

Clinical Research

A comparative study of *Agni karma* with *Lauha*, *Tamra* and *Panchadhatu Shalakas* in *Gridhrasi* (*Sciatica*)

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Abstract

Sushruta has mentioned different methods of management of diseases, such as *Bheshaja karma*, *Kshara Karma*, *Agni karma*, *Shastrakarma* and *Raktamokshana*. The approach of *Agni karma* has been mentioned in the context of diseases like *Arsha*, *Arbuda*, *Bhagandar*, *Sira*, *Snayu*, *Asthi*, *Sandhigata Vata Vikaras* and *Gridhrasi*. *Gridhrasi* is seen as a panic condition in the society as it is one of the burning problems, especially in the life of daily laborers. It is characterized by distinct pain starting from *Sphik Pradesha* (gluteal region) and goes down toward the *Parshni Pratyanguli* (foot region) of the affected side of leg. On the basis of symptomatology, *Gridhrasi* may be simulated with the disease sciatica in modern parlance. In modern medicine, the disease sciatica is managed only with potent analgesics or some sort of surgical interventions which have their own limitations and adverse effects, whereas in *Ayurveda*, various treatment modalities like *Siravedha*, *Agni karma*, *Basti Chikitsa* and palliative medicines are used successfully. Among these, *Agni karma* procedure seems to be more effective by providing timely relief. *Shalakas* for *Agni karma*, made up of different *Dhatus* like gold, silver, copper, iron, etc. for different stages of the disease conditions, have been proposed. In the present work, a comparative study of *Agni karma* by using iron, copper and previously studied *Panchadhatu Shalaka* in *Gridhrasi* has been conducted. A total of 22 patients were treated in three groups. Result of the entire study showed that *Agni karma* by *Panchadhatu Shalaka* provided better result in combating the symptoms, especially *Ruka* and *Tandra*, while *Lauhadhatu Shalaka* gave better results in combating symptoms of *Spanadana* and *Gaurava*. In the meantime, *Tamradhatu Shalaka* provided better effect in controlling symptoms like *Toda*, *Stambha* and *Aruchi*. Fifty percent patients in *Panchadhatu Shalaka* (Group A) were completely relieved. In *Lauhadhatu Shalaka* (Group B), the success rate was 00.00%, and in *Tamradhatu Shalaka* (Group C), the percentage of success rate was 14.28%. After analyzing the data, *Tamradhatu Shalaka* was found to be more effective than *Lauha* and *Panchadhatu Shalakas*.

Key words: *Agni karma*, *Gridhrasi*, *Panchadhatu Shalaka*, *Parshni Pratyanguli*, *Sciatica*.

Introduction

Shalyatantra is one of the eminent branches of *Ayurveda*, which consists of major therapies like *Bheshaja karma*, *Kshara Karma*, *Agni karma*, *Shastra karma* and *Raktamokshana*. *Agni karma* is superior among all of them and has proved to be a boon where local involvement of *Vata* and *Kapha doshas* are observed in the disease. *Agni karma* is indicated in many critical diseases like *Arsha*, *Arbuda*, *Bhagandara*, *Apachi*, *Antravridhi*,^[1] *Gridhrasi*, etc. and in many other disorders of *Sira*, *Snayu*, *Asthi* and also

in *Sandhigata Vata Prakopa*.^[2] *Gridhrasi* is one of the most agonizing disorders characterized by its distinct feature of severe pain starting from *Sphika Pradesha* (gluteal region) and radiating toward the *Parshni* and *Pratyanguli* (ankle joint and foot) of the affected side of leg.^[3] The *Gridhrasi* may be simulated with sciatica in modern parlance on the basis of its signs and symptoms, which occurs owing to involvement of spinal nerves. *Gridhrasi* is an affliction, which carries greater threat to life but interferes in daily routine by its consistent pain. The person who suffers from this disease is partially handicapped, as the patient may not be able to walk, stand or sit comfortably due to his constant attention to the painful limb.

