



A PILOT CLINICAL STUDY TO EVALUATE THE EFFECT OF WET CUPPING IN THE MANAGEMENT OF GRIDHRASI

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ABSTRACT:

Introduction: In a developing country like India most of the working class population suffers from Low Back Pain. A large study reported an incidence of 28.0 episodes per 1000 persons per year and for low back pain with sciatica an incidence of 11.6 per 1000 persons per year. *Gridhrasi* is the most obstinate and prominent, one amongst the 80 types of *Vataja Nanatmaja Vyadhis* and is classified into *Vataja Gridhrasi* and *Vatakaphaja Gridhrasi*. The line of management includes *Basti Chikitsa*, *Agnikarma*, and *Raktamokshana*. As the principle of *Alabu*, *Shringa* or *Ghatyantra* are same as that of Hijama or Cupping therapy we can correlate cupping therapy as the modified form of *Raktamokshana* by *Alabu / Shringa*.

Objective: To understand the effect of Wet cupping therapy in management of *Gridhrasi*. **Methods:** A minimum of 10 patients were taken for the study and were assessed using parameters *Stambha*, *Ruk*, *Toda*, SLR & Visual numerical rating scale. **Intervention:** In the present study, patients having symptoms of *Gridhrasi* were treated by *Raktamokshana* using a specific instruments called AL-Hijama cups. **Results:** Significant changes were observed in all the patients on average of “p value” 0.01. **Discussion:** *Raktamokshana* reduces the Pain by removing *Avarodha* due to *Kapha*. It also removes *Avarana* of *Kapha Dosha* over *Vyana Vayu* and establishes normal blood circulation. **Conclusion:** When the regular treatment with *Shadvidhopakrama* fails to give any relief, then one should consider the involvement of *Rakta* in pathogenesis and is best treated by *Raktamokshana*.

Key words : *Sciatica*, *Gridhrasi*, *Raktamokshana*, AL- Hijama cups.

INTRODUCTION:

In a developing country like India most of the working class population suffers from Low Back Pain. 50 percent of the working population have back pain every year^[1]. A large study reported an incidence of 28.0 episodes per 1000 persons per year and for low back pain with sciatica an incidence of 11.6 per 1000 persons per year. Low back pain affects men a little more than women and is most frequent in the working population. According to national survey a prevalence of 10 million cases of *Gridhrasi* per year are recorded.

Gridhrasi^[2] is a painful condition in which the person can't sit and walk properly that hampers his normal activity. *Shoola* and *Chestahani* are the symptoms which make the patient to compromise his/her physical, psychological, social efficiencies.

Gridhrasi is the most obstinate and prominent, one amongst the 80 types of *Vataja Nanatmaja Vyadhis* and is classified into *Vataja Gridhrasi* and *Vatakaphaja Gridhrasi*. So the line of treatment adopted should be *Vataghna* or *Vata Kaphaghna* and be able to relieve the acute, severe symptoms.

The line of management includes *Basti Chikitsa*, *Agnikarma*, and *Raktamokshana*. *Vata* involvement is evident with or without *Kapha* due to pain and disability, *Snehana* and

Swedana Chikitsa are advised as a treatment^[3]. However, in *Gridhrasi*, as *Snayu* and *Rakta* are involved, *Agnikarma* and *Raktamokshana* are also choice of treatment.

The role of simple, safe, economical, and practicable *Ayurvedic* procedures such as *Raktamokshana* has been studied less in the management of *Vatavyadhi* such as *Gridhrasi*. *Acharya Sushruta* has also mentioned that diseases those are not relieved effectively by *Snehana*, *Lepanadi* therapeutic measures, *Raktamokshana* is a management to achieve better and earlier results.

Raktamokshana^[4] (blood-letting) by *Siravyadha* is considered to be the supreme as it drains out the vitiated *Rakta* and cures the disease. Classically it is described as six types^[5,6] i.e., (1) *Shringa*, (2) *Jalauka*, (3) *Alabu*, (4) *Shiravyadha*, (5) *Prachchhana* and (6) *Ghatiantra*. As the principal of *Alabu*, *Shringa* or *Ghatiantra* are same as that of *Hijama* or *Cupping* therapy we can correlate cupping therapy as the modified form of *Raktamokshana* by *Alabu/ Shringa*.

