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# A Clinical study to Evaluate the Efficacy of *Yuktaratha Basti* in *Pakshaghata*

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## ABSTRACT

*Pakshaghata* is a dreadful disease of modern era as a result of so many health problems such as Hypertension, Atherosclerosis etc. induced due to modern life style and as a complication of the other diseases,it needs *panchakarma* treatment.

Stroke is the 2nd leading cause of death in people above the age of 60yrs, and 5thleading cause in people aged 20 to 59yrs old[1]. *Pakshaghata* can be co-related with stroke phenomena. According to WHO, stroke or CVA is a "rapidly developing clinical signs of focal (or global) disturbance of cerebral function, with symptoms lasting 24 hours or longer or leading to death, with no apparent cause other than of vascular origin"[2].

*Pakshaghata* is one among the *nanaatmaja vata vyadhi*[3], considered as a *maharoga* from point of prognosis and*duschikitsya*[4].Here the greatly aggravated *vata*, invades the *shareera dhamani's* causing *sandhibandhamoksha* and paralyzing one side of the body causing *cheshtahani* of the side with pain and loss of speech. In this condition the *yuktaratha basti* which is having *vatahara guna* is beneficial[5].

Hence owing to the simple ingredients with high therapeutic efficacy stated in *chikitsa sthana* of *sushrutha samhitha*, yuktaratha basti was selected for the study[5], from OPD and IPD of SDM Ayurveda College and Hospital, Udupi.*Yuktaratha basti* with *moorchitha tila taila anuvasna basti* was carried out in all the 28 patients in *yoga basti* pattern. Results were assessed on the basis of fixed subjective and objective parameters. The study has shown encouraging results on functional knack of *pakshaghata*.

## KEYWORDS

*Pakshaghata, Yuktaratha, Basti*

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## INTRODUCTION

In the present competitive world, it is very essential for a person to be active physically. Advancing modernization with changing life style and food habits increases the physical stress on a person. Incidences of disorders like Diabetes Mellitus, Hypertension, Atherosclerosis etc are increasing gradually snags of such disorders ending up in motor neuron abnormality like hemiplegia. This changing life style leads to vitiation of *vata*, principle among *tridosha* and dynamic entity of life and locomotion. One of the conditions offshoot as a consequence of vitiated *vata* is *pakshaghata.*

*Pakshaghata* can be co-related with Stroke phenomena. Most of the CerebroVascular accidents are manifested by abrupt onset of a focal neurological deficit as if the patient was "Struck by hands of GOD"[6]. According to WHO, Stroke or CVA is defined as "rapidly developing clinical signs of focal (or global) disturbance of cerebral function, with symptoms lasting 24 hours or longer or leading to death, with no apparent cause other than of vascular origin"[2].

Stroke is the 2nd leading cause of death in people above the age of 60yrs, and 5th leading cause in people aged 20 to 59yrs old[1]. According to statistical data, 7,00,000 Indians are suffering with stroke every year i.e., ranging from 100-150 per 100,000 people, it is higher in urban than in rural areas. According to the causes, 85% strokes are due to ischemic conditions and 15% due to haemorrhagic conditions. About 1/5th of the patients with achronic stroke will die within a month of event and at least half those who survive will be left physically disability7.

Gravity of the disease was perfectly judged by ancient physicians even the name given suggests the egregious nature of *pakshaghata.Pakshavadha* is the synonym of *Pakshaghata.*"*Vadha*"means to assassinate and "*Ghata*" means to strike hard and suddenly. Both the words suggest a sudden appearance of strong symptoms and sequel like *shiromarmaghata, indriyanasha, ekanga karmahani* and even death. Being a *vatavyadhi*[3], *pakshaghata* is a *mahagada* or *duschikitsya*[4]. Its *samprapti* evolves in shira (head), which is a *mahamarma*. It has exhibition of symptoms in the part of the body having the involvement upto *gambheera dhatu* i.e *majja,* which makes *pakshaghata* as nightmare to patient as well as physician community. It produces a very miserable, dependent and prolonged crippled life with constant mental trauma. The main goals of therapy are to thereby minimize neurologic deficit and disability, and to improve the

quality of life after the manifestation of stroke.

