

CLINICAL-COMPARATIVE STUDY OF VIRECHAN & PAKSHAGHATARI GUGGULU ON PAKSHAGHAT W.R.S. TO HEMIPLEGIA.

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ABSTRACT

In the present era due to speedier change of the civilization, human habits and life style continuously changing without any consideration of their benefits or harms. Adaptation of new diets, movement with fast moving vehicles, maintenance of wrong postures, avoidance or over-indulgence of exercise, suppression of natural urges, anxiety strain etc. of the present life are becoming responsible for increasing incidence of Vatavyadhi like Pakshaghat (Hemiplegia.) These diseases mostly treated by allopathic medicines (high dose of corticosteroids) which are having considerable side effects and could not be used on long term basis. So conclusion is that in these disease, the dose of allopathic medicines and disease gradually progresses and in addition due to the side effects of allopathic medicines, it is better that these diseases should be treated by Ayurvedic medicines.

Keywords: Pakshawadh Pakshaghat and Ardhangavata etc

INTRODUCTION

Stroke¹ is a world-wide health problem; with incidence ranging from 0.2 to 2.5 per thousand per year according to WHO Collaborative Study in 12 countries. It accounts for 20% of neurological admissions. Till date, in India there have been only a few community based studies for either prevalence or incidence of stroke; with one reporting a prevalence rate of 334/100,000 and an incidence of 73/100,000 in 1990. Post-stroke hemiplegia is one of the most common causes of disability in adults. Prevalence of hemiplegia in South India is 56.9 per 100,000; as compared to 150 to 186 per 100,000 in the USA and Europe. Hemiplegic shoulder pain (HSP) is one of the commonest complications, occurring in about 20-72% of such patients with average figures ranges from 43 to 64%³⁻¹⁰. Kalichman and Ratmansky¹¹ reported prevalence of HSP is approximately 22%-23% in the general population of stroke survivors and approximately 54%-55% among stroke patients in rehabilitation settings. In day- today practice Pakshaghat disease is common in Ayurvedic OPD & IPD. As compare to modern medical science after Emergency management on Pakshaghat, they prescribe physiotherapy, which is not so much beneficial.

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Generally the Vatavyadhi is managed by Snehana-Swedana, Vastikarma etc. But according to Charakachrya Virechankarna is the specific treatment for Pakshaghat roga. In Ayurveda there are specific treatments for pakshaghat. There are two types of treatment. One is Shodhan therapy and second is Shaman therapy. Shodhan means purification of the body by eliminating morbid Doshas and Dushyas from body through Panchkarma, and main principal of Shaman therapy is to normalize and maintain the equilibrium of all their Doshas. After the Shodhan therapy comes Shaman chikitsa is indicated for pacifying remnant Doshas.

In the present stage of socio-economic life the trend of disease management is to find out more effective, easily available and quickly responding remedies, which do not have any ill effect on health and longevity of the patient.

The modern scientific mind is not satisfied by only giving statements, no matter from what source they originate, unless and until collaborated by clinical and experimental proof. If this could be achieved, Ayurveda could be brought into mass of humanity in the world.

Aim and objectives

To evaluate the effect of Virechan karma in the management of Pakshaghat (Hemiplegia)

To assess the clinical effectiveness of Pakshaghatari Guggulu yog and Virechan Karma on Pakshaghat i.e. Shodhan (virechan) Purvak Shamak Chikitsa.

To compare the effectiveness of both i.e. Shodhan Purvak shaman and Shaman Chikitsa

MATERIAL AND METHOD

For the present study 30 patients will be selected irrespective of their age, sex, religion etc. from OPD and IPD of Govt. Dhanwantri Ayurvedia Hospital, Ujjain. These 30 patients subdivided into 3 groups.

Group A: Patient will treat with Virechan therapy and after that placebo will be given total 30 days are required.

Group B: In this group after Virechan and Samsarjan krama the research drug will be given up to 30 days.

Group C: In this group only research drug will be given total course will be 30 days.

Detailing of clinical study has been projected under the following manner.

Criteria of Diagnosis

The main Criteria of diagnosis of the patient were based on cardinal as associated symptoms mentioned in classical texts and parameter of nervous system examination.