In *Chakradutta*, *Raktamokshana* is mentioned for treatment of *Gridhrasi*^[7]. *Chakradatta* has advised *Siravyadha* 4 inches below the *Indrabasti Marma* or in the middle of calf. In *Yogaratanakara* and *Bhaishajya Ratnavali Nidana*, *Lakshana* and *Chikitsa* of *Gridhrasi*^[8] is mentioned.

Cupping or Hijama is the procedure of making superficial incisions on the skin and applying cups to draw out blood, lymph or other fluids present subcutaneously. Typically, the cups were made of glass, but now disposable plastic cups are frequently used. In older days, cups made of bamboo, bone, horn, clay or metal were in use^[9].

In the present study, patients having symptoms of *Gridhrasi* were treated by *Raktamokshana* using a specific instruments called AL-Hijama cups.

MATERIALS & METHOD:

Source of Data Collection

Patient source:

Patients diagnosed as *Gridhrasi*/Sciatica were selected from OPD and IPD of DGM Ayurvedic Medical College and Hospital, GADAG.

Literary source:

Literary aspect of the study pertaining to *Gridhrasi*/sciatica and its treatment were collected from *Ayurvedic* and Modern texts, updated recent Medical Journals and relevant Websites.

Methods of Data Collection

Study design:

It is a pilot clinical study with pre-test and post-test design, where patients of either sex, diagnosed as *Gridhrasi* were taken.

A case proforma was specially designed and duly filled with all points pertaining to

history, signs, symptoms and examinations as mentioned in *Ayurvedic* classics and allied sciences to confirm the diagnosis. An informed consent was collected from all the patients included in study.

Study setting :

The study was conducted for a duration of 6 months.

Date of initiation: 13/11/2021

Date of completion: 02/04/2022

Sample size and sampling technique:

A minimum of 10 patients were taken for the study.

Diagnostic criteria:

- *Stambha, Ruk, Toda, Spandana* in *Sphik, Kati, Prishtha, Uru, Janu, Jangha* and *Paada*.
- Increase of pain on Coughing, sneezing and other sudden movements.
- Burning and tingling sensations in leg.

Inclusion criteria:

- Patients of either gender between 20-70 years.
- Patients diagnosed with *Gridhrasi*/Sciatica.
- Patients fit for *Raktamokshana*.

Exclusion criteria

- Patients below 20 years and above 70years.
- Patient who are contraindicated for *Raktamokshana*.
- Neoplastic/infective/traumatic conditions of the spine.
- Congenital deformities of spine.

- Chronic uncontrolled diabetes with complications like Peripheral neuropathy.
 - Patients with Cauda Equina Syndrome.
6. The patient was asked to point the highly affected area on *Sphik* or *Kati-Prishtha* by palpation.

Intervention:

A pilot clinical study was conducted on patients diagnosed with Sciatica/*Gridhrasi*.

Patients were treated with-

Cupping therapy, Al-Hijama therapy, a modified technique of *Raktamokshana* with *Alabu*.

Poorvakarma

Sambhara Sangraha: (Fig no 1)

1. Sterile cups
2. Sterile Needle
3. Vacuum gun
4. Sterile gauze and pads
5. Sterile gloves
6. Spirit

Preparation of Patient:

1. Patient was advised to pass all the natural urges .
2. The procedure was explained to the patient & consent was taken.
3. Patient was made comfortable and was asked to lie in prone position on the table.
4. Only the lumbo-sacral area was exposed.
5. The area was cleaned with water & spirit.

Pradhana Karma

1. On selected and disinfected area pricks were made with the help of 22 number needle which lead to pinpoint bleeding. (Fig no 2)
2. Then the glass cups were placed and vacuum was created using the vacuum gun, which raises the local area to form a bulge and oozing of the blood enhances. (Fig.no3)
3. It was kept in the same position till the blood clots. (Fig no 4)

Paschat Karma

1. The cups were removed by letting the valves. (Fig no 5)
2. The area was cleaned with spirit& wiped. (Fig no 6)
3. Patient was advised to take *Laghu*, *Ushna* and *Anabhishtyanda Ahara* like soft rice, rasam, moong khichdi.
4. At the site of prick, *Shatadhouta Ghrita* was applied.
5. Patient was advised to avoid strenuous activities which may cause pressure on the low back region like bike riding, running, lifting heavy objects etc.



