



# A Comparative Study on Agni Karma with Guda and Panchdhatu Shalaka in The Management of Janu Sandhigat Vata w.s.r. to Osteo Arthritis of Knee Joint-A Study Protocol

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## ABSTRACT

As a man ages, he becomes susceptible to numerous illnesses. Individuals will be wretched due to locomotion affliction. Ayurveda emphasises not only the treatment of disease but also its prevention and advancement. As the science of life, *Ayurveda* lends importance to a comprehensive set of treatment modalities, including *Shodhana*, *Shamana*, and *RasayanaChikitsa*. *JanuSandhigataVata* is a disorder in which vitiated *Vata* resides in the knee joint and manifests as symptoms. The *Charaka Samhita* mentions the disease *SandhigataVata* under the heading *Vatavyadhi*. The disease *JanuSandhigataVata* is comparable to knee osteoarthritis in the modern medical system. The majority of individuals over the age of 60 will have radiographic evidence of knee osteoarthritis in one or both knees. The knee joint is one of the body's main weight-bearing joints. According to the World Health Organisation, osteoarthritis is the second most prevalent problem of the musculoskeletal system in the global population (30%), after back discomfort (50%). The most common clinical manifestations of osteoarthritis of the knee include pain, restricted movement, discomfort during movement, swelling, tenderness, crepitus, and morning stiffness of the affected joint. In the modern medical system, nonsteroidal anti-inflammatory drugs (NSAIDs), corticosteroids, and surgical procedures are the most commonly prescribed treatments for knee arthritis. These are merely symptomatic and temporary measures for the patients' relief. Studies have demonstrated that steroids diminish our immune system. Surgical procedures are prohibitively expensive for the average person. These factors have increased the demand for alternative knee joint pain

treatments. *Ayurveda* offers *Vataghna* medicines in addition to *panchkarma* therapy, there are numerous modalities within a single *Agnikarma* procedure, and we desire to conduct research on the effectiveness of *Agnikarma* with *Guda* and *PanchadhatuShalaka* in the management of *JanuSandhigataVata*.

Key words : kneejoint , *JanuSandhigata* , Osteoarthritis, *Vatavyadhi*, etc

## INTRODUCTION

Whether or not there is actual tissue damage involved, the term "pain" refers to an unpleasant and emotional experience<sup>1</sup>. In osteoarthritis of the knee, pain is the primary reason for seeking medical attention. Synovial joint dysfunction is osteoarthritis. Articular cartilages, particularly those in weight-bearing joints, undergo degenerative alterations with age<sup>2</sup>. *SandhigataVata* is characterised by pain, swelling, and limited mobility in affected joints due to damage to the joint's architecture. While referencing *Sushruta's* treatment of *SandhigatVata* with *Agni Karma in Chikitsa Sthan*<sup>3</sup>, *Acharya Madhavkar* in *Madhav Nidan* substituted "*Atopa*" as *lakshana*.<sup>4</sup>

"*SandhigatKupitVata*" is how *Acharya Vagabhat* identifies it, and *Snehan*, *Dahan*, and *Upnaha*<sup>6</sup> are how he recommends treating it. Osteoarthritis is characterised by localised cartilage degeneration, followed by a periartritic bone response of subchondral bone sclerosis and osteophytes i.e. bony overgrowths that attempt to create new bone. Bone, cartilage, the meniscus, and the synovium are all affected by osteoarthritis.<sup>7</sup>

Bones in the joint will rub more closely against one another and lose some of the stress absorption normally provided by cartilage as a result of this degeneration. Eventually, this will hurt. Pain, discomfort, morning stiffness (typically less than 30 minutes), edema, crepitus, and restricted joint movement are all symptoms and signs to look out for<sup>8</sup>. Physiotherapy, weight loss, various analgesics, interarticular steroid injections, and, in extreme cases, knee replacement surgery are currently the most common methods of treatment.