Criteria of Inclusion

Fully conscious patients

All the patients of Pakshaghat above the age of 20 year

Criteria of Exclusion

Unconscious patients.

Lost bowel and bladder control.

Complicated with heart diseases.

Intra cranial infection meningitis etc.

Trauma, cerebral tumor, cerebral abscess.

Marked impaired mental function.

Criteria of Assessment**Scoring system was adopted for cardinal as associated signs and systems (Doshanubandhi lakshan).****Signs &Symptoms** **Score****Loss of speech (Vaksanga)**

| | |
|-----------------------|---|
| Normal | 0 |
| Speak with difficulty | 1 |
| Speak few words | 2 |
| Utter voice | 3 |
| Aphasia | 4 |

Finger movement

| | |
|-----------------------|---|
| Normal | 0 |
| Able to hold object | 1 |
| Unable to hold object | 2 |
| Slight | 3 |
| No | 4 |

Lifting of Arm at shoulder/Leg at Hip joint (Flexion Extension)

| | |
|-----------|---|
| Up to 180 | 0 |
| Up to 135 | 1 |
| Up to 90 | 2 |
| Up to 45 | 3 |
| No | 4 |

Standing from sitting

| | |
|-----------------|---|
| Normal | 0 |
| Without support | 1 |
| With support | 2 |
| Unable | 3 |

Muscle tone (Rigidity)

| | |
|-------------------|---|
| Normal | 0 |
| Mild rigidity | 1 |
| Moderate rigidity | 2 |
| Severe rigidity | 3 |

Loss of Muscle power

| | |
|--|---|
| Normal | 0 |
| Not against resistance | 1 |
| Power detachable when gravity excluded | 2 |
| Flicker | 3 |
| Complete paralysis | 4 |

Loss of sensation (Achetana)

| | |
|-----------------------------|---|
| Normal | 0 |
| Mild sensory loss | 1 |
| Moderate sensory loss | 2 |
| Sever to total Sensory loss | 3 |

Walking time (cover given distance in time [10 meter])

| | |
|--------------------|---|
| Less than 1 min | 0 |
| Between 1-1:30 min | 1 |
| Between 1:30-2min | 2 |
| More than 2min | 3 |
| Can't Walk | 4 |

Hand grip power by sphygmomanometer

| | |
|----------------|---|
| Above 40 mm Hg | 0 |
| 30-40 mm Hg | 1 |
| 20-30 mmHg | 2 |
| 10-20 mm Hg | 3 |
| 0-10 mm Hg | 4 |

Foot pressure on weighing machine

| | |
|-------------|---|
| Above 40 kg | 0 |
| 30-40 kg | 1 |
| 20-30 kg | 2 |
| 10-30 kg | 3 |
| 0-10 kg | 4 |

Reflexes

| | |
|------------|---|
| Normal | 0 |
| Brisk | 1 |
| Very Brisk | 2 |
| Clonus | 3 |

Ruja (Pain)

| | |
|---------------------------|---|
| No pain | 0 |
| Only after some extension | 1 |
| Less frequently | 2 |
| Very frequently | 3 |

Gourava

| | |
|-----------------|---|
| Normal | 0 |
| Mild Gourav | 1 |
| Moderate Gourav | 2 |
| Sever Gourav | 3 |

Sotha

| | |
|----------------|---|
| No Sotha | 0 |
| Mild Sotha | 1 |
| Moderate Sotha | 2 |
| Severe Sotha | 3 |

Associated signs symptoms

| | |
|----------------------|---|
| No deviation of face | 0 |
| Slightly present | 1 |
| Moderately present | 2 |
| Markedly present | 3 |

On the basis of various haematological and biochemical parameter Routine hematological investigation like Hb, TLC, DLC, ESR. Were done before and after the treatment bio-chemical investigation like FBS and serum cholesterol were also done.

Plan of study: - Pakshaghat is a Kricchsadhya Vyadhi. The therapeuticmeasures should be able to assuage symptoms and provide maximum relief to the patients. Bearing this in mind patients of Pakshaghat were chosen from O.P.D. & I.P.D. of Govt. Dhanwantri Ayurved hospital irrespective of age, sex, and religion & exclusion criterion were taken into account before choosing the patients for the clinical trial. The patient was examined thoroughly and progress of the malady noted precisely weekly. Three group were made underneath is the details.