Fig no 1: Showing Sambaara sangraha



Fig no2: Showing 1st step of Pradhanakarma



Fig no 3: Showing 2nd step of Pradhanakarma



Fig no 4: Showing 3rd step of Pradhanakarma



Fig no 5: Showing 1st step of Paschatkarma



Fig no 6: Showing 2nd step of Paschatkarma

OBSERVATION & RESULTS

Symptoms before the treatment and after the treatment are assessed based on the following criteria.

Assessment Criteria

Patients will be evaluated before and after the intervention and on follow up after the treatment that is on the 0th, 1st & 8thday of the

study on the basis of subjective and objective parameters.

Subjective Parameters:

SI No	Parameter	Grade	Symptoms
	Ruk	Grade 0	No pain
		Grade 1	Trivial pain

		Grade 2	Mild pain
		Grade 3	Moderate pain
		Grade 4	Severe pain
	Stambha	Grade 0	No stiffness
		Grade 1	With up to 25% impairment in the range of movement of joints. Patient can perform routine work without and difficulty.
		Grade 2	With up to 25% impairment in the range of movement of joints. Patient can perform routine work with difficulty.
		Grade 3	With up to 50-75% impairment in the range of movement of Joints & can perform routine work with moderate difficulty.
		Grade 4	With more than 75% impairment in the range of movement of joints. Patient totally unable to perform routine work.
	Toda	Grade 0	Absent
		Grade 1	Mild / occasionally
		Grade 2	Moderate / daily frequent, not persistent
		Grade 3	Moderate / daily frequent & persistent
		Grade 4	Severe & persistent

Objective Parameters:

1. SLR Test

Grades	Range of movement
Grade 0	75-90 degree
Grade 1	60-75 degree
Grade 2	45-60 degree
Grade 3	30-45 degree
Grade 4	15-30 degree

Grade 5	5 degree
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2. Visual Numerical Rating

SL No.	Grades	Symptoms
1.	Grade 0	Tenderness No tenderness
	Grade 1	Pain on touch
	Grade 2	Pain on touch & winces
	Grade 3	Withdraws the part
	Grade 4	Not allow to touch the part
2.		Restricted movement of Lumbar
		Forward Flexion
	Grade 0	Able to touch the ground
	Grade 1	Able to go up to ankle
	Grade 2	Able to go just below knee
	Grade 3	Not up to the Knee
		Extension
	Grade 0	Able to do without difficulty
	Grade 1	Able to do with pain
	Grade 2	Cannot able to do
		Lateral Flexion Right side
	Grade 0	Able to go below knee without difficult
	Grade 1	Able to go below knee with pain
	Grade 2	Cannot go below knee
	Grade 3	No movement
		Lateral Flexion Left side
	Grade 0	Able to go below knee difficulty
	Grade 1	Able to go below knee with pain
	Grade 2	Cannot go below knee
	Grade 3	No movement
3.		Functional assessment – Walking time
		<u>Walking time to cover 21 meters of distance</u>
	Grade 0	Up to 20 seconds
	Grade 1	21-30 seconds

	Grade 2	31-40 seconds
	Grade 3	41- 50 seconds
	Grade 4	51-60 seconds
4.	Visual analogue Scale	
	Grade 0	No pain
	Grade 1	Mild Pain
	Grade 2	Moderate pain
	Grade 3	Severe pain

Duration of study

- Raktamokshana - 1 day
- Follow up - 8 days
- Total duration of study - 8 days

Statistical Test:

The ordinal data was evaluated using "WILCOXONS SIGN RANK TEST".

Observations:

Out of 10 patients 90% patients were male and 10% were female; 10% of patients were in the age group 30-35years, 30% in 36-40years, 20% in 46-50years, 10% in 51-55years, 10% in 56-60years and 20% in 61-65years of age; 80% patients were married and 20% were unmarried; 40% were Vegetarian & 60% were of mixed diet ; 70% patients were having the history of active lifestyle, 10% of sedentary and 20% of labour ;

80% were *Vata-Pitta Prakruthi*; 90% were *Madhyama Koshta*.