## NEED OF STUDY:

Knee pain due to osteoarthritis is a common complaint in today's Clinical Practise. The condition is not lethal, but the attacks and prolonged suffering it causes make the lives of its victims unbearable. Pain management, recurrence avoidance, and function enhancement are three primary targets of today's medical system. General practitioners recommend Analgesics & anti-inflammatory medications. Surgical procedures are rarely done. Unfortunately, there are several negative side effects associated with oral analgesics, especially with long-term use. Patients in the present era seek both immediate and long-term pain treatment. And *Agnikarma* can be an excellent solution to this problem. It can be done in an outpatient setting, doesn't need a lot of equipment, and serves both curative and adjuvant purposes.

## WHY AGNIKARMA :

क्षारदग्निर्गरीयान्किया सुब्ध्यातः तद्धग्दानां रोगाणाम् ।  
रोगाणामपुनर्भावाद्देशज भास्त्रसारैरसाध्यानां तत्साध्त्वाच्च ।।(सु0सू. 12 / 13)

Tissue heating as a treatment method is well-established. Agni karma has been hailed as one of the most effective non-invasive surgical alternatives. <sup>9,10</sup>

According to the classics, *Agnikarma* guarantees the patient a lifetime relieval of the ailment. Various therapeutic procedures, such as *Upnaha*, are described in *Ayurvedic* texts. For *Vatavyadhis*, try some *Snehan Agni Karma*. You can perform *Agni karma* in *Twacha, Mansa, Sira, Snayu, Asthi, and Sandhi*.<sup>11</sup>

*Acharya Sushruta* described specific *dravayas* for *Agnikarma*. *SandhigatRogas* utilises *Jaggery and Sneha (Ghrit, vasa, and Majja)*.<sup>12</sup>

अथेमानि दहनोपकरणानि भवन्ति—तद्यथा—

पिप्पल्यजाकृद्गोदन्तारालाकाजमबवौशेदतरलौहाः क्षोद्रगुडरेहाश्च (सु०सु० 12)

In addition,

Procedure that is OPD basis, simple, and safe, Provides instantaneous pain relief at a low cost with little side effects

### AIMS

To conduct a Comparative clinical study to see the efficacy of *Agnikarma* done by *Guda* and *PanchdhatuShalaka* for the management of *Janu SandhigataVata* s.r. to Osteoarthritis.

### OBJECTIVES :

- To study the efficacy of *Agnikarma* with *PanchdhatuShalaka*.
- To study the efficacy of *Agnikarma* with *guda*.
- To study the Comparative efficacies of *PanchdhatuShalaka&gudaAgnikarma* in *JanuSandhigataVata*.

### RESEARCH QUESTION:-

Is there any difference in between efficacy of *Agnikarma* with *Panchdhatu Shalaka* and with *guda* in *JanuSandhigataVata* (O.A. of Knee joint)?

### Hypothesis :

**Null Hypothesis (H0) :** There is no significant difference between in efficacy of *Agnikarma* with *guda* and *PanchdhatuShalaka* in *JanuSandhigataVata*.

### Alternative Hypothesis : (H1) :

There is significant difference between the efficacy of *Agnikarma* with *guda* and *PanchdhatuShalaka* in *JanuSandhigataVata*.

### CASE STUDY

This study included a selection of 60 patients from the outpatient and inpatient departments who had been diagnosed with *Janu-SandhigataVatavyadhi*. 60 Patients were divided into 2 groups and given specific treatment and observations were noted during its follow up

**Study Design:** Comparative open Random, clinical Study

**Study type:** Interventional

**Method of Allocation Concealment:** Not Applicable

**Site of Study:** Shri Krishna Govt. *Ayurvedic* College & Hospital, Kurukshetra

**Level of study:** IPD & OPD Level

**Masking:** Not Applicable, open trial

**Control:** Controlled Study

**Sampling method:** Simple random

**Timing:** Prospective

**No. Of group:** two

**Sample Size:** 30

**Primary Purpose:** TREATMENT

**Study Duration:** 30 days

**End point:** Efficacy and Safety

Point	Group A	Group B
Number of patients	30	30
Treatment	<i>PanchdhatuShalaka</i>	<i>GudaAgnikarma</i>
Mode of Administration	Local application daily	Local application daily
Duration of treatment	1 months	1 months
Patient Follow up to	Day 0, 7, 14, 21	Day 0, 7, 14, 21