Hence an energetic and step by step approach towards the management of this disease is taken up in the classics like- *"snehana, swedana, mrudu virechana, basti, nasya, mastiskya"* i.e a potent, still safe remedial measure is required to combat the disease at multiple levels, viz *doshas, gambheera dhatus, upadhatu, udbhavasthana, marma (shiras).* In this regard *basti chikitsa* may be considered as a boon to patients. *Basti* is highlighted in the *samhitas* owing to its multifaceted, multifactorial therapeutic benefits[8]. After the stabilization of the patient from acute phase of stroke, different *bahya parimarjana chikitsa* may be employed. However, the line of treatment *virechana* cannot be employed in certain groups of patient eg. *durbala*, in such situations *basti chikitsa* may be employed[9].

## AIMS AND OBJECTIVES

To evaluate the efficacy of *Yuktaratha basti* in *pakshaghata* clinically.

## MATERIALS AND METHODS

*Study design*:- This is an open randomised study with pre-test and post-test.

*Source of data* :- Minimum of 30 patients suffering from *pakshaghata* coming under the inclusion criteria approaching the OPD AND IPD of SDM Ayurveda Hospital, Udupi were selected for the study.

*Sample size:-* Total 30 patients were registered for the study and among them two dropped out, whereas 28 patients completed the treatment schedule.

*Inclusion criteria*:- Patients's fulfilling the diagnosis of *Pakshaghata*. Patients who are fit for *Niruha Basti.*

*Exclusion criteria*:- Signs and symptoms of *Pakshaghata* with evidence of Cerebral infection, space occupying lesions, trauma and malignancies. Patient with transient ischemic attack, patient's who are unfit for *niruha basti* and who are below the age 20 years and more than 80 years.

*Assessement criteria*: - A special research proforma was prepared for the study incorporating all the relevant points from both *ayurvedic* and modern views.

*Samyak niruha lakshanas* were assessed daily after the administration of *basti.*

The results were assessed on the basis of signs and symptoms of *pakshaghata* before and after treatment i.e. on 8th and 24th day after administration of *basti.*

*Subjective parameters*:- Symptoms of *pakshaghata* i.e. *karmakshaya, karmahani, vichetana, vaksthamba, sankocha, sandi bhanda vimoksha, ruja, thoda* and *shotha*. Symptoms of *samyak niruda* and *anuvasita laskshanas.*

*Objective parameters*:- Neurological mapping

Finger Movements:

Grade 0 - No movements

Grade 1 - Slight movement

Grade 2 - Unable to hold the object

Grade 3 - Able to hold with less power

Grade 4 - Normal

Lifting of arm at Shoulder:

Grade 0 - No

Grade 1 - Upto 45

Grade 2 - Upto 90

Grade 3 - Upto 135

Grade 4 - Upto 180

Lifting of leg at Hip joint :

Grade 0 - No

Grade 1 - Upto 45

Grade 2 - Upto 90

Sitting from lying down position:

Grade 0 - Without support

Grade 1 - With support

Grade 2 - Unable

Standing from sitting:

Grade 0 - Without support

Grade 1 - With support

Grade 2 - Unable

Loss of Speech:

Grade 0 - Normal

Grade 1 - Speaks with difficulty

Grade 2 - Speaks few words

Grade 3 - Utter voice

Grade 4 - Global Aphasia

Reflexes:

Grade 0- No response.

Grade 1 - Somewhat diminished: low normal

Grade 2 - Average: Normal

Grade 3 - Brisker than average.

Grade 4 - Very brisk, hyperactive with clonus

Muscle tone:

Grade 0- No increase.

Grade 1 - Slight increase with catch and release

Grade 2 - Minimal resistance through range following catch

Grade 3 - More marked increase tone through range of movement

Grade 4 - Considerable increase in tone, passive movement difficulty

Grade 5 - Affected part rigid

Muscle strength:

Grade 0 - No movement

Grade 1 - Flicker with attempting movement

Grade 2 - Movement with gravity eliminated

Grade 3 - Movement against gravity

Grade 4 - Diminished

Grade 5 - Normal power

Paper holding:

Grade 0 - Patient fails to hold paper

Grade 1 - Patient holds gently

Grade 2 - Normal

Drooping of Wrist/Foot:

Grade 0 - No

Grade 1 - Slight

Grade 2 - Moderate

Grade 3 - Full

Loss of sensation:

Grade 0 - Normal; no sensory loss.

