



## Research Article

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### CLINICAL EFFECT OF SHIRODHARA IN PAKSHAGHAT WITH SPECIAL REFERENCE TO CEREBRAL ISCHEMIC STROKE

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#### ABSTRACT

In modern Science management of stroke consisting of increasing the oxygen supply and glucose, reduction of cerebral oedema have its own importance. In Ayurveda Mastishkya Chikitsa or Murdhni taila has been indicated in Pakshaghat, Shirodhara is one of them. It alleviates aggravated Vayu particularly in the Dhamani supplying blood to the Shira. It was in the mind that Shirodhara may fulfill the requirements. This paper fully focused on clinical effect of shirodhara in Pakshaghat. Taking foresaid points into consideration study were carried out to evaluate the effect of Shirodhara in Pakshaghat with special reference to cerebral ischemic stroke. The various effects of therapy on gradation score of muscle power which is affected upper and lower limb were observed.

**Keywords:** Mastishkya Chikitsa, ischemic stroke, shirodhara

#### INTRODUCTION

Allen CMC et al., revealed that the diseases of the cerebral blood vessels are the third most common cause of death in the developed world and are responsible for large proportion of physical disability<sup>1</sup>. Dalal P.M., defined the stroke of rapid onset of focal neurological deficit, resulting from diseases of the cerebral vasculature and its contents. Cerebral vascular disease can cause death and disability by ischemia from occlusion of blood vessels producing cerebral ischemia and infarction or hemorrhage through their rupture. As stroke classified under three headings i.e. ischemic stroke, hemorrhagic stroke, stroke of undetermined origin<sup>2</sup>.

If for any reason the brain tissue is significantly deprived of its nutrition for more than three minutes cerebral infarction ensues. Such infarcts are either ischemic in thrombosis or hemorrhage as in embolism. There is complete or partial occlusion of cerebral microvasculature by thromboembolism. Acute focal stroke is characterized by the sudden appearances of a focal deficit of brain function most commonly hemiplegia with or without signs of focal cerebellar dysfunction.

In Ayurveda focal deficit of brain function can be studied under the heading of pakshaghat. "Paksha" means either side of body and "Ghat" means functional deficiency. Clinical symptoms of Pakshaghat are Akarmanyata (motor loss), alpa karmata (less movements), Vichetana Alpachetana (sensory loss), Ruja (pain), Vaksthambha (aphasia), Padsankocha (limb deformity) etc. Pakshaghat is difficult to treat. According to Ayurved pakshaghat is classified as Shuddha Vataj, Kapha Pittaj Sansrushtaja and Dhatukshayaja. Pakshaghat manifested because of Shuddha Vata is Kricchasadhya<sup>3,4</sup>. Gayadas commentary highlighted that Dhatukshayaja Pakshaghat caused by Rakta sruti is Asadhya while Pakshaghat because of Avarodha. Treatment of Pakshaghat comprises of Snehan svedan Mrudu Virechana Basti and Mastishkya Chikitsa. In some patients

Swedan and Sneha Virechana is advised by Charak. Mastishkya Chikitsa has by been indicated by Gayadas which includes Shirodhara Shirobasti Shiropichu Shiroplota<sup>5,6</sup>.

While going through modern text it is reviewed that the goals of therapy of ischemic stroke are to avoid development of cerebral infarction and if present already to prevent its progression and recurrence. The aim of treatment is to increased cerebral perfusion and reduced brain edema. For this various drugs mannitol dextran, pentoxifylline are used. But these drugs have limitations and no one drug can specifically stop infarction. These drugs while increasing cerebral perfusion chances of reducing blood volume to cerebral vasculature may be there.

Moreover this drug reduces cerebral oedema to certain extent. An aim of therapy of Shirodhara in patients of Pakshaghat because of ischaemia is to improved cerebral circulation and prevents further infarction as to improved quality of life and rehabilitation. Shirodhara is a process in which hot oil was continuously poured over forehead for about 45 minutes. During this process cotton pad was placed over both eyes to, prevent contact of hot oil with the eyes and were bandaged.

20 patients of Pakshaghat because of ischemic stroke were selected randomly.

Therefore it was thought in mind that Shirodhara might be helpful to increased cerebral perfusion. Thus pilot study was carried out in some patients of Pakshaghat treated by Shirodhara. Efficacy was encouraging.

Taking foresaid point into consideration study was planned to evaluate effect of Shirodhara in Pakshaghat because of ischaemic origin.

**Aims and objectives**

- To study the disease Pakshaghat from both Ayurvedic and modern point of view.
- To study the efficacy of Shirodhara in Pakshaghat.

**Ethical clearance Number:** SKRPAC&H/2366-A/2018, Dated 8/2/2018

**MATERIALS AND METHODS**

Twenty patients were selected randomly of both sexes with following criteria

**Inclusion Criteria**

- Patients of ischemic stroke
- Age 40-70 years old
- Both sexes were included.