#### **For Group A [Agnikarma with panchdhatuShalaka]:**

- **Purva Karma:** Acharya Sushruta mentioned that *Pichchhila* and *Snigdha*-light diet is recommended before *Agnikarma*.
- The site of pain should be washed with Lukewarm water/ povidine solution. As a heat-sensitive agent, spirit should not be used here. The localised region of the patient is draped.
- Patient should be in supine or Sitting position.
- Mark the sites of severe pain on the knee/knees

#### **Pradhan Karma :**

The Bindu type of Agnikarma will be choosen. ►With thehelp of Burner PanchdhatuShalaka is heated upto Red hot. ►Now tip of Shalaka placed directly on already marked and cleaned sites. ►To create *SamyakaDagdhaVrana*: After evaluating the disease's symptoms, the vital points, and the patient's and disease's strengths, tendor points must be marked and Agnikarma must be performed. ►Red-hot *PanchadhatuShalaka* in the affected area produces *SamyakaDagdhaVrana*. According to the extent of the diseased area, the number of *SamyakaDagdhaVranas* can range from 5 to 30. ►*SamayakDagdha* is that which is not deep, has the colour of tala phala; (blue-black in colour), even (without elevation or depression)

**Paschat Karma:** After preparing SamyakDagdhaVrana, a cooling agent is immediately applied to alleviate burning pain. Aloe vera Pulp is applied just after the Agnikarma to relieve burning pain.

- Madhu Sarpi will be used after agni karma for healing of wound.
- **HaridraChurna:** Will be used for dusting after Agnikarma (Dressingpurpose).
- Patient is asked to keep the area of procedure dry for 24 hours.
- Patient will be observed for 30 minutes after procedure and advised pathyaapthaya as mentioned in<sup>13</sup>Sushrut Samhita Chapter 19.....

जीर्णशाल्योदनं स्निग्धमल्पमुष्णं द्रवोत्तरम् । भुञ्जानो जांगलैर्मासेः शीघ्रं व्रणमपोहति ।।32 ।।

तण्डुलीयकजीवन्तीसुनिषण्णकवास्तुकैः । बालमूलकवार्ताकपटोलैः कावेल्लकैः ।। 33 ।।

सदाडिमैः सामलकैर्घृतभृष्टैः ससैन्धवेः । अन्यैरेवङ्गुणैर्वाऽपि मुद्रादीनां रसेन वा ।।34 ।।

शक्तून् विलेपी कुल्माषाञ्जलं चापि श्रुतं पिबेत् ।।35 ।। (सु0सु 19)

JETIR

### Pradhan Karma in Group B [*Agnikarma with Guda*]:

Guda in small quantity is taken in a Sterile dish and little quantity of distilled water is added to it with the help of burner /stove it is heated until attains sticky consistency. ► Then with the help of borosilicate pipette it will be sucked and drop wise poured on marked Tender sites on the knee. ► Wipe off after cooling. If any bleb or ulcer are developed at the site of *Agnikarma Madhu Sarpi* can be applied till healing. The process is to be repeated after 7 days. Once weekly.

### Plusta, Durdagha, AtiDaghaLakshanas<sup>14</sup> and Treatment<sup>15</sup>

Sign &symtoms	Treatment
<b>Plusta</b> is that which has a pigmented area on the skin associated with severe burning sensation.	For <b>plusta</b> hot fomentation and administration of medicines of hot potency should be done when the temperature of the body becomes increased, the blood become liquefied, water by nature is called in potency and so makes the blood thick (coagulate) hence heat only used comfort and never cold.
<b>Durdagha</b> is that in which blebs, vesicles appear, accompanied with severe pain such as sucking, burning, redness, exudation or ulceration and pain, these subsiding after a long time	In <b>Durdagha</b> the physician should resort to both warm and cold therapies, application of ghee, poultices and bathing the body should be done in cold state only.



**Atidagdha** is that in which the muscles are hanging loose, body is stiff, severe pain in the veins, tendons, joints and bones, associated with fever, burning sensation all over the body, severe thirst and fainting, wound heals after a long time and healed ulcers have discolouration other than the normal skin texture.

In **atidagdha** the torn (and hanging loose) muscle should be removed (by cutting) followed by cold therapies, then the physician should apply the paste of broken rice, bark of tinduki mixed with ghee or cover the wound with leaves of guduchi or aquatic plant (like lotus etc.) all the treatments similar to that of visarpa of pitta origin should be done.