Grade 1 - Mild sensory loss; patient feels pinprick is less sharp or is dull on the affected side.

Grade 2 - Moderate sensory loss or there is a loss of superficial pain with Pinprick but patient is aware of being touched.

Grade 3 - Severe to total sensory loss; patient is not aware of being touched in the face, arm, and leg.

Handgrip Power test:

The Mercury level of Sphygmomanometer was kept steady at 10mm of Hg and patient was asked to press the cuff with maximum strength. First with unaffected hand and then with affected hand. The rise in pressure was measured 3 readings were taken. Then mean of three readings were calculated before treatment and after treatment.

Grade 0 - 40 – 50 mm Hg

Grade 1 - 30 – 40 mm Hg

Grade 2 - 20 – 30 mm Hg.

Grade 3 - 0 – 20 mm Hg.

Foot Pressure:

Weighing machine was kept in upright position by giving support of wall. Patient was asked to press with his leg on the machine as much as possible. Three readings were taken, then mean of three readings were calculated before and after treatment.

Grade 0 - 10-15 Kg

Grade 1 - 5-10 kg

Grade 2 - 0-5 Kg

Walking time:

For measuring walking capacity patient was asked to walk the possible distance in a stipulated time of 5 minutes. It was further counted and evaluated by any increase in it.

Grade 0 - 5 times than before

Grade 1 - 4 times than before

Grade 2 - 3 times than before

Grade 3 - 2 times than before

Grade 4 - No Change

**Drugs under study**

*Sthanika abhyanga* with *murchita tila taila sthanika swedana- nadi sweda* with *ushna jala*

In this study *basti* was administered in *Yoga basti* course. Therefore, on 1st, 3rd, 5th, 7th, 8th, day *Anuvasana basti* with *Murchita tila taila* was given and 2nd, 4th, 6th *Yuktharatha basti* was given[5]. *Parihara kala* was for 16 days. The signs and symptoms were recorded on the proforma designed for the study and assessment was done before and after the treatment and after 16 days.

*niruha yuktaratha basti* :- *madhu*-190ml, *saindhava*-10gms, *murchita tila taila*-190ml, *kalka-vacha, pippali, madhanaphala, madhana*-40gms,

*erandamoola qwata*-380ml, *mamsa rasa*-90ml

The *basti* started in *yoga basti* pattern *sthanika abhyanga* with *murchita tila taila* followed by *nadi sweda* was done before administration of *basti*. In *Yoga basti* pattern, *Niruha Basti* given with *yuktaratha basti* and *anuvasana basti* was given with 70ml with *murchita tila taila.* Preparation of *niruha basti* was done as per classics, at first *madhu*was taken in *khalwa, saindhava* was added to this and mixed thoroughly. As *sneha murchita tila taila* was added and again mixed. As *kalka dravya*-*vacha,pippali, madhuka, madhanaphala* was added. At last*erandamoola qwata* was added, at last as *avapa mamsa rasa* was added and was churned till it becomes homogeneous mixture.

**Table 1** Observations

| S. no | Age | Sex | Religion | Desha | Sharirika prakruti | Associated diseases | Addictions | Duration of illness |
|---|---|---|---|---|---|---|---|---|
| 1 | 20-30 yrs | Male | Hindu | Jangala | Vatapitta | Diabetis mellitus | Smoking | 10-20 days |
| 2 | 31-40 yrs | Fem ale | Muslim | Sadharana | Vatakapha | Hypertension | Alcohol | 21-30 days |
| 3 | 41-50 yrs | | Christian | Anupa | Pittakapha | Both | Both | 31-60 days |
| 4 | 51-60 yrs | | | | Kaphapitta | Nothing significant | Tobacco | 61 days-1 year |
| 5 | 61-70 yrs | | | | | | No addictions | 1 year-2 year |
| 6 | 71-80 yrs | | | | | | | >2 years |

## OBSERVATIONS

Among 30 patient's registered for study 28 completed the treatment schedule successfully, all the patient's were suffering from *pakshaghata* some were having left and some with right sided *pakshaghata.* Refer Table 1.

