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RESEARCH ARTICLE

TITLE OF PAPER: EVALUATION OF EFFICACY OF SHIROVASTHI IN THE MANAGEMENT OF PAKSHAGHATA: A PILOT STUDY.

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Abstract

Now a days the present day life is very fast, competitive so, patients also looking for immediate cure. Though number of techniques & remedies are available most of people prefers Ayurveda only for *Pakshaghata*. The term *Pakshaghata* denotes a specific variety of *Vatavyadhis* it is characterized by impairment of *sanghavaha* & *chestavaha* function. *Pakshaghata* is such a disease caused predominately by *Vata dosha* even though all the three doshas also take part besides its dushyas namely *siras*, *snayu*, *dhamani*, *sandhi* & *mamsa* resulting into this disease. since the *Shirovasthi* selected for clinical trial is possessing the qualities of antagonists to the *Pakshaghata*. *Shirovasthi* particular for *Pakshaghata* is indicated by *Sushruta*. The gunas of *Vatahara* taila directly reach site of lesion of *Pakshaghata* i.e., *Mastishka* by *shirovasthi*. Tailam used is *Dhanvantaram* Tailam which is unique remedy for vata vyadhi. Both *snehana* *swedana* is done simultaneously in *pakshaghata*. For this study 9 patients satisfying the selection criteria were randomly selected from the OPD & IPD of Panchakarma Department of Dr. B.R.K.R Govt. Ayurvedic College and Hospital, Erragadda, Hyderabad. The assessment of results was made on pre & post treatment data of subjective & objective parameters of clinical study signs and symptoms of *Pakshaghata* taken as subjective & objective parameters. Over all result of *shirovasthi* therapy is 78% in *Pakshaghata*. By Observations it is noted that on walking it has shown 70%, on lifting of arm at shoulder 94%, on lifting of leg at hip joint 83%, on loss of speech 76%, on finger movement 65% improvement seen. On Tendon reflexes 76% and on muscle power it has shown 85% improvement. Good improvement in 4 patients, moderate improvement in 5 patients, no poor improvement is seen during study so, hence it is concluded from the study that the *shirovasthi* is statically highly significant.

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Introduction:-

Stroke is a Non-communicable disease of increasing socioeconomic importance in ageing populations. According to WHO, Stroke was the second commonest cause of worldwide mortality in 1990 and, the third commonest cause of mortality in more developed countries. Stroke is also a major cause of long-term disability and, has potentially enormous emotional and socioeconomic consequences for patients, their families, and health services. We know that 50% of Indian population is above the age group of 50yr & one out of 10 suffer from *vata* and majority of them suffer from *pakshaghata*. The incidence of *Pakshaghata* is alarming. It occurs mostly as complication of diabetes mellitus, hypertension. Hemiplegia is the outcome of stroke and its parallel to *pakshaghata* in *Ayurveda*. Without movements human being is just like a lifeless statue. This is exactly what occurs in case of *Pakshaghata*. *Pakshaghata* is one of the 80 *vata* diseases, described in almost all ayurvedic literature. *Vata* is sole dosha for all the movements in the body and thus responsible for the disease. *Pakshaghata* is very common among *vata*'s. In Modern science it is treated with Anti thrombolytic, anti platelet drugs but success rate is very low; especially restoration of movements is difficult. *Shirovasthi* is best treatment to combat *vata*. Wherein Ayurvedic line of treatments are giving encouraging results.

Sushruta concept “*tatra prageve sneha svedopapannam mruduve sodhanena samshodhya anuvasya asthapyacha....Akshepaka vidhanana upacharat*. Here, we can see an elaborate description of different aspects of treatment along with routine type of treatment like *sneha sweda*, *mrudu virechana*. Sushruta mentions *bala taila*, *shirovasthi*, *anutaila*, *abhyanga*, *salvana sweda* as special treatment.

Aim & Objectives: - To assess the effect of *shirovasthi* in *pakshaghata*.

Materials and Methods:-

Study Design: It was an open, randomized, preliminary clinical study.

Source of data:-Patients are selected from OPD & IPD of Dr. B.R.K.R. Govt. Ayurvedic College & Hospital, Hyderabad. Having classical signs & symptoms of *Pakshaghata* as well as fulfilling inclusion & exclusion criteria.

Sample size: Total 9 patients completed the treatment schedule.

Inclusion Criteria: Patients diagnosed as suffering from *Pakshaghata*, based on classical signs and symptoms of *Pakshaghata* were included in the study.

Exclusion Criteria: Patients below age 30 and more than 70years and the patients who are having chronicity of disease more than 6yr are excluded from this study.