### Methods of Selection of Study Subject:

#### Inclusion Criteria :

- The patient exhibits signs and symptoms that are described in *Ayurvedic* classical texts as well as in contemporary text books that are linked to the subject matter.
- Individual who is between the ages of 40 and 70 years old
- Individuals of both sexes as patients.
- Patients who are going to be open to receiving the treatment.

#### Exclusion Criteria :

- Patients suffering from *AmaVata* and *Vatarakta*, as well as pregnant women
- *JanuSandighatVata* as a result of *Abhighata* (prior to the first six months).
- A patient who has a disease that is listed in the *Sushruta Samhita* as a contraindication for undergoing *Agnikarma*.
- Patients with serious disorders such as neoplastic problems of the knee, patients with systemic diseases such as uncontrolled diabetes and hypertension, patients with major disorders.
- Knee Joint with T.B.
- A patient who suffers from the conditions of haemarthrosis and pyoarthrosis.
- Patient who is also participating in other treatment modalities for their *JanuSandhigataVata*.

On the basis of the signs and symptoms, as well as the findings of any examinations, a diagnosis will be formed.

**Criteria for withdrawal** include the occurrence of any major ailment or serious adverse impact during the course of clinical trials, which necessitates prompt medical attention.

- Unpredictable and erratic follow-up.
- In the event that a participant in a clinical trial decides to withdraw from the study on their own accord.

### SUPPORTIVE LAB INVESTIGATIONS:

- Blood investigation CBC, ESR, Serum uric acid.
- RBS, Serum calcium, CRP, Vit. D
- RA factor
- X ray knee joint Ap and lateral view

**Assessment Criteria:****Subjective Criteria:** Pain**Objective Criteria:** Tenderness, Swelling, Range of movement, crepitus

X-ray AP view and Lateral view before starting the treatment and on 28th day.

Two follow ups on the 43 and 58 day will be taken after starting of the treatment.

ASSESSMENT CRITERIA :	Grade	
<i>Shoola (Pain)</i>	0	No pain (0)
	1	Mild Pain (1-4)
	2	Moderate pain but no difficulty in walking (5-8)
	3	Severe difficulty in walking ( 9-10)
<i>Shotha (Swelling) on joint</i>	0	No Swelling
	1	Slight Swelling Pain
	2	Moderate Swelling (covers well over the bony prominence)
	3	Severe Swelling
<i>SparshaSahatva (Tenderness) on joint</i>	0	No Tenderness
	1	Patients Says tenderness
	2	Winching of face on touch
	3	Does not allow to touch the joint
Range of movement	0	Freely movable with no pain
	1	Movable with mild pain
	2	Movable with moderate pain
	3	Movable with severe pain
<i>Sandhisphutan (Crepitus)</i>	0	No crepitus
	1	Mild Audible Crepitus
	2	Moderate Audible and Palpable
	3	Crepitus

**MANAGEMENT OF THE DATA** The principal investigators will be responsible for coding the data.

**ETHICS AND DISSEMINATION** - Research ethical approval has been given after the research topic has been subjected to critical review and presented to the ethical committee.

**CONSENT OR ASSENT** - Subjects will be given information in their native language regarding the specifics of their therapy in great detail. The patients will then be asked to provide their written consent before the beginning of the trial.

The **DISSEMINATION POLICY** will take the form of presentations as well as the publication of papers.

**DISCUSSION** –

The condition is known by its Sanskrit name, *Janu Sandhigata Vata*, which refers to the pathology that affects the knee joint. In each and every one of *Ayurveda's* primary texts, there is a distinct entity that is referred to as the "*Sandhigata Vata*. We will come across *Janu bheda* in *Vatajananatmaja vikaras of Charaka Samhita*. One of the *Ashta Mahagadas* that has an effect on the *madhyamarogamarga* is known as *Sandhigata Vata*. *Janu Sandhigata Vata* is the condition that develops when *Vata* becomes vitiated and occupies the knee joint. *Vata* is considered to be the primary driving force behind the movement. *Dhatukshaya* is one of the things that can set it off. *Janu SandhigataVata* is a condition that falls within the *gata Vata* category of disorders. Due to the predominance of the *Vatadosha* in one's latter years, the sickness known as *Janu Sandhigata Vata* will become apparent. Catabolism is something that happens naturally in old age, also known as *Vardhakya Avastha*. Hence, in *Vardhakya*, *Dhatu Kshyajanya Sandhigata Vata* is prevalent. *Sandhi atopa*, rigidity, and *sandhi shaithilya* are all symptoms that can be brought on by *prakupita Vata*, which dries out *sandhishthita Shleshaka Kapha*.