Maximum patients belong to age group of 51-60 years and were males, indicated incidence more in old age and in males. Maximum patients were Hindu, a large part of sample encompassof in service. Maximum patients were having primary and pre-university followed by high-school,uneducated,graduate,post graduate and belonged to middle class. Study shows all the patients were from *anupa desha*in preponderance of rasa in their diet intake of *dwirasa*was pragmatic. Chief source of addiction as alcoholism, smoking, tobacco chewing in the above sample. While studying the patients in respect of*agni and koshta*, it was found that most of the patients were having *madhyama koshta. vata-kapha prakruti* dominated the above sample. Most of them had disturbed sleep. Maximum number of patients had*madhyama satwa, madhyama*

*samhanana, madhyama satmya, madhyama abhyavaranashakti* and *jaranashakti, avara vyayamapurvakalina, madhyama vyayamaadhyatana*.Most of the patients having chronicity ranging from 61 days-1 year were present in the clinical study. Maximum patients had history of sudden onset. Mostcommon type of lesion was Infarct.

## RESULTS

Results were analysed on the basis of grading of subjective and objective parameters using statistics. The observed grading in the patients on subjective and objective parameters as follows:- Refer Table 2,3,4,5

**Table 2** Results obtained considering some parameters before treatment, after treatment and after followup

| Sl.no | Co-ordination Romberg's test | | | Finger nose test | | | Heel shin test | | | Sitting from lying down | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BT | AT | AF | BT | AT | AF | BT | AT | AF | BT | AT | AF |
| 1 | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 2 | 2 | 1 |
| 2 | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 2 | 1 | 0 |
| 3 | 0 | 1 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 2 | 2 | 1 |
| 4 | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 1 | 2 | 2 | 1 | 0 |
| 5 | 0 | 1 | 2 | 0 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 1 |
| 6 | 1 | 2 | 2 | 0 | 1 | 2 | 0 | 1 | 2 | 2 | 1 | 0 |
| 7 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 2 | 2 | 1 | 0 |

**Table 3** Results obtained considering some parameters before treatment, after treatment and after followup

| Sl.no | Standing from sitting | | | Loss of speech | | | Hand grip | | | Foot pressure | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | BT | AT | AF | BT | AT | AF | BT | AT | AF | BT | AT | AF |
| 1 | 2 | 1 | 0 | 4 | 2 | 1 | 3 | 2 | 1 | 2 | 1 | 0 |
| 2 | 2 | 1 | 0 | 3 | 1 | 0 | 3 | 2 | 1 | 2 | 1 | 0 |
| 3 | 2 | 1 | 0 | 3 | 2 | 1 | 3 | 2 | 1 | 2 | 1 | 0 |
| 4 | 2 | 1 | 0 | 2 | 1 | 0 | 3 | 2 | 1 | 2 | 1 | 0 |
| 5 | 2 | 1 | 0 | 2 | 1 | 0 | 2 | 2 | 1 | 2 | 1 | 0 |
| 6 | 1 | 1 | 0 | 2 | 1 | 0 | 3 | 1 | 0 | 1 | 1 | 0 |
| 7 | 2 | 1 | 0 | 2 | 2 | 1 | 3 | 2 | 1 | 2 | 1 | 0 |

**Table 4** Results obtained considering some parameters before treatment, after treatment and after followup

| Sl.no | Walking time | | | Paper holding in finger | | |
|---|---|---|---|---|---|---|
| | BT | AT | AF | BT | AT | AF |
| 1 | 4 | 3 | 1 | 0 | 1 | 2 |
| 2 | 4 | 3 | 1 | 0 | 1 | 2 |
| 3 | 4 | 2 | 0 | 0 | 1 | 2 |
| 4 | 4 | 3 | 0 | 0 | 1 | 2 |
| 5 | 3 | 1 | 0 | 0 | 1 | 2 |
| 6 | 3 | 1 | 0 | 0 | 1 | 2 |
| 7 | 4 | 2 | 1 | 0 | 1 | 2 |

BT- Before treatment, AT- After treatment, AF- After follow up

### Overall effect:-

The analysis was done statistically using IBM statistics SPSS version 20 software.

The results were compared using Wilcoxon signed ranks test. Test is significant at p<0.01.