Assessment Criteria: A Special research proforma was prepared for the study incorporating all the relevant points from both ayurvedic and modern views. Some Subjective parameters like walking, lifting or arm at shoulder, lifting of leg at hip joint, loss of speech, finger movement and some Objective parameters like Tendon reflexes, muscle power test. Each parameter was given grading.

Showing Grading of Subjective Parameters:-

I. Walking:

- ❖ Bed ridden – 0
- ❖ Walks with assistant – 1
- ❖ Walks with stick wall – 2
- ❖ Walks with slight support – 3
- ❖ Walks without support – 4
- ❖ Walks with speed – 5

II. Lifting of arm at shoulder:

- ❖ No lifting -0
- ❖ Upto 45° - 1
- ❖ Upto 90° - 2
- ❖ Upto 135° - 3
- ❖ Upto 180° - 4

III. Lifting of leg at hip joint:

- ❖ No lifting -0
- ❖ Upto 45° - 1
- ❖ Upto 90° - 2

IV. Loss of Speech:

- ❖ Global aphasia -4
- ❖ Utter voice – 3
- ❖ Speak few words – 2
- ❖ Speak with difficulty – 1
- ❖ Normal – 0

V. Finger movement:

- ❖ No movement – 0
- ❖ Slight movement – 1
- ❖ Unable to hold the objects – 2
- ❖ Able to hold with less power – 3
- ❖ Normal – 4

Gradation of Objective parameters:-**I. Tendon reflexes:**

- ❖ Absent – 0
- ❖ Positive – 1
- ❖ Brisk – 2
- ❖ Very brisk – 3
- ❖ Clonus – 4

II. Muscle power grading:

- ❖ No contractions – 0
- ❖ Flicker or trace of contraction – 1
- ❖ Active movement with gravity elimination – 2
- ❖ Active movement against gravity – 3
- ❖ Active movement against gravity and resistance – 4
- ❖ Normal – 5

Grouping of the results of Subjective & Objective parameters were made as follows

% of relief of all symptoms is assessed below mentioned pattern.

- ❖ 0% - 25% - no relief
- ❖ 25% - 50 % - mild relief
- ❖ 50% - 75% -moderate relief
- ❖ 75%- 100%- marked relief.

Drugs under trial:-

- ❖ *Dhanvantaram* tailam
- ❖ *Shirovasthi* is a procedure in which the medicated oil is allowed to stay over the head for the prescribed time. It is one among the *moordhataila*. It is beneficial to do *Shirovasthi* after proper purificatory procedures. But in cases where *shodana* is not necessary it can be done directly.

Materials required:-

1. Rexin/leather (75 cm X 20 cm)- 1
2. Black gram flour - 200 g
3. Taila – 1.5 liters
4. Cotton ribbon (120 cm X 10 cm)- 2 strips, moderately tough, clean and dry
5. Spoon -1
6. Vessel (2 liters) -1

7. Large vessel- 1
8. Rasnadi choorna- 5 g
9. Oil for *abhyanga*- 100 ml
10. Soft towel- 2
11. Hot waterbath-1
12. Armed chair of knee-height- 1
13. Attendent-2

Pre operative procedure:-

Shave the head completely. Do generalized *abhyanga*. Keep cotton cloth in both ears to prevent the entry of oil in to the ear. Bowel and bladder should be emptied.

Procedure:-

- ❖ The patient should be properly seated in an armed chair. The strip of cloth smeared with the paste of black gram flour is to be wound round the head 2 cm above the eye brows.
- ❖ It should be tight enough to prevent leaking of the oil, but not causing any discomfort. The rexin or leather should be fixed over the strap and the junctions are sealed with black gram paste.
- ❖ Another layer of cloth strap smeared with the black gram paste is wrapped over this, sealing the junction of rexin and skin layer.
- ❖ The medicated *Dhanvantaram* tailam is warmed to just above body temperature and poured into the *vastiputaka* with a strip of cloth touching the scalp and oil being poured from the other end or a long piece of coconut leaflet held obliquely inside the *vastiputaka* 2 – 3cm above the scalp. The oil is filled up to a height of 2-3cm above the hair root. To maintain the temperature, some amount of oil should be replaced with warm oil at regular intervals.
- ❖ The procedure should continue till secretions through nose, throat and eyes are observed. In case of non attainment of these *lakshanas* the time should be fixed as 30 minutes for Kapha, 40 minutes for Pitta and 50 minutes for Vata.
- ❖ The patient should sit comfortably with eyes closed. Oil in *kharapaka* is preferred. Temperature of the oil should be just above body temperature.
- ❖ During procedure gentle massage to neck and shoulders should be done frequently. Movements of neck should be prevented.

