting :

Group	n	Mean score		% Regain	S.D.	S.E.	't'
		B.T.	AT.				
A	9	1.39	0.44	68	0.52	0.17	4.47
B	4	1.5	0.75	50	0.5	0.25	3*
C	6	1.25	0.83	33.33	0.49	0.2	2.08*

(*) – insignificant values

Overall Effect of the treatment:

Assessment of significance of difference between the treatments:

Assessment of the results obtained after the trials in the three groups was done by Analysis of Variance test (ANOVA).

A null hypothesis (H₀) that results are independent of treatment was stated priorly and further tested as follows.

All means, degrees of freedom sum of squares etc. necessary for the test were calculated with the help of data set and finally the ANOVA table was constructed as follows:

1	2	3	4	5
Source of variation	Degrees of freedom (dt)	Sum of squares	Mean sum of squares (MSS)	F- ratio
Between the treatments	2	3416.02	1708.01	1708.01=3.92
Within the treatments (error)	40	17412.4	435.31	--
Total	42	20828.42	-	-

The calculated value of F- ratio is 3.92 it is greater than the value of F-table at 2 and 40 degrees of freedom at customary level of significance. Hence, this proves that the results obtained from the treatment in the trial groups A, B and C are not independent of treatment but, treatment play significant roll in variation.

DISCUSSION ON OBSERVATIONS:

Effect on subjective symptoms :

Numbness:

Numbness can be understood as Prabhavita Anga Vichetanatva in terms of Ayurveda classics. It was observed that numbness diminished significantly in group B and C i.e. by 75% compared to group A (60%); but these were statistically insignificant, Virechana removes the Avarana caused by Kapha or Meda responsible for the symptoms Supti. Hence by normalizing Vaata Gati, Virechana terminates the symptoms.

Pain (Rujaa):

Patients of group C showed 75% gratification, 66.67% in group B and 50% relief was observed in group A. More relief was observed in the combination group 'C'. This might have been occurred due to pacification Vaata because of the removal of Aavarana by Rasona and Virechana. Sarvaanga Abhyanga by Tila Taila also helps in pain relief in the entire trial groups.

Burning sensation (Daaha):

Result bestowed in group C was 60% , in group B and group C was

50% each; the results were however statistically insignificant . This might be due to number of patients presenting the symptom. Virechana occurs in a full flesh in the presence of Pitta Dosha. Pitta in group C patients increased due to Rasona, which was then pacified by Samyaka Virechana leading to termination of Daaha.

Speech difficulty (Vaakstambha):

Vyaana Vaayu and Praana Vaayu are the initiator and controller of Vaaka Pravrutti respectively. Dushti or Aavarana by Kapha of them cause disorders of Vacha. 66.67% gratification was observed in group C followed by 57.14% and 55.56% in group B and group A respectively. Both Rasona and Virechana are Vaatahara and Kaphahara which might have helped scavenging Aavarana.

B) Effects on Objective signs:

Facial Paralysis (Vakri Karoti Naasa Bhru, Sankocha Aurdhamu kham):

Group C and group A patients showed significant relief in this symptom. The proportion of relief in these groups were 71.43% and 70.59% while that in group B was 43.75%. The drug Rasona was common in both significant groups. Rasona has been indicated mainly for Ardita Vyaadhi due to its action on Aavarana, and Vaata – Kapha Dosha which are responsible for causing facial paralysis. Rasona has been administered in the form of Gandusa to the patients of this study. This enables the sublingual absorption of drug into the systemic circulation. Vaagbhata described that Rasona removes the Aavarana of Udaana Vaayu when licked with butter.

Muscle Power/Power of movements:

Power of movements were assessed by flexion, extension, abduction and adduction of joints like shoulder, elbow, hip etc. 46.84% improvement was seen in group C followed by 33.75% and 23.07% in groups B and A respectively. Virechana removes the obstructions in the course of Vaata as well as it causes Vaata Anulomana. Vaata Anulomana leads to normal functioning of Vaata leading to increase in appetite, muscle power, Brimhana and rejuvenation. Rasona is a Rasayana Dravya which adds to the above factors leading to increase in muscle power.

Weight lifting ability:

The significant improvement in holding and lifting the weight was prevalent in group B by 52.46% followed by group B (31.82%) and group A (21.27%)

Grip Strength:

A 41.51% improvement was observed in Grip strength of patients in group C compared to 30.25% in group B and 11% in Group A.

Posture:

Assessment of posture also helped in the judgment of muscle power & co-ordination. It also revealed progress in routine activities of subjects like sitting, standing, walking, etc. Patients in group C showed 51.83% regain in posture where as 46.09% and 33.33% in groups B and C respectively. This observation concludes that Rasona and Virechana improves over all neurological status of the patients.

Effect on Reflexes:

a) Superficial reflexes:

Reflexes showed significant improvement in all three groups. In group C improvement was 71.42%, 57.14% in group B and that in group A was 54.54%. Abnormality in superficial reflexes particularly in Plantar reflex is a result of lesion in neuronal tract. This resembles Avarodha in the course of Vaata due to Kapha, Meda, Pitta or Rakta. This Avarodha when cleared resumes the normal functions of Vaata.

b) Deep reflexes:

Reflexes showed a significant improvement in group B (50.31%). Improvement in group C was 43.45% and in group A was 26.29%. More improvement was observed in Virechana group. Reflexes get exaggerated due to aggravated Chala Guna of Vaata which normalize on Vaata Anulomana.