वातपूर्ण दृति स्पर्शः भोथः सन्धिगतेऽन्त्रे ।  
प्रसारण आकुंचनयो प्रवृत्तिच सवेदना ॥ ( च०चि० 28 / 37)

Symptoms such as *Vatapoornadritisparshashohta*, *prasaranaakunchanapravrittivedana*, *shoola*, *atopa*, and *hanti sandhi* are examples of general *SandhigataVata* symptoms<sup>16</sup>. Patients who had been diagnosed with *Nirupa-sthambhaJanu SandhigataVata* were included in this study.

Osteoarthritis was also brought to light as one of the degenerative joint disorders by contemporary scientific research. Being a weight-bearing joint, this condition most frequently affects the knee. Osteoarthritis can be identified by its signs and symptoms, which include pain, stiffness, swelling, crepitus, and restricted joint movement. Radiographic examination reveals the presence of osteophytes and a narrowing of the joint space.

### Probable mode of action of *Agnikarma*<sup>17</sup>

*Agni* is comprised of the *GunasUshna*, *Tikshna*, *Sukshma*, and *Aashu-kari*, all of which have qualities that are antagonistic to *Vata* and anti-*Kapha*. The temperature of the flaming *PanchdhatuShalaka* is transferred to *Twakdhatu* in the form of therapeutic heat through the process of making *SamyakDagdhaVrana*. This healing heat comes from *Twakdhatu* and works in three different ways. First, as a result of its *Ushna*, *Tikshna*, *Sukshma*, and *Ashukari Guna*, it extinguishes the *Srotavarodha*, appeases the vitiated *Vata* and *Kapha Doshas*, and keeps them in a state of equilibrium. The second benefit is that it enhances *Rasa RaktaSamvahana*, which is the circulation of blood to the affected area. Patients see a reduction in their symptoms as a result of the increased blood circulation to the affected area, which also flushes away the toxins that are causing their agony. Third, the application of therapeutic heat raises the *Dhatwagni*, which in turn causes the metabolism of the *Dhatu* to become correct. This in turn digests the *amadoshas* that has accumulated at the damaged site and promotes correct nutrition from the *Purva Dhatu*. The stability of *Asthi* and *Majja Dhatu* improves as a result of this. Further, it may be asserted that the therapeutic heat penetrates deeper tissues, such as *Mamsa Dhatu*, and eliminates the *Sheeta Guna* of *Vata*. As a result, vitiated *doshas* return to a state of equilibrium, and the patient experiences a reduction in their symptoms .



According to recent research, the use of topical heat, also known as thermotherapy, has the potential to alleviate pain and unpleasant muscle spasms. This is accomplished through the acceleration of metabolic processes, which results in a reduction in the concentration of pain-causing toxic metabolites. The immediate area's increased circulation primarily achieves this. It is possible that hastening the resolution of the inflammatory response will initially make the discomfort worse, but it will cut the total amount of time needed for the inflammation to be resolved. Thermotherapy is generally calming and mentally relaxing; as a result, it favourably modifies an individual's emotional response to pain, which in turn further reduces that discomfort.

## STATISTICAL ANALYSIS

For within the group analysis of assessment criteria **Student T test** will applied at 5% level of significance.

## STRENGTHS -

If the planned study yields a satisfactory result, it will be adopted as a new management method for the *JanuSandhigataVata*. We shall be given an effective and economical treatment for pain relief and discomfort in society.

## LIMITATIONS -

Sample size is small, for better results sample size can be increased.

Human error can be taken into consideration while mentioning the observations by the Patients.

## CONCLUSION -

Conclusion will be mentioned after the analyzing data.

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