70% patients got positive Flip test; lowbackache radiating to lower limb & positive SLR were found in all the patients (100%); Tenderness in the low back region was found in 100% of the patients.

In the present study in all the 10 patients the bleeding stopped on its own and all 10 patients observed lightness, reduction in stiffness and pain after blood started to ooze. The very next day 60% of patients observed relief of pain and stiffness.

Table no 1: showing statistical table of BT-AT

Results:

Parameter	Sum of the ranks	Mean of the ranks	Mean difference	SD	Z value	P value	Remarks
Stamba	36	18	3.12	7.14	2.52	0.005	S
Ruk	45	22.5	0.78	8.44	2.66	0.003	S
Toda	28	14	1.71	5.91	2.36	0.009	S

SLR	Right	36	18	2.5	7.14	2.52	0.005	S
	Left	15	7.5	2.2	3.70	2.02	0.043	S
Visual numerical rating scale		55	27.5	9.8	9.81	2.80	0.0051	S

Statistical interpretation of BT-AT

1. There is significant difference in the condition of the patient B.T & A.T for all the parameters at 5% L.O.S. with mean 'p' value 0.06.

Table no 2: Showing Statistical table of BT-AF

Parameter		Sum of the ranks	Mean of the ranks	Mean difference	SD	Z value	P value	Remarks
Stamba		55	27.5	9.8	9.81	2.80	0.0051	S
Ruk		55	27.5	9.8	9.81	2.80	0.0051	S
Toda		28	14	1.71	5.91	2.36	0.009	S
SLR	Right	36	18	2.5	7.14	2.52	0.005	S
	Left	15	7.5	2.2	3.70	2.02	0.043	S
Visual numerical rating scale		55	27.5	9.8	9.81	2.80	0.0051	S

Statistical interpretation of BT-AF There is significant difference in the condition of the patient B.T & A.F for all the parameters at 5% L.O.S. with mean 'p' value 0.012.

DISCUSSION:

In *Gridhrasi*, the main affected area was *Sphik & Kati*. *Acharya Charaka* has described *Siravyadha* in the management of *Gridhrasi*. *Acharya Sushruta* has mentioned that diseases which are not relieved by *Snehana*, *Lepanadi* therapeutic measures can be treated with *Siravyadha*. *Raktamokshana* is also accepted as *Ardha Chikitsa* in *Shalya*

Tantra as like *Basti* in *Kayachikitsa*. In *Panchakarma Chikitsa*, the vitiated *Doshas* are removed while in *Raktamokshana* vitiated *Rakta Dhatu* is expelled. *Dushita Rakta* should be let out to remove *Avarana*.

The *Samyak Siravyadha Laxanas* are *Laghavam & Vedanashanti*. In the present study in all the patients the bleeding stopped on its own and all 10 patients observed lightness, reduction in stiffness and also pain was subsided immediately after blood started to ooze.

Raktamokshana using *Alabu* is considered as a type of *Anu Shashtra Vidhi* in which vacuum is created to drain the *Dushita Rakta* from the side using *Alabu* i.e, Bottle guard. The *Gunas* of *Alabu* are *Katu*, *Ruksha* and *Teekshna*. The size 1 Al-Hijama cups are of similar size and the area covered during the procedure may be same. The concept of creating vacuum after pricks on a particular site to drain out the blood is the same base for both the procedures. So, Wet cupping therapy can be correlated with *Raktamokshana* using *Alabu*.

Mode of Action:

Raktamokshana with Modified *Alabu Yantra* is effective in *Gridhrasi* to relieve Pain and stiffness of the lower back & to improve in extension & forward flexion of lumbar joints having the origin of *Margavarana Janya Samprapti*. It reduces the Pain by removing *Avarodha* due to *Kapha*. It also removes *Avarana* of *Kapha Dosha* over *Vyana Vayu* and establishes normal blood circulation. It helps to develop proper blood flow and nutrition to the tissues & structures nearby, which rejuvenates the structures and rehabilitates the movement.