**Exclusion Criteria**

- Patients of hemorrhagic stroke
- Age above 70 years
- 

**Criteria of Diagnosis (Chief complaints of Patients)**

- Hemiplegia (weakness in upper limb and lower limb)
- Aphasia or slurred speech
- Karmahani
- Vakpravritti

Some of diagnostic criteria mentioned in modern medicine were also considered as follows

- Muscle Power Grade
- Reflex Grade
- Confirmation of non-hemorrhagic stroke by C.T. scan of brain

**Criteria of Assessment**

**Muscle Power Grade**

- 0-No movement
- 1-Flikering movements
- 2-Moving according to gravity
- 3-Moving against gravity
- 4- Moving against gravity and against resistance but some degree of weakness
- 5-Normal powers

**Reflex Grade**

- 0-Absent
- 1-Present (as normal ankle jerk)
- 2-Brisk (as normal knee jerk)
- 3-Exagarrated
- 4-Clonus

**Power of Hand:** Was assessed as pressure on cuff of B.P. apparatus was put, and reading was measured as 40or 60mm of hg before and after treatment.

**Power of Foot:** Was assessed as pressure on weighing machine was put and reading was measured as 40kg or 20kg etc.

**Number of Patients:** 20

**Type of Study:** open randomized study

**Center:** Shri K. R. Pandav Ayurved College, Nagpur

**Treatment And Duration:** Shirodhara with til oil for 45 minutes for 14 days

**OBSERVATION AND RESULTS**

In this study entitled “Clinical effect Of Shirodhara in Pakshaghat with special reference to cerebral ischemic stroke” 20 patients of Pakshaghat were selected randomly irrespective of age sex religion socio-economic status. As advised by Sushruta “Mastishkya Chikitsa” as preferred. For that Shirodhara of sesame oil was administered for about 45 minutes to each patients of this study. Duration of treatment was for 14 days. All the patients were assessed before starting the treatment and the values recorded were termed as before treatment values; likewise after completion of treatment all the patients were assessed with respect to same parameters and were termed as after treatment values. Thus, observation and results were presented in the form of tables; from Table 1-8.

**Table 1: Age-Sex Religion wise distribution of 20 patients of Pakshaghat**

Sl. no.	Character	No. of patients	Percentage
1	Age		
	Balya	00	0%
	Tarun	00	0%
	Madhyam	11	55%
	Vridhdha	09	45%
2	Sex		
	Male	13	65 %
	Female	07	35%
3	Religion		
	Hindu	15	75%
	Muslim	04	20%
	Christian	01	05%

**Table 2: Educational status of 20 patients of Pakshaghat**

Sl. No	Educational status	No of patients	Percentage
1	Uneducated	07	35%
2	Educated	13	65%
	Primary	05	25%
	Secondary	02	10%
	H. secondary	02	10 %
	Graduate	04	20%

**Table 3: Economical status of 20 patients of Pakshaghat**

Sl. no	Status	No of patients	Percentage
1	Very poor	00	00%
2	Poor	4	20%
3	Middle class		
	Lower middle	16	80%
	Middle	00	00%
	Upper middle	00	00%
4	Rich	00	00%

**Table 4: Incidence of Illness 20 patients of Pakshaghat**

Sl. no	Incidence Of Illness	No of patients	Percentage
1	HTN	09	45%
2	HTN with DM	07	35%
3	HTN with IHD	01	5%
4	Not Specific	07	5%

Table 5: Food habits distribution of 20 patients of Pakshaghat

Sl. no	Habits related to food	No of patients	Percentage
1	Excessive intake of food		
	Madhur	00	00%
	Alma	09	45%
	Lavan	09	45%
	Katu	10	50%
	Tikta	20	100%
2	Kashaya	00	00%
	Type of food		
	Mixed	17	85%
	Vegetarian	03	15%

Table 6: Incidences of parikshya Bhava of 20 patients of Pakshaghat

Sl. no	Parikshya Bhava	No of patients	Percentage
1	Prakriti		
	Vat-pittaj	07	35%
	Pita-kaphaj	03	15%
2	Vat- kaphaj	10	50%
	Abhayavaharan Shakti		
	Pravar	06	20%
3	Madhyam	10	50%
	Avara	04	30%
	Jaranshakati		
3	Pravar	02	10%
	Madhyam	04	20%
	Avara	14	70%

Table 7: Incidences of Vyadhi Ghatak Bhava Involved in 20 patients of Pakshaghat

Sl. No	Physical Examination	Mean $\pm$ SD In Grades		Difference of Mean	SED	t	p
		B.T.	A.T				
1	MPG Of U/L	1.5 $\pm$ 1.39	3.0 $\pm$ 1.21	1.5 $\pm$ 1.57	0.36	4.166	<0.001
2	MPG Of L/L	1.9 $\pm$ 1.45	3.8 $\pm$ 1.05	1.9 $\pm$ 1.44	0.33	4.3636	<0.001

Table 8: Effect of Shirodhara on Some Physical Examination of 20 Patients of Pakshaghat