The incidence rate of this disease is significant as more than three quarters of the world's population experience low back pain at some or other time during their course of life and it is the most common cause of sickness which results in absence from work. In

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UK, approximately 10% of people are suffering from the episodes of low back pain annually and consult their family physician. It is also a major cause of illness among the working population in a developing country like India. Lack of job satisfaction, depression, obesity, smoking, alcohol and socioeconomic deprivation have also been found responsible for it.^[4] This is the most common disorder which affects the movement of legs, particularly in most productive period of life, with low back pain, out of which 40% of persons have radicular pain and this comes under the umbrella of Sciatica syndrome.

Pain is the predominant symptom of *Gridhrasi*, which disturbs the normal routine of the patient. It is a classical fact that this pain is effectively relieved by the *Agni karma*. The diseases treated with *Agni karma* do not recur^[5] and there is no fear of putrefaction and bleeding, and ultimately it produces balancing effect on vitiated *Vata Dosha*. To perform this procedure, many *Dahana Upkaranas* (devices) like *Pippali*, *Ajashakrit*, *Godant*, *Shara*, *Shalaka*, *Jambavoshtha*, *Madhu*, *Guda*, *Sneha* and different types of metals are used.^[6]

In its counterpart, the management by modern medicine for this condition is by conservative treatments like rest, immobilization, and use of analgesics, anti-inflammatory drugs, physiotherapy or surgical in later course of the disease. If the pain and neurological defects do not subside on prolonged conservative treatment, finally surgery is considered, which is not a right choice as it leads to complications like limping, recurrence, permanent loss of working capabilities, etc.

As the conservative treatment with drugs has to be continued regularly for prolonged period, a need-based research for safer drugs and a procedure with better efficacy is required. Many works have been already carried out in *Shamana Chikitsa* which derived limited benefits, whereas *Agni karma*, an Ayurvedic parasurgical procedure has provided marked improvement in *Gridhrasi*.

In this study, the role of *Agni karma* has been studied with different *Shalakas* of *Lauha*, *Tamra* and *Panchadhatu* and the study has been carried out to find out the one with better efficacy among these devices.

Aims and objectives

The aim of the present study was to study the comparative effect of *Agni karma* by *Lauha*, *Tamra* and *Panchadhatu Shalakas* in *Gridhrasi* (sciatica).

Materials and Methods

A total of 29 patients suffering from salient features of *Gridhrasi*, attending the OPD and IPD of I.P.G.T. & R.A., G.A.U., Jamnagar Hospital, were registered randomly, irrespective of their age, sex, religion, caste, occupation, etc. The patients were diagnosed on the basis of sign and symptoms as per specially prepared proforma.

Tamra Shalaka, *Lauha Shalaka* and *Panchadhatu Shalaka* were used for *Agni karma* in different groups.

Components of Panchadhatu Shalaka

Tamra (copper) → 40%

Loha (iron) → 30%

Yashada (zinc) → 10%

Rajata (silver) → 10%

Vanga (tin) → 10%

Clinical study

The patients were divided into following three groups as follows:

Group A: *Agni karma* done by *Panchadhatu Shalaka* (8 patients)

Group B: *Agni karma* done by *Lauhadhatu* (iron) *Shalaka* (7 patients)

Group C: *Agni karma* done by using *Tamradhatu Shalaka* (7 patients)

Inclusion criteria

Patients suffering from the cardinal features of the *Gridhrasi* were selected, irrespective of their sex.

Exclusion criteria

The patients associated with the following conditions were excluded from the study:

- diabetes mellitus
- tuberculosis (TB)
- Ca of lumbosacral (LS) plexus
- Ca of cauda equina
- pregnancy
- anemia
- leprosy

Agni karma Vidhi

Purva karma

- Patient was advised to take *Snigdha* and *Pichchhila* diet on the day of *Agni karma*.
- Informed consent of the patient was taken.
- The local part of the patient was painted with *Triphala Kwatha*.

Pradhana karma

- At the site of *Antara-Kandara-Gulpha-Madhya* (popliteal fossa and at the level of sciatic notch), 15–30 *Bindu* (*Bindu* type) of *Samyak Dagdha Vrana* were made.
- $\frac{1}{2}$ *Angul* (approx. 1 cm) space between two *Samyak Dagdhas* was maintained.