Three group were designed for the present study

Group A: - Shodhan group incorporated patient that were given Shodhan therapy i.e. Virechan and after placebo were given.

Group-B: - encompassed patient that were given Shodhan therapy than Shaman drug Pakshaghatari Guggulu is given.

| Group | Details of Group | Number of patients registered | Number of patients completed the course | Duration of course | Drug of choice |
|-------|-------------------------------|-------------------------------|---|--------------------|---|
| A | Shodhan group + placebo | 10 | 10 | 30 days | Virechankarma + placebo |
| B | Shodhan therapy + Shaman drug | 10 | 10 | 30 days | Virechankarma followed by pakshaghatahari Guggulu |
| C | Shaman Group | 10 | 10 | 30 days | Pakshaghatahari Guggulu |

Group A-Shodhan Group

10 patients were registered in this group All patients completed the course. In this category, snehan svedan than virechan karm was this is followed by dispensing of capsule of placebo Following is the schedule following in this group.

| S. No. | Therapy | Time Duration | Drug and Dosage |
|--------|--------------------------------|---------------|--|
| 1 | <u>Dipana Pachan</u> | 3 days | <u>Trikatu Churna</u> 5 gm B.D. |
| 2 | <u>Abhyantar Snehan</u> | 5-7 days* | 25-175 ml in increasing order daily increasing by 25 ml (<u>Murchit Til tail</u>) |
| 3 | <u>Bahya Snehan and Svedan</u> | 3 Annakals | <u>Murchit til tail</u> for <u>Snehan, Bahya Sarvang Svedan</u> with <u>Dashmool Kwath.</u> |
| 4 | <u>Virechan karm</u> | Morning ** | <u>Haritaki</u> - 20 gm <u>Trivrita</u> - 20 gm <u>Aragvadha</u> - 20 gm <u>Kutaki</u> - 20 gm 200 ml <u>Kwath</u> of above drug was prepared 30 ml <u>Erand tail</u> was added to it. |
| 5 | <u>Samsarjan Karm</u> | 3-7 days*** | <u>Peya, Vilepi, Akritiyush, krit yush, Akrit krishara, Krit Krishara Ardhar, Purnahar</u> in chronological order*** |
| 6 | Placebo | 15 days**** | Glucose Capsule Dose - 2 BD |

*Dependa on Samyak Snigdha Lakhans. **Empty stomach in the morning 9:00 A.M. ***Depends on Shudhi Prakar Uttam, Hin Madhyam. ****Depends on Shudhi: Total Duration of course 30 days step 1-6 was followed in systemic order

Method of preparation

Method of preparation Murchit til tail and Virechan has been described in Drug review section.

Mode of Dispensing

Glucose was dispensed in the form of capsule of 125mg.

Anupan:-Anupan of Virechan kalp & placebo is Leukwarm water.

Aushadhkal

Virechana kalp in preribed in morning hours after sunrise at 9:00 A.M. placebo given after meals.

Group B

Shodhan therapy than Shaman drug group 10 patients were registered in this group all patient completed this course: In this category, Snehan svedan than Virechan karm was performed this was succeeded by Samsarjan karm which relied in the type of Shudhi achieved in Virechan. This is following in the schedule followed in this group.

| S. No. | Therapy | Time Duration | Drug and Dosage |
|--------|--------------------------------|---------------|---|
| 1 | <u>Dipana Pachan</u> | 3 days | <u>Trakatu Churna</u> 5 gm B.I.D. |
| 2 | <u>Abhyantar Snehan</u> | 5-7 days* | 25-75 ml in increasing order daily increasing by 25 ml* Drug = <u>Murchit Til tail</u> |
| 3 | <u>Bahya Snehan and Svedan</u> | 3 Annakals | <u>Murchit til tail</u> for <u>Snehan, Bahya Svedan</u> with <u>Dushmool Kwath.</u> |
| 4 | <u>Virechan karm</u> | Morning ** | <u>Haritaki</u> - 20 gm <u>Trivrita</u> - 20 gm <u>Aragvadha</u> - 20 gm <u>Kutaki</u> - 20 gm 200 ml <u>Kwath</u> of above drug was prepared 30 ml <u>Erand tail</u> was added it. |
| 5 | <u>Samsarjan Karm</u> | 3-7 days*** | <u>Peya, Vilepi, Akrit, krit, yush, Akrit, Krishara, Krit, Krishara, Ardhar, Purnahar</u> in chronological order*** |
| 6 | <u>Shaman drug</u> | 30 days**** | <u>Pakshaghatahari Guggulu</u> **** Dose 5 gm BID |