Effect on Hypotonia: (Sindhi Bandha Vimoksha):

Highly significant results were seen in group B (90%) in context of hypotonia. Group C and Group A showed 81.81% and 60% relief in Hypotonia. Virechana was a common aspect in both groups with significant relief . Virechana brings about Vaatanulomana, potentiates

all Dhaatu, increases body strength and Agni. These properties cause termination of Hypotonia.

Effect on Hypertonia (Sankocha):

88.09% improvement was seen in Hypertonia of group C and 44.83% relief in group B followed by group A (24.49%) which was statistically insignificant. Hypertonia or rigidity may be co-related to Sankocha or Stambha. Both these symptoms develop when Vaata is enveloped by Kapha Dosha. Virechana (Eranda Taila) and Rasona have Kapha Vaataghana properties and Ushna Veerya which helped destroying Aavarana and relieving spasticity of muscles. Sarvanga Abhyanga and Baaspa Sweda also have significant role in the relief.

Effect on sensory changes: (Prabhavit Anga Vichetanatva)

Impairment in sensation is caused by Avarodha of Vyaana Vaayu by Kapha or Meda which might have been cleared by Rasona and Virechana to normalize sensation.

Virechana is also a treatment of Rakta disorders. Supti or sensory impairment is caused by Aavarana of Rakta to Vaata Dosha. Virechana acted on both to normalize function giving 83.33% relief in group C and 80% in group B. Group A the relief was 66.67%

Wasting (Sira Snaayu Vishosha):

Result bestowed in group A was 68% where as 50% in group B and 33.33% in group C. The result in group C was statistically insignificant group A might have shown improvement due to Rasayana property of Rasona.

Overall response to the treatment:

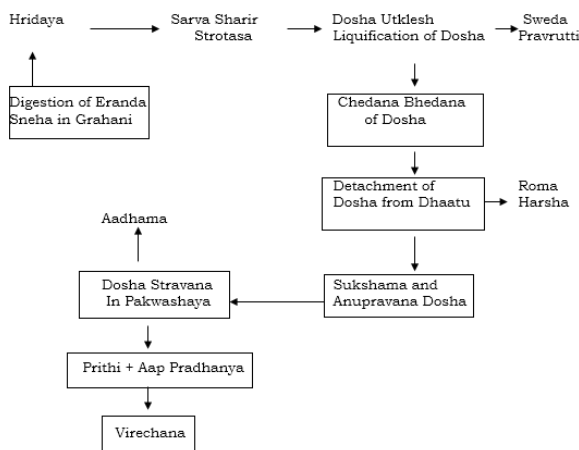
a. Group A (Rasona Kalpa):

There was no incidence of complete relief and moderate relief only 7.14% patients got marked relief , 28.57% patients showed mild relief while 64.28% patients showed no relief (i.e. 25% regain.)

b. Group B (Virechana):

Complete relief was not observe in any patient of this group. 8.33% patients got marked relief. Moderate relief was seen in 33.33% patients, 25% patients showed no relief.

Probable mode of action :



Conclusion :

Disease review:

- The major pathological phenomena involved in the manifestation of Pakshaaghaata due to CVA are Aavarana of Vaata with Kapha, Meda, Rakta and Pitta.
- The characteristic features of patients and disease studied showed that the disease is prevalent in males (66.67%) and affects in the later period of life.
- In female, the incidence of disease is prevalent after menopause.

Drug review:

- Vaata Kaphahara, Rasayana and Aavarana termination properties of Rasona are present in all major classics of Ayurveda
- Wide description of characteristic properties of Eranda Sneha is present in ancient and recent classics of Ayurveda.

- Eranda is specially indicated in the condition in which Vaata is obstructed by Kapha, Meda, Rakta and Pitta.
- Rasona is described as a drug of choice for all kinds of Aavarana except that of Rakta and Pitta.

Clinical review:

- Intolerance of Snehapana was observed in most of the patients leading to unwillingness of Shodhana therapy.
- Rasona should be used with caution in the individuals with Pitta Pradhana Prakriti and patients having Anemia, edema and weak constitution.
- Rasona may produce complications like nausea, vomiting, gastritis and stomatitis.
- Rasona when administer before meals show less complications.
- Eranda Sneha produced intolerance in patients due to its typical odor.
- Eranda Sneha induces Virechana fluently without major complications.
- Sarvaanga Abhyanga and Baaspa Swedana showed affirmative effects on emotional status of patients.
- Both Rasona and Eranda correct imbalanced Agni.
- Rasona showed better relief in symptoms like facial paralysis (71%) speech difficulty (55.56%) and wasting (68%)
- Virechana gives remarkable effects on Hypotonia (90%) Reflexes (50.31%) and Grip strength (31%).
- Better result was found in the group with Shodhana Purvaka Shamana i.e. Virechana with Rasona. Among all groups in the study.
- The complete recovery from illness is very rare but the therapy is useful to improve the functional ability and the quality of living in disabled patients.
- The age and chronicity in patients plays a vital role in response to treatment.
- Considering the deep seated nature of disease, with involvement of major Marma (Shira) and chronicity long term treatment may yield more admirable results.