Application of modified *Alabu Yantra* in *Dhatukshaya Janya Samprapti* (pathology of tissue degeneration) removes *Vata* vitiated blood from localized circulatory pathways (micro-vascular structures) and resumes

adequate fresh blood flow that results in normal joint function and reduces the symptoms.

The vitiated blood may have different biochemistry than normal. The blood in the area due to pathology change its chemistry and hence is surfacing the area which in turn increase its tension. So when the instrumental or non instrumental blood letting is done only that content of blood is let out. So we can consider that *Dushita Rakta* has been removed. After the removal, fresh oxygenated blood is circulated in that area and hence pain is reduced.

The mechanism is unclear but as cupping affects these neurotransmitters it can only be assumed that pain is reduced in this way. Conversely, where along the pain pathways cupping works, whether it is lower down in the spinal cord or higher up in the limbic cortex, is still unknown so further investigations are needed to identify this (cited by Ahmed et al., 2005)^[10].

Moreover, as cupping blood has a different composition of blood to venous blood (Bilal et al., 2011) there may be an effect on the haematological system. One idea could be that it regulates coagulation and anti-coagulation by reducing fibrinogen or as it reduces the haematocrit it is theorised that

there is an increase in blood flow and oxygen to the organs (Ahmadi et al., 2008)^[11].

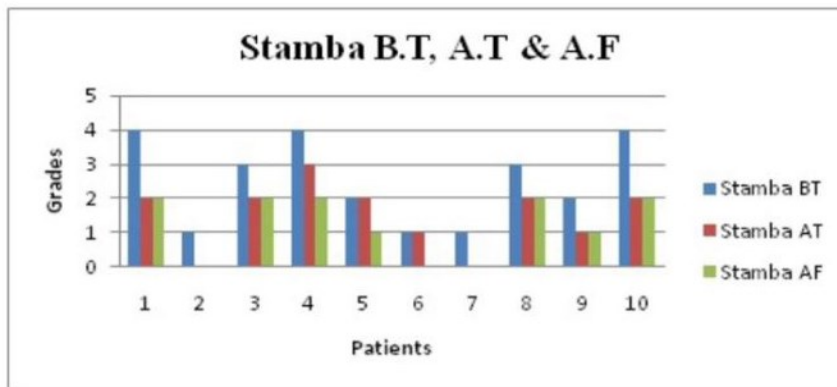
CONCLUSION:

When the regular treatment with *Shadvidhopakrama* fails to give any relief, then one should consider the involvement of *Rakta* in pathogenesis and is best treated by *Raktamokshana*. *Raktamokshana* may be defined as a technique of controlled blood letting and comes under the *Shodhana* spectrum of treatment to eradicate the diseases of *Rakta* as well as to purify the *Dhatu*^[12].

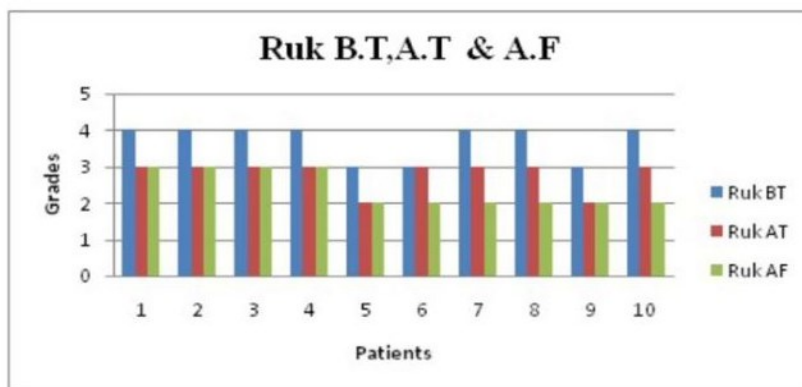
The Al-Hijama cups can be considered as the modified technique of *Alabu*. *Raktamokshana* is considered to be best in the management of pain. Cupping therapy gives instant relief from pain and also is cost effective. The proper conduction of the procedure is easy and it is Minimal invasive technique. In the present study, the management of pain and stiffness was successfully done even after 15days of the procedure and considerable changes were seen in SLR test.