*Depends on Samyak snigdha lakshan. **After sunrise in the morning 9:00 A.M. ***Depends on shudhi prakar-Uttam, Hin Madhyam. ***Depends on shudhi total duration of course 30 days step 1to 6 was followed in systemic order.

Method of preparation

Method of murcchit til tail and virechan kalp has been described in drug review section

Method of Dispensing

Pakshaghatari Guggulu was dispensed in the form of pouch according to dose.

Anupan

Anupan of virechan kalp and Pakshaghatari Guggulu is Leukwarm water.

Anushadhkal

Virechan kalp is described in morning hours after sunrise at 9.00 A.M.& pakshaghatari Guggulu is given after meals.

Group C- Shaman Group

10 patients were registered in the group and all patients completed this course Pakshaghatari Guggulu was administered to 10 patients.

Method of Preparation

Method of preparation has been specified in drug review section.

Mode of Dispensing

1gm tablet given for 2 gm BID Dose for 30 days duration.

Dose and Anupana : 2gm BID with lukewarm water

Aushadhkal :After meals..

Statistical Analysis

The result of the therapy was assessed after accomplishment of the treatment All the available data was statically analyzes by applying "period test " The calculated value was compared with tabulated value and the Sequel assessed at various probabilities The results obtained were interpreted as :-

Significant - p < 0.01

Highly Significant - p < 0.001

Observation and results

Table1: Total Effect Cardinal Sign & Symptoms of 10 patients of Hemiplegia in Group A.

| Sign Symptoms | B.T. | A.T. | D | % Relief | S.D.± | SE± | t | P |
|-----------------------|------|------|------|----------|-------|------|-------|--------|
| Finger movement | 2.8 | 1.5 | 1.3 | 52.00 | 0.95 | 0.30 | 4.33 | <0.01 |
| Lifting arm & leg | 3.1 | 1.6 | 1.5 | 48.39 | 0.97 | 0.31 | 4.84 | <0.001 |
| Standing from sitting | 1.67 | 0.78 | 0.89 | 53.33 | 0.60 | 0.2 | 4.45 | <0.01 |
| Loss of speech | 2.2 | 1.6 | 0.6 | 27.27 | 0.70 | 0.22 | 2.72 | <0.05 |
| Loss of sensation | 2.7 | 1.3 | 1.4 | 51.85 | 1.07 | 0.34 | 4.12 | <0.01 |
| Ruja (Pain) | 2.7 | 0.4 | 2.3 | 85.19 | 0.82 | 0.26 | 8.83 | <0.001 |
| Gourav | 2.8 | 1.1 | 1.7 | 60.7 | 0.677 | 0.21 | 7.96 | <0.001 |
| Shotha | 3.1 | 01 | 2.1 | 67.74 | 0.32 | 0.1 | 21 | <0.001 |
| Muscle tone | 3.2 | 1.5 | 1.7 | 53.13 | 1.21 | 0.38 | 4.47 | <0.01 |
| Muscle power | 3.7 | 1.4 | 2.3 | 62.16 | 0.82 | 0.26 | 8.83 | <0.001 |
| Reflexes | 1.13 | 0.8 | 3.33 | 29.20 | 0.19 | 0.13 | 2.54 | <0.05 |
| Walking time | 3.1 | 0.8 | 2.3 | 74.19 | 0.68 | 0.21 | 10.78 | <0.001 |
| Hand grip | 3.3 | 1.2 | 2.1 | 63.63 | 1.29 | 0.41 | 5.12 | <0.001 |
| Foot pressure | 2.5 | 1.1 | 1.4 | 56.00 | 1.17 | 0.37 | 3.78 | <0.01 |
| Associated symptom | 3.2 | 1.5 | 1.7 | 53.13 | 1.21 | 0.38 | 4.47 | <0.01 |

Table2: Total Effect Cardinal Sign & Symptoms of 10 patients of Hemiplegia in Group B.