Sl. No.	Vyadhi Ghatak Bhava Involved	No of Patients	Percentage
<b>A</b>			
<b>Dosha</b>			
1	Vata Dominance	17	85%
2	Pitta Dominance	10	50%
3	Kapha Dominance	13	65%
<b>B</b>			
<b>Dhatu Involved</b>			
1	Rasa	15	75%
2	Rakta	15	75%
3	Mamsa	20	100%
4	Majja	17	85%
<b>C</b>			
<b>Strotas Involved</b>			
1	Annavaha	5	25%
2	Udakavaha	10	50%
3	Raktavaha	10	50%
4	Mamsavaha	17	85%
5	Medovaha	15	75%
6	Majjavaha	15	75%

Table 9: Effect of Shirodhara on Some Physical Examination of 20 Patients of Pakshaghat

Sl. No.	Physical examination	Mean $\pm$ SD		Difference of Mean	SED	t	P
		BT	AT				
1	Power of U/L in mm of Hg	46.5 $\pm$ 49.8	129 $\pm$ 57.18	82.5 $\pm$ 46.21	10.60	7.78	<0.001
2	Power Of L/L By Pressure on weight	15.5 $\pm$ 15.03	49.5 $\pm$ 12.76	34.0 $\pm$ 13.53	3.10	10.96	<0.001

BT: Before Treatment, AT: After Treatment

## DISCUSSION

In this study 20 patients of Pakshaghat because of ischemic origin were treated by Shirodhara daily in the morning for 14 days duration. Pakshaghat is one of the Vata Vyadhi which is curable because of Margavarodha. However according to Gayadas, Pakshaghat because of Dhatukshayaja particularly manifested due to excessive bleeding is Asadhya. Sushruta has mentioned that Snehana, svedan, Mridu Shodhana basti should be administered to alleviate pathophysiology of Pakshaghat. He specifically highlighted importance of Mastishkya Chikitsa in which according to Gayadas Shiro basti, pichu, plot, etc. indicated. According to Charaka Shirodhara which is included in Murdhni Taila has been indicated in Ardit. According to Charak one side of the body is paralyzed along with involvement of face

in Ardit. Thus, description of Ardit in Charaka is similar to description of Pakshaghat of Sushruta. Thus, both of Charak and Sushruta are of the opinion to administer Shirodhara in patients of o Pakshaghat.

According to modern science the main aim of the management is to increase the oxygen supply via perfusion and to reduce cerebral oedema. While going through the etiopathology of Pakshaghat quoted by Sushruta. Clearly implies that blood circulation carried by Vyana Vayu is at the defect because of aggregation of Vayu in Dhamani supplying the blood to the upper part of the body i.e. Shira. Due to deranged Vyana Vayu essential Prana Vayu cannot be supplied to the Indrias situated in Shira.

At this junction Shirodhara in which lukewarm oil was continuously poured on frontal head from about 18 inches of height with the help of dhara patra. Because of Sneha and ushna properties of tail it can be said conventionally that it might dilate the vascular bed of the brain. Thus, by using Shirodhara circulation might be enhanced. The patients included under the study exhibited some particular symptoms immediately after Shirodhara. Redness of eyes after 45 minutes of Shirodhara indicated increase in the blood circulation; which might be helpful to reduce cerebral oedema. Freshness and sound sleep after Shirodhara suggested Tarpan of Shira i.e. Majja Dhatu might be there. As well as very highly significant increase in gradation of MPG and muscle power indicated that higher center of Karmendriya situated in Shira might be functioning because of increase circulation.

To add above treatment comprising Sarvanga Abhyanga, Swedan might be helpful to minimize rigidity. As well as Sneha Virechana and basti may be helpful to remove the waste metabolic products from the body so that cerebral oedema might be reduced. It is point of interest to evaluate the effect of Sneha Virechana and basti with the help of ultra-modern techniques, so that improvement in oxygen supply and reduction in cerebral edema may be proved. This study may lead the guideline to the research workers and physicians so that purpose of mankind can be served.

#### CONCLUSION

It was the main motto to observe the effect of therapy on gradation score of muscle power of affected upper and lower limb. Before starting the treatment gradation score of MPG of upper limb was  $1.5 \pm 1.39$  which after 14 days of Shirodhara increased to  $3 \pm 1.21$ , this increase by  $1.5 \pm 1.57$  was very highly significant; as "t" was 4.166,  $p < 0.001$ . As well as very highly significant increase in MPG of lower limb was noted. (Table 8)

The effect of Shirodhara was recorded on power of upper limb in terms of mm hg of sphygmomanometer. Before starting the treatment mean power of upper limb was  $46.5 \pm 49.8$  mm of hg which after completion of treatment increase by  $82.5 \pm 46.2$  mm of hg. Increase in the power was very highly significant "t" was 7.7,

$p < 0.001$  (Table 9). In the same manner power of lower limb was assessed in terms of pressure on weight after treatment. It increases very highly significantly as shown in (Table 9).

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