**Table 5**Distributionon the basis of predominant*lakshana*

| *Lakshanas* | Number of patients | Percentage |
|---|---|---|
| *Karmakshaya* | 21 | 70% |
| *Karmahani* | 9 | 30% |
| *Vichetana* | 3 | 10% |
| *Vaksthamba* | 18 | 60% |
| *Sankocha* | 5 | 16.7% |
| *Sandubandhavimoksha* | 7 | 23.3% |
| *Ruja* | 22 | 73.7% |
| *Toda* | 3 | 10% |
| *Shotha* | 7 | 23.3% |

Overall effect of the treatment on romberg's test,heel shin test, finger nose test, sitting from lying down, standing from sitting, loss of speech, foot pressure, walking time and paper holding in finger has shown significant results. The treatment regarding improvement so higher prevalence for males than females, has males are more prone to the disease Maximum number of Hindu patients indicated dominant Hindu population in this region. As per our classics,thoseindulging in *atichinta* and *avyayama* are prone to *vataprakopa* and hence *vatavyadhi* like *pakshaghata*. Most of the patients were found belonging to *anupa desha* which clearly indicates that people dwelling here will be more prone to *vata* predominant other *dosha* associated *vyadhi*, also it indicates the predominance of *kaphanubandhi pakshaghata* in the selected patients. Only *dwirasa* intake make lead to Diabetes mellitus and Hypertension as a cause of above disease. Dietary habits suggest the *doshadushti*, which leads to *agnimandya* and may turn to *margavarodhajanya pakshaghata*, type of lesion was Infract stroke in this study. alcoholism, smoking and chewing may vitiate *vata* and *kapha Dosha* which may lead to Diabetes mellitus and Hypertension to be followed by *pakshaghata.* As observed in this study maximum number of patients belong to *vatakapha prakruti* which indicates that person with *vatakapha prakruti* are more prone to this disease. Maximum number of patients were having *madhyama satwa, madhyama sara, madhyama satmya, madhyama samhana, madhyama abhyavaranashakti, madhyama jaranashakti, avara vyayamapurvakalina and madhyama vyayama adhyatana.* This supports the fact that individuals having moderate and poor strength of the body and mind may be accompanied by the diseases like stroke. The other factors like *adyashana, ativyayama, diwaswapna* and *ratrijagarana* also suggests the *prakopa* of *vata* and *kapha*.

## DISCUSSION

During the age, 51-60 years, *prakopa of vata dosha* starts thus incidence of

*pakshaghata* is more in this age group as *pakshaghata* is one of the *vatavyadhi*. Predominance of male patient's observation correlates with modern tactual observation. The treatment has shown encouraging effect on functional deformity. As *pakshaghata* is one of the 80 *nanatmaja vataja vikara's* and *basti* is said to be the best for *vata dosha*, also classics explained *basti* as *ardhachikitsa.* So *basti* was selected as main line of treatment and has shown good results. *Acharya Sushrutha* has mentioned *yuktaratha basti* in his *niruhakramachikitsa adhyaya* and the ingredients of *yuktharatha basti* are *vatashamaka* in nature. The *yuktaratha basti* acts as *srotoshodhaka* by its properties. As infract stroke can be considered as *margavarodhajanya pakshaghata, yuktaratha basti* by its *srotoshodaka* properties removes the *avarana* and there by counteracting the pathology. In such diseased condition, it is important to improve the quality of life of the patient, and exactly this is done by the present study, as it has shown maximum result on sitting from lying down, standing from sitting, hand grip power, loss of speech, finger movement of hand toe, the reflexes like biceps, triceps, brachioradialis, knee and ankle which is criteria for assessment of the functional ability. So, by improving functional ability of the patient we can say that we have done a lot to patient's condition. Considering the deep-seated nature of disease, its chronicity, involvement of *marma,* longer duration of therapy is required. Here it is done *yoga basti* pattern but its mandatory to continue the treatment for few more sittings to get better results.

## CONCLUSION

Sitting from lying down, standing from sitting, hand grip power, loss of speech, finger movement of hand toe showed statistically significant results. The reflexes like biceps, triceps, brachioradialis, knee and ankle also showed statistically highly significant results. Finer movements restored very slowly and percentage of improvement is equal to that of gross movements.The above said facts shows the gravity of problem of stroke in India. Hence owing to the simple ingredients with high therapeutic efficacy stated in *chikitsa sthana* of *sushrutha samhita*, *yuktaratha basti* is selected for the study. It is a variety of *madhutailika basti*,having *vatahara* and *snehana guna*, because of the qualities this may be an appropriate remedy in *durbala* and *avirechya pakshaghata* patients.

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