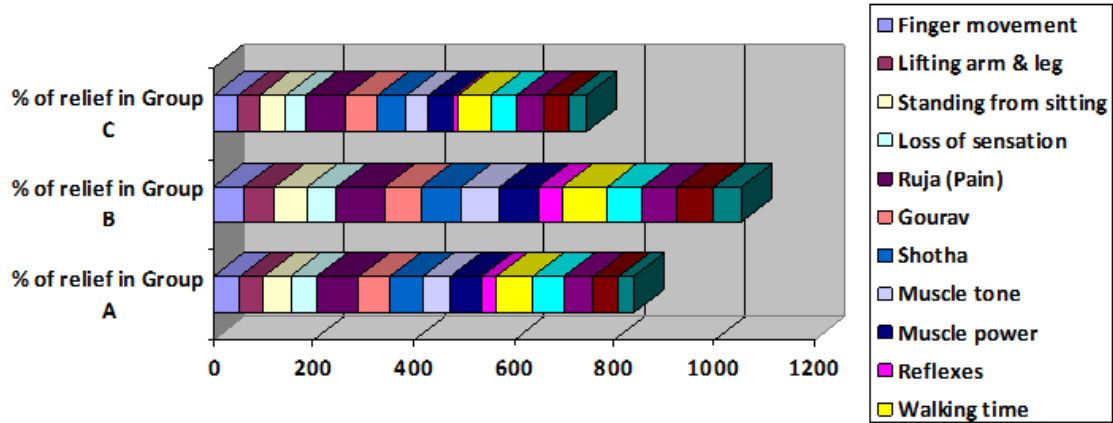
| Sign Symptoms | B.T. | A.T. | D | % Relief | S.D.± | SE± | t | P |
|-----------------------|------|------|------|----------|-------|-------|-------|--------|
| Finger movement | 2.3 | 0.9 | 1.4 | 60.87 | 0.52 | 0.16 | 8.57 | <0.001 |
| Lifting arm & leg | 2.3 | 0.9 | 1.4 | 60.87 | 0.52 | 0.16 | 8.57 | <0.001 |
| Standing from sitting | 2.2 | 0.7 | 1.5 | 68.18 | 0.70 | 0.22 | 6.71 | <0.001 |
| Loss of speech | 2.5 | 1.1 | 1.4 | 56.00 | 1.17 | 0.37 | 3.78 | <0.01 |
| Loss of sensation | 2.8 | 1.2 | 02 | 62.5 | 0.667 | 0.211 | 9.487 | <0.001 |
| Ruja (Pain) | 2.4 | 0.1 | 2.3 | 95.85 | 0.48 | 0.15 | 15.06 | <0.001 |
| Gourav | 2.3 | 0.6 | 1.7 | 73.91 | 0.48 | 0.15 | 11.13 | <0.001 |
| Shotha | 02 | 0.4 | 1.6 | 80.00 | 0.966 | 0.31 | 5.4 | <0.001 |
| Muscle tone | 3.7 | 0.8 | 2.9 | 78.38 | 1.10 | 0.35 | 8.33 | <0.001 |
| Muscle power | 3.1 | 0.8 | 2.3 | 74.19 | 0.67 | 0.21 | 10.78 | <0.001 |
| Reflexes | 2.67 | 1.3 | 1.37 | 50.00 | 0.87 | 0.29 | 4.48 | <0.001 |
| Walking time | 3.4 | 0.4 | 3 | 88.25 | 0.67 | 0.21 | 14.23 | <0.001 |
| Hand grip | 2.9 | 0.8 | 2.1 | 72.41 | 0.73 | 0.23 | 09 | <0.001 |
| Foot pressure | 2.2 | 0.7 | 1.5 | 68.18 | 0.70 | 0.22 | 6.70 | <0.001 |
| Associated symptom | 3.3 | 0.9 | 2.4 | 72.72 | 0.97 | 0.31 | 7.74 | <0.001 |

Table3: Total Effect Cardinal Sign & Symptoms of 10 patients of Hemiplegia in Group C.