Postoperative procedure:-

At the end of the procedure, a passage is made above the ear, to remove the oil. Oil over the head must be wiped out with a dry cloth, and *abhyanga* is done over head, shoulder, palms and soles. *Rasnadi choorna* is rubbed over the head. Take rest for one hour and then, patient should take bath with lukewarm water..

Duration: 7 -14 days

Quantity: 1.8litre

Results: -

Observations: - Registered 9 patients completed the treatment schedule successfully; All the patients were suffering from Ischemic stroke. Percentage of Incidence of age of 9 cases of *pakshaghata* is as 30-40yr age is 11%, 50-60yr age – 44%, 60-70yr age-22%, 70-80yr age – 11%, 80-90 yr age – 11% all were males. Among 9 Patients 7 were suffering from *vama pakshghata*, 2 were *dakshina pakshaghata*. During the study deviation of mouth is seen in one patient only. *Vakstambha* is seen in 2 patients. In study chronicity of *pakshaghata* within 1month, 6patients noted. 2 cases were 2 months duration, 1 case was 5yr of chronicity. *Roga arambha* among them history sudden onset are 8 patients. Stroke during day time are in 5 cases, 4 cases in night time. During *nidravastha* 2cases, *gamana vastha* 5 cases, *krodavastha* 2 cases. *samjanasa* during stroke is found in 3 cases. During this study it was found that 7 were hypertensive, diabetic 2cases. 3 cases had previous history of *pakshaghata* attack. 2 patients were found to have similar complaint among family members. In the study 5 patients were alcoholic, 6 were addiction of dhoomapana but later terminated the smoking.

Results were analyzed 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.

Sl.no	Walking		Lifting of arm at shoulder		Lifting of leg at hip joint		Loss of speech		Finger movement		Tendon reflex		Muscle power grading	
	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT	AT	BT
1	1	3	0	1	1	1	2	1	2	3	0	1	0	3
2	1	4	0	3	0	1	3	0	0	3	0	0	1	4
3	1	3	0	3	0	1	3	1	1	2	0	1	1	2
4	1	2	0	1	0	1	4	1	1	2	0	1	0	2
5	2	4	0	2	0	2	4	1	1	3	0	2	0	3
6	1	4	0	4	0	2	3	1	1	3	1	3	1	4
7	1	3	0	2	0	1	3	1	1	3	1	2	0	3
8	0	3	0	0	0	1	4	1	0	1	0	1	0	2
9	1	4	1	3	1	2	3	0	1	3	1	2	1	4

Overall effect:-

Over all result of *shirovasthi* therapy is 78% in Pakshaghata. By observations it is noted that on walking it has shown 70% on, lifting of arm at shoulder 94%, on lifting of leg at hip joint 83%, on loss of speech 76% , on finger movement 65% improvement seen .on Tendon reflexes 76% and on muscle power it has shown 85%improvement. Marked improvement in 7 patients , moderate improvement in 2 patients , no poor improvement is seen during study.

Discussion:-

Role of Poorvakarma: *Sneha sweda* accomplishes *mrudutva* at the site of origin of vata which facilitates restoration of vata to normalcy. The Absorption of swedas makes the *Mastishka* dhatu and *dhamanis* get softened causing alleviation of stabdhata & sosha resulting into *mastishka* dhamani vikara, as a result normal supply of rakta takes place to *Mastishka* making the restoration function of the *mastishka* dhatu.

Mode of Action Of Shiro Vasthi:-

The mode of action of shirovasthi depends on. Therapeutic effect of *shirovasthi*, Physical effect of *shirovasthi* and Application of heat. The scalp is formed by five layers, Skin, Connective tissue, Aponeurosis, Loose areolar layer and Pericrainium. The dense subcutaneous connective tissue has the richest cutaneous blood supply in the body. The base of medicine which is used for *shirovasthi* is in lipid form. The phospholipids of the cell membrane allows lipid soluble medications to pass through circulation which gives local and systemic therapeutic actions as vasodilatation will increase due to the temperature which is maintained during the course of entire treatment.

Since the scalp is supplied with rich blood circulation via branches of external carotid and internal carotid arteries and innervations is through sensory and motor nerves from ophthalmic divisions like Zygomaticotemporal nerve, Greater occipital nerve, Lesser occipital nerve, Auriculotemporal nerve, Supratrochlear nerve and Supraorbital nerve and rich lymphatic channels. The medicines which are used in *shirovasthi* will be having pharmacological actions like anti-inflammatory, antioxidants, anti depressants, neuropsychopharmacological effect, neuroprotective activity, antimicrobial properties, will show its Therapeutically actions when these enter in the circulation.