Pashchat karma

- Gel of *Ghridakumari* on *Samyak Dagdha Vrana* was applied to get rid of instant burning sensation.
- Dusting of *Yashtimadhu Churna* was done on *Samyak Dagdha Vrana* and it was covered with a sterilized gauze piece.

Frequency of Agni karma

A total of six sittings of *Agni karma* were done with a gap of 7 days between two subsequent sittings.

Follow-up

Follow up was done up to 1 month period.

Criteria for assessment of pain

The assessment was done chiefly on the basis of relief found in the cardinal signs and symptoms of the disease. To assess the effect of therapy on objective parameters, all the signs and symptoms were given a number for scoring, depending upon their severity, ranging from 0 to 3.

Criteria for assessing the total effect

- Cured: More than 75% relief in the complaints of patient
- Marked improvement: 50–75% relief in the complaints of patient
- Improvement: 25–50% relief in the complaints of patient
- Unchanged: Up to 25% relief in the complaints of the patients

Results and Observations

It was observed that maximum number of patients (51.72%) belonged to the age group of 40–60 years and 58.62% patients were females. In this study, it was noted that 96.55% patients were married and 86.20% patients were from middle economic class, 48.27% patients were housewives and 86.2% patients were from urban areas. Maximum 79.31% had reported sound sleep and 37.93% were having more than 2 years history of the disease. Maximum patients (96.55%) were of *Vata Kaphaja Prakriti*, and 51.16% patients were having *Krura Koshtha*. Also, 55.17% patients were of *Madhyama Satva*, and 58.62% patients were of *Madhyama Vyayama Shakti*. Maximum patients were of *Aanoopa Desha*, i.e., 86.20%. On evaluation of *Nidana* factors, it was revealed that 82.75% patients were having *Katu Dravya atisevana*. *Diwaswapna* was found in 100% of patients. Maximum patients, i.e., 51.72% were suffering from *Chinta*. History of *Abhighata* (trauma) was found in 10.34% of the patients only. *Ruka* (pain in sciatica nerve distribution), SLR (Straight Leg Raising) test positive and tenderness at sciatic notch were found in all the patients.

Effect of Agni karma in Group A (Panchadhatu Shalaka)

A relief of 71.42% from *Ruka* symptom was seen, and 56.25%

relief was observed in SLR test which was statistically highly significant. In *Gaurava*, 71.42% relief was found which was significant statistically. Also, 60% relief in *Toda*, 50% relief in *Stambha*, 66.66% in *Spandana* and 33.33% relief in *Aruchi* were observed, which was statistically insignificant [Table 1].

Effect of Agni karma in Group B (Lauhadhatu Shalaka)

A relief of 68.75% from *Ruka* symptom, 100% relief in *Spandana* and 100% relief in *Aruchi* was found. In *Toda*, 50% relief was found; in *Stambha* and *Tandra*, no relief was found. In SLR (Straight Leg Raising) test, 31.25% relief was found which was statistically significant. In *Gaurava*, 80% relief was observed which is considered statistically insignificant [Table 2].

Effect of Agni karma in Group C (Tamradhatu Shalaka)

A relief of 66.66% in *Ruka* symptom and 31.25% in SLR test were found and were highly significant statistically. In *Toda*, 100% relief was found. Also, 66.66% relief in *Stambha* symptom, 50% relief in *Aruchi* and 28.57% relief in *Gaurava* symptom were found, which were statistically insignificant [Table 3].

The comparison statement of the study showed in table 4 and 5 that *Tamradhatu Shalaka* provided better result in all aspects of signs and symptomatology of *Gridhrasi* in contrast to the other two *Shalakas*.

Post-Agni karma Vrana

The mild wound scar formed by *Agni karma Shalaka* completely healed within a week and the scar disappeared within 2 weeks of post-Agni karma period.