| Sign Symptoms | B.T. | A.T. | D | % Relief | S.D. _± | SE _± | t | P |
|-----------------------|------|------|------|----------|-------------------|-----------------|------|--------|
| Finger movement | 03 | 1.5 | 1.5 | 50.00 | 0.71 | 0.22 | 6.8 | <0.001 |
| Lifting arm & leg | 2.4 | 1.4 | 1.1 | 41.67 | 0.82 | 0.26 | 3.85 | <0.01 |
| Standing from sitting | 2.7 | 1.3 | 1.4 | 51.85 | 1.07 | 0.34 | 4.12 | <0.01 |
| Loss of speech | 2.2 | 1.5 | 0.7 | 31.81 | 1.25 | 0.40 | 1.77 | >0.05 |
| Loss of sensation | 2.4 | 1.4 | 01 | 41.67 | 0.82 | 0.26 | 3.85 | <0.01 |
| <i>Gourav</i> | 3.7 | 1.34 | 2.3 | 62.7 | 0.671 | 0.213 | 7.96 | <0.001 |
| <i>Shohta</i> | 3.2 | 1.3 | 1.9 | 59.38 | 0.74 | 0.233 | 8.14 | <0.001 |
| Muscle tone | 2.38 | 1.38 | 01 | 42.10 | 0.76 | 0.27 | 3.70 | <0.01 |
| Muscle power | 2.7 | 1.3 | 1.4 | 51.85 | 1.07 | 0.34 | 4.12 | <0.01 |
| Reflexes | 1.93 | 1.8 | 0.13 | 6.74 | 0.35 | 0.09 | 1.44 | >0.1 |
| Walking time | 1.8 | 0.6 | 1.2 | 66.66 | 0.79 | 0.45 | 4.81 | <0.001 |
| Hand grip | 2.8 | 1.5 | 1.3 | 52.00 | 0.95 | 0.30 | 4.33 | <0.01 |
| Foot pressure | 2.9 | 1.3 | 1.6 | 55.17 | 1.67 | 0.52 | 3.08 | <0.02 |
| <i>Ruia</i> (Pain) | 02 | 0.4 | 1.6 | 80.00 | 0.97 | 0.31 | 5.24 | <0.001 |
| Associated symptom | 3.25 | 1.63 | 1.62 | 50.00 | 0.92 | 0.32 | 5.08 | <0.01 |

Table4: Percentage of relief in cardinal signs & symptoms of Hemiplegia in all three Groups.

| Symptoms | % of relief in Group A | % of relief in Group B | % of relief in Group C | Total % |
|-----------------------|------------------------|------------------------|------------------------|---------|
| Finger movement | 52.00 | 60.87 | 50.00 | 54.29 |
| Lifting arm & leg | 48.39 | 60.9 | 41.67 | 50.32 |
| Standing from sitting | 53.33 | 68.18 | 51.85 | 57.78 |
| Loss of sensation | 51.85 | 56.00 | 41.67 | 49.84 |
| <i>Ruia</i> (Pain) | 85.19 | 95.85 | 80.00 | 87.01 |
| <i>Gourav</i> | 60.70 | 73.91 | 62.7 | 65.77 |
| <i>Shohta</i> | 67.74 | 80.00 | 59.38 | 69.04 |
| Muscle tone | 53.13 | 78.38 | 42.10 | 57.87 |
| Muscle power | 62.16 | 74.19 | 51.85 | 62.73 |
| Reflexes | 29.20 | 50.0 | 6.74 | 28.64 |
| Walking time | 74.19 | 88.25 | 66.66 | 76.36 |
| Hand grip | 63.63 | 72.41 | 52.00 | 62.68 |
| Foot pressure | 56.00 | 68.18 | 55.17 | 59.78 |
| Associated symptom | 53.13 | 72.72 | 50.00 | 58.61 |
| Loss of speech | 27.27 | 56.00 | 31.81 | 38.36 |



Figures1: Percentage of relief in cardinal sings & symptoms of Hemiplegia in all three Groups