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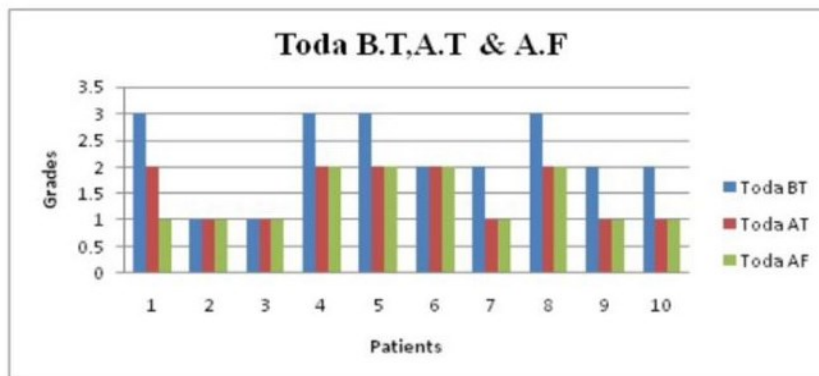
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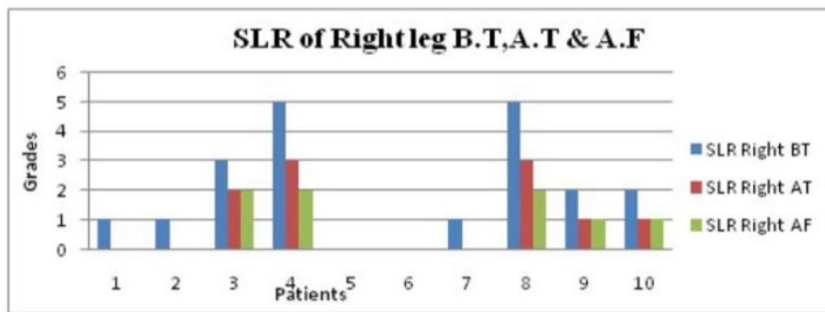
Graph no 1 : Showing subjective parameter Stamba BT,AT,AF



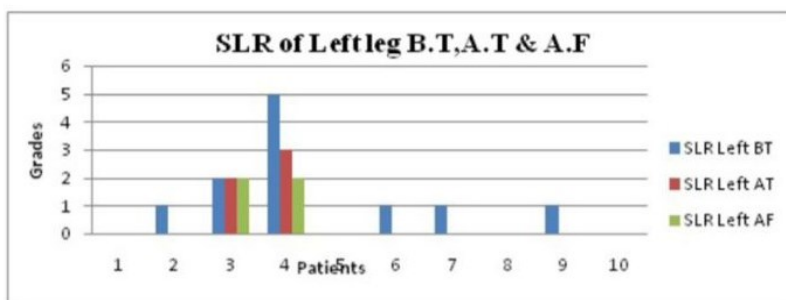
Graph no 2 : Showing subjective parameter Ruk BT,AT,AF



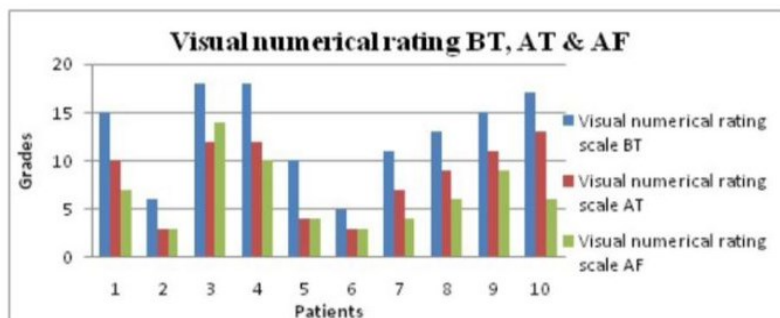
Graph no 3 : Showing subjective parameter Toda BT,AT,AF



Graph no 4 : Showing objective parameter SLR Test Right leg BT,AT,AF



Graph no 5 : Showing objective parameter SLR Test Left leg BT,AT,AF



Graph no 6 : Showing objective parameter Visual Numerical Rating Scale BT,AT,AF

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