Table 1: Effect of Panchadhatu Shalaka (Group A; n = 8)

Symptoms	n	Mean score		(%) Relief	SD	SE	t	P
		BT	AT					
<i>Ruka</i>	8	2.65	0.75	71.42	0.64	0.22	8.27	<0.001
<i>Toda</i>	4	1.25	0.5	60	0.5	0.25	3	>0.05
<i>Stambha</i>	3	1.33	0.66	50	0.57	0.33	2	>0.05
<i>Spandan</i>	4	1.5	0.5	66.66	0.81	0.44	2.44	>0.05
<i>Aruchi</i>	2	1.5	1	33.33	0.70	0.5	1	>0.05
<i>Tandra</i>	2	1.5	1	33.33	0.70	0.5	1	>0.05
<i>Gaurava</i>	4	0.75	0.5	71.42	0.5	0.25	5	<0.05
<i>SLR</i>	8	2.28	1	56.25	0.48	0.18	6.9	<0.001

Table 2: Effect of Lauhadhatu Shalaka (Group B; n = 7)

Symptoms	n	Mean score		(%) Relief	SD	SE	t	P
		BT	AT					
<i>Ruka</i>	7	2.28	0.71	68.75	0.54	0.20	7.59	<0.001
<i>Toda</i>	2	02	01	50	00	00	—	—
<i>Stambha</i>	6	1.16	1.16	00.00	0.44	0.18	0.91	>0.05
<i>Spandana</i>	1	02	00	100	—	—	—	—
<i>Aruchi</i>	3	1.66	00	100	00	00	—	—
<i>Tandra</i>	2	01	01	00	—	—	—	—
<i>Gaurava</i>	3	1.66	0.33	80	0.70	0.40	3.26	>0.05
<i>SLR</i>	7	2.28	1.57	31.25	0.51	0.19	3.65	<0.05

BT-Before Treatment; AT-After treatment

Table 3: Effect of Tamradhatu Shalaka (Group C; n = 7)

Symptoms	n	Mean score		(%) Relief	SD	SE	t	P
		BT	AT					
Ruka	7	2.14	0.71	66.66	0.53	0.20	7.07	<0.001
Toda	2	01	00	100	00	00	—	—
Stambha	2	1.5	0.5	66.66	00	00	—	—
Spandan	0	—	—	—	—	—	—	—
Aruchi	3	1.33	0.66	50	0.57	0.33	02	>0.05
Tandra	—	—	—	—	—	—	—	—
Gaurava	4	1.75	1.25	28.57	0.57	0.28	1.73	>0.05
SLR	7	2.28	1.57	31.25	0.48	0.18	3.87	<0.01

BT: Before Treatment; AT: After Treatment

Table 4: Comparative result of three Shalakas (Groups A, B, C)

Signs and symptoms	Group A (%)	Group B (%)	Group C (%)
Ruka	71.42	68.75	66.66
Toda	60	50	100
Stambha	50	14.28	66.66
Spandana	66.66	100	—
Aruchi	33.33	100	50
Tandra	33.33	00	—
Gaurava	71.42	80	28.57
SLR	56.25	31.25	31.25

Table 5: Overall effect of the therapy

Effect of therapy	No. of patients		
	Group A [n (%)]	Group B [n (%)]	Group C [n (%)]
Unchanged	0 (00)	0 (00)	1 (14.28)
Marked improvement	2 (25)	4 (57.14)	4 (57.14)
Improvement	2 (25)	3 (42.85)	1 (14.28)
Cured	4 (50)	0 (00)	1 (14.28)

Discussion

Highest incidence of the disease was reported in age group of 40–60 years, which is *Vata Prakopaka Kala*. According to modern science there is a progressive decrease in the degree of hydration of the intervertebral disk with age, which leads to the cycle of degeneration process, resulting in disk problems and causing *Gridhrasi* (sciatica). Higher incidence was observed in females, probably because of the fact that they do not take proper care of the spine while doing more strenuous works like lifting weights, bending, sitting and sustained non-neutral postures which predisposed them to sciatica. Geographic proportion of Hindus in the city might be a reason for its higher incidence in Hindu community. Majority of the patients reported sound sleep which might be due to the relief in lying position. Maximum percentage of more than 2 years of chronicity showed inadequate attention toward their health. Maximum patients were having *Krura Koshttha* which reflects