Table 5: show t value and P value of the Symptoms after one month clinical trial (if P value<0.20 to >0.05=insignificant, if P values≤0.05 to >0.01=significant, if P value ≤0.01 to <0.001= highly significant)

| Symptoms | % of relief in Group A | | | | % of relief in Group B | | | | % of relief in Group C | | | |
|-----------------------|------------------------|-------|---------|-----|------------------------|---------|--------|-----|------------------------|------|--------|-----|
| | t | P | Results | t | P | Results | t | P | Results | | | |
| Finger movement | 52.00 | 4.33 | <0.01 | S | 60.87 | 8.57 | <0.001 | H.S | 50.00 | 6.8 | <0.001 | I.S |
| Lifting arm & leg | 48.39 | 4.84 | <0.001 | H.S | 60.9 | 8.57 | <0.001 | H.S | 41.67 | 3.85 | <0.01 | S |
| Standing from sitting | 53.33 | 4.45 | <0.01 | S | 68.18 | 6.71 | <0.001 | H.S | 51.85 | 4.12 | <0.01 | S |
| Loss of sensation | 51.85 | 2.72 | <0.05 | S | 56.00 | 3.78 | <0.01 | S | 41.67 | 1.77 | <0.05 | S |
| Ruja (Pain) | 85.19 | 4.12 | <0.01 | S | 95.85 | 9.487 | <0.001 | H.S | 80.00 | 3.85 | <0.01 | S |
| Gourava | 60.70 | 8.83 | <0.001 | H.S | 73.91 | 15.06 | <0.001 | H.S | 62.7 | 7.96 | <0.001 | H.S |
| Shotha | 67.74 | 7.96 | <0.001 | H.S | 80.00 | 11.13 | <0.001 | H.S | 59.38 | 8.14 | <0.001 | H.S |
| Muscle tone | 53.13 | 21 | <0.001 | H.S | 78.38 | 5.4 | <0.001 | H.S | 42.10 | 3.70 | <0.01 | H.S |
| Muscle power | 62.16 | 4.47 | <0.01 | S | 74.19 | 8.33 | <0.001 | H.S | 51.85 | 4.12 | <0.01 | S |
| Reflexes | 29.20 | 8.83 | <0.001 | H.S | 50.0 | 10.78 | <0.001 | H.S | 6.74 | 1.44 | >0.1 | I.S |
| Walking time | 74.19 | 2.54 | <0.05 | S | 88.25 | 4.48 | <0.001 | H.S | 66.66 | 4.81 | <0.001 | H.S |
| Hand grip | 63.63 | 10.78 | <0.001 | H.S | 72.41 | 14.23 | <0.001 | H.S | 52.00 | 4.33 | <0.01 | S |
| Foot pressure | 56.00 | 5.12 | <0.001 | H.S | 68.18 | 09 | <0.001 | H.S | 55.17 | 3.08 | <0.02 | S |
| Associated symptom | 53.13 | 3.78 | <0.01 | S | 72.72 | 6.70 | <0.001 | H.S | 50.00 | 5.24 | <0.001 | H.S |
| Loss of speech | 27.27 | 4.47 | <0.01 | S | 56.00 | 7.74 | <0.001 | H.S | 31.81 | 5.08 | <0.01 | S |

Table5: Total effect of therapy on laboratory parameters of 10 patients of Group A

| Parameters | B.T. | A.T. | D | % Relief | S.D.± | SE± | t value | p |
|------------|-------|------|-------|----------|--------|--------|---------|-------|
| Hb% | 13.45 | 13.7 | -0.25 | 1.86↑ | 13.18 | 0.42 | -0.6 | >0.10 |
| TLC | 8040 | 7730 | 2310 | 3.86 | 769.5 | 243.33 | 1.274 | >0.10 |
| ESR | 10.3 | 11 | -0.7 | 6.796 | 5.677 | 1.795 | -0.389 | >0.10 |
| S.Cho. | 197.1 | 188 | 9.1 | 4.6169 | 13.543 | 4.282 | 2.1247 | >0.05 |
| F.B.S. | 93 | 91.7 | 1.3 | 1.3978 | 9.393 | 2.970 | 0.4377 | >0.10 |

In Group A :

Hb% was increased by 1.86% that was statistically insignificant (p >0.10)

TLC was decreased in Group A 3.86% change was seen in readings, that was statically insignificant.

E.S.R. was increased in Group A 3.86% change was seen in readings, that was statically insignificant.