When an individual sits in a relaxed state for longer time, Tamasika Guna overcomes the Rajasika Guna. The procedure of *shirovasthi* brings the Sanjnavaha Srotas in peaceful state and in rest which helps in inducing sleep. The warm oil used for the *shirovasthi* sub sides Vata Dosha and quantity of Taila may increase the Kapha Dosha. It may also increase *Tamoguna* in the *Sirah Pradesha*. Hence it helps in inducing the sleep. *Shirovasthi* has been reported to be having an excellent result on such disorders as it gives strength to the central nervous system. It calms down both the mind and the senses which allow the body's natural healing mechanism to release stress from the nervous system by pacifying Vata dosha, particularly *Prana vayu*. *Shirovasthi* is a *snigdha sweda yukta* procedure i.e., it has dual benefits of both *Snehana* and *Swedana*. The temperature of the taila & ghrita in *shirovasthi*, leads to peripheral vasodilatation. This increases the peripheral circulation which nourishes the tissues, hastens phagocytosis and brings about regenerative changes. The neurotransmitters released during this period improve the afferent and efferent pathways and eventually the tonicity of muscles affected get improved.

During the age, 50-60 years, prakopa of vata dosha starts thus incidence of *pakshaghata* is more in this age group as *pakshaghata* is one of the *vata vyadhi*. Predominance of male patient's observation correlates with the modern textual observation regarding higher prevalence of male than females. Most of the patients were found labors. As per our classics, as these people are indulging in *ativyayama*, they are prone to *Vataprakopa* and hence *vata vyadhi* like *Pakshaghata*.

The Dominant site that is usually the Left side of the brain especially parietal & temporal lobes control more vital functions than the right. calculation, planned, movements, appreciation of size, shape, weight, texture are the function of dominant site of parietal lobe, speech, language, verbal memory are the special function of dominant temporal lobe. Any obstruction to the cerebral perfusion to these vital centers can give rise to ischemia & infraction.

Only Hypertension in 7 patients, only Diabetes in 2 patients, Both Hypertension and Diabetes are observed in 2 patients. Stroke may results from cerebral hemorrhage or cerebral infraction and is a common complication of hypertension and major cause of death in Hypertensive patients. The next risk factor after hypertension is Diabetes.

In the clinical study it is observed that, 5 patients were habituated to madyapana. Madya possess Kashaya, tikta, katu, amlaras, amla vipaka & laghu, ushna gunas with its katu, tikta, kashaya rasas & laghu gunas aggravates Vata; with its Amla, katu rasa, ushna, tikshna gunas it even aggravates pitta dosha. As Kashaya rasa adhika sevana is the specific nidana factor for *Pakshaghata*, it aggravates vata and incorporates *stambhana*, *lekshana*, *shoshana* and *kledopashoshana* gunas in the body. Hence becomes the causative factors for the disease. According to Modern system of medicine high alcohol intake is the risk factor for stroke. Cerebral haemorrhage, dementia, cerebellar degeneration etc., are the physical effects of alcohol abuse.

The Patients addicted to *Dhoomapana* were 6 in number. The *Dhoomapana* gunas are *Ushna*, *tikshna*, *ruksha*, *laghu* gunas. These gunas vitiate Vata and also Pitta. Smoking is the risk factor in stroke. It is responsible for Hypertension, M.I. These are the aetiological factor for stroke.

The Chronicity ranging more than 1 year not responded well for the therapy but wherein chronicity is less than 1-week patients had marked relief of symptoms. Hence it revealed that early onset of stroke cases had good improvement than older ones for treatment.

Conclusion:-

Shirovasthi is a type of *moordha* taila. Chronologically *sirovasthi*, *pichu*, *siroseka*, *siroabhyanga* are less potent each other in order. *Sirovasthi* particular for *Pakshaghata* in general for vata disorders is indicated by *sushruta*, after performing *sneha*, *sweda*. Tailam having *vatahara* property will be directly reaching the site of lesion of *pakshaghata*. Tailam used is *Dhanvantaram* tailam which is unique remedy for Vata vyadhi. *Pakshaghata* is such a disease caused predominately by vata dosha even though all the three doshas. *Sneha*, *sweda* karma will be very useful in *pakshaghata*. In *Shirovasthi* both *sneha*, *sweda* are done simultaneously.

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. An attempt had been made to study the effect of *Shirovasthi* in management of *Pakshaghata*. Approximately half of patients were recovered completely. Remaining half were left with persistent disability or deformity. The treatment has shown encouraging effect on functional deformity. Considering the deep seated nature of disease, its chronicity, involvement of main marma (*sira*), longer duration of therapy is required. Here it is mandatory to continue the treatment for few more sittings to get better results.

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