the role of *Agnimandya* and constipation in the pathogenesis of *Gridhrasi*. *Shushkashaka*, *Adhyashana*, *Alpashana* and *Kathina Bhojana* types of *Aharaja Nidanas* were responsible for *Vata Prakopa* and degenerative changes in the body. *Diwaswapna*, *Vega Sandharana*, *Aticheshta* and *Bharavahan* like *Viharaja Nidanas* may be the precipitative factors as they cause *Vata Kapha-Prakopa* and strain on spine directly. *Chinta* was one of the causative factors of *Vata* in *Manasika Nidana*. Under *Agantuja Nidanas*, *Abhighata* was one of the direct causes producing this disease. Apart from these factors, multiple pregnancy, neuritis, chronic constipation, and history of trauma support the hypothesis that the presence of prior *Kha-Vaigunya* increased the incidence of acquiring disease of that *Srotas*. After evaluation of cardinal signs and symptoms, presence of maximum *Vataja* symptoms followed by *Vata-Kaphaja* type of symptoms was found. As per the classics, *Gridhrasi* is of two types, i.e., *Vataja* and *Vata-Kaphaja*. But in this study, only *Vata-Kaphaja* type of *Gridhrasi* had been found. SLR test was used as an objective parameter for the diagnosis, assessment of severity of disease and also as a parameter for estimation to know the effect of therapy.

Conclusion

Agni karma therapy is result oriented for *sthanika* involvement of *Vata* in *Vata-kaphaja* disorders. It is an ambulatory treatment modality and affordable to the common man. No significant changes have been seen in routine investigations of blood, urine, as well as plain X-ray of LS spine after the treatment. Thickness of *Shalaka* plays an important role to maintain constant and optimum temperature. To maintain the constant temperature, all *Shalakas* were bearing equal weights of 100 g. Tip of the *Shalaka* was sufficiently pointed enough to create *Bindu Dahana Vishesa*. The patients were given six sittings of *Agni karma* in this study with an interval of 7 days between two sittings. It is further suggested that more number of sittings may be required depending upon chronicity and severity of the disease. The comparison statement of the study showed that the *Tamra Dhatu Shalaka* provided better result in many aspects of signs and symptomatology of *Gridhrasi* in contrast to other two *Shalakas*, i.e., *Lauha* and *Panchadhatu Shalakas*.

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हिंदी सारांश

गृध्रसी पर लौह ताम्र एवं पंचधातु शलाका द्वारा किये गये अग्निकर्म का एक तुलनात्मक अध्ययन

बबिता बक्शी, एस.के.गुप्ता, मंजुषा आर, सी.भुयान

सुश्रुत द्वारा वर्णित अलग-अलग अनुशस्त्रो कर्मों में अग्निकर्म एक महत्वपूर्ण कर्म है। अग्निकर्म करने के लिए बहुतसे उपकरण यथा पिप्पली, अजाशकृत, गोदन्त, शर, शलाका इत्यादि का वर्णन सुश्रुत संहिता में किया गया है तथा शलाका के लिए अलग-अलग धातुओं का प्रयोग भी बताया गया है। अतः श्रेष्ठ एवं उपयुक्त धातु निर्धारण हेतु इस अध्ययन की संकल्पना की गयी थी। गृध्रसी पुरुषों एवं महिलाओं में समान रूप से पाया जाने वाला एक विकार है। दुनिया में लगभग तीन चौथाई लोग कटिशूल से पीड़ीत हैं। जिसका ४०% कारण गृध्रसी रोग को माना जाता है। इस अध्ययन में गृध्रसी से कुल २२ पीड़ीत रोगियों को तीन वर्गों में बांटकर लौह, ताम्र एवं पंचधातु शलाकाद्वारा अग्निकर्म चिकित्सा की गयी जिससे प्राप्त परिणामों के तुलनात्मक अध्ययन स्वरूप ताम्र शलाका वर्ग में उत्साहवर्धक परिणाम पाये गये।