S.Cholesterol. was decreased by 4.61% Group A that was also insignificant

F.B.S. was found to be decreased by 1.39% in Group A that was also insignificant statistically.

Table6: Total Effect of therapy on laboratory parameters of 10 patients in Group B.

| Parameters | B.T. | A.T. | D | % Relief | S.D.± | SE± | t value | p |
|----------------|-------|-------|-------|----------|--------|--------|---------|-------|
| Hb% | 13.3 | 13.95 | -0.65 | 4.88↑ | 1.415 | 0.447 | -1.452 | >0.10 |
| TLC | 7420 | 7860 | -440 | 5.92↑ | 840.89 | 265.91 | -1.654 | >0.10 |
| ESR | 11.2 | 10.9 | 0.3 | 2.67↑ | 6.037 | 1.909 | -0.157 | >0.10 |
| S.Cholesterol. | 189.8 | 199.7 | -2.9 | 1.5279↑ | 16.76 | 5.299 | -0.547 | >0.10 |
| F.B.S. | 102.8 | 90.5 | 13.5 | 13.035 | 26.442 | 8.3615 | 1.603 | >0.10 |

In Group B :Hb% was increased by 4.88% in group B that was insignificant. TLC was increased by 5.92% in Group B that was insignificant. E.S.R. was decreased by 2.68% Group B that was insignificant. S.Cholesterol. was increased by 1.527% in Group B that was statistically insignificant. F.B.S. was decreased by 13.03% in Group B that was statistically insignificant.

Table7: Total Effect on laboratory parameters of 10 patients in Group C.

| Parameters | B.T. | A.T. | D | % Relief | S.D.± | SE± | t value | p |
|----------------|-------|-------|-------|----------|---------|--------|---------|-------|
| Hb% | 13.65 | 14.4 | -0.85 | 6.2271↑ | 1.415 | 0.448 | -1.899 | >0.05 |
| TLC | 8230 | 8040 | 190 | 2.307 | 1189.26 | 376.07 | 0.505 | >0.10 |
| ESR | 13.6 | 12.7 | 0.9 | 6.6176 | 5.971 | 1.88 | 0.476 | >0.10 |
| S.Cholesterol. | 198.9 | 188.6 | 10.3 | 5.1784 | 11.035 | 3.489 | 2.9514 | >0.02 |
| F.B.S. | 97.1 | 94.1 | 03 | 3.0895 | 08 | 2.529 | 1.1858 | >0.10 |

In Group C: Hb% was increased by 6.22% in Group C that was statically insignificant. TLC was decreased by 2.31% in Group C that was insignificant. E.S.R. was decreased by 6.62%, S.Cholesterol. was decreased 5.18%, F.B.S. was decreased by 3.08% in Group C that all are statistically insignificant

CONCLUSION

Table8: Total Effect of therapy of 30 patients of Hemiplegia

| Total Effect | Group A | | Group B | | Group C | | Total | % |
|----------------------|------------|----|------------|----|------------|----|-------|------|
| | No. of Pt. | % | No. of Pt. | % | No. of Pt. | % | | |
| Complete cure | 00 | 00 | 01 | 10 | 00 | 00 | 1 | 3.33 |
| Marked improvement | 04 | 40 | 05 | 50 | 03 | 30 | 12 | 40 |
| Moderate improvement | 06 | 60 | 04 | 40 | 05 | 50 | 15 | 50 |
| Mild Improvement | 00 | 00 | 00 | 00 | 02 | 20 | 2 | 6.66 |
| Unchanged | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |

Complete remission was found in 10% in Group B only. As a whole of 30 patients studied, complete remission was found in 3.33% in Group B As a whole of 30 patients studied complete cure was found in 3.33%. Marked improvement was obtained in 40% in Group A, 50% patients of Group B, 30% patients of Group C. As a whole of 30 patients studied marked improvement was found in 40%. Moderate improvement was obtained in 60% in Group A, 40% patients of Group B 50% patients of Group C. As a whole of 30 patients studied moderate improvement was found in 50%. Mild improvement was found in 20% in Group C only. As whole of 30 pt. studied mild improvement was found 6.66%. No patient remained unchanged by this therapy.

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