

A COMPARITIVE CLINICAL STUDY TO EVALUATE THE EFFICACY OF GODHUMA PINDA SWEDA AND SHASHTIKA SHALI PINDA SWEDA IN THE MANAGEMENT OF JANUSANDHIGATAVATA w.s.r. TO OSTEOARTHRITIS OF KNEE JOINT

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ABSTRACT

Janusandhigatavata is a condition in which the vitiated *Vayu* gets localized in *Sandhi* and causes *Shoola*, *Shotha* and *Sthambha* leading to reduced movements. *Janusandhigatavata* can be correlated to osteoarthritis of knee joint due to their similar clinical manifestations and etiopathogenesis. Osteoarthritis is a degenerative disorder characterized by degeneration of joint cartilage and adjacent bone. *Pinda sweda*, a type of *Sankara sweda* is commonly used in the management of *Sandhigatavata*. *Shashtika Shali Pinda sweda* and *Godhuma Pinda Sweda* are widely accepted treatment methods in *Sandhigatavata*. *Shashtika Shali* is having *Snigdha*, *Grahi*, *Guru*, *Madhura*, *Sheeta* and *Sthira Guna*, hence it acts as *Brimhana*. *Godhuma* possesses similar properties of *Shashtika Shali*, in addition to it; it also possesses *Sandhana* and *Sthairyra Guna*. A minimum of 40 patients fulfilling the diagnostic and inclusion criteria of either sex are selected for the comparative study. They were randomly assigned into two equal groups 'A' & 'B'. Group A (Trial group) received *Godhuma Pinda Sweda* and Group B (Control group) received *Shashtika Shali Pinda Sweda*. The duration of the study was 42 days in both the groups and observations were made on day 0, day 14 & 42nd day. Data obtained was statistically analysed and interpreted. **Results:** From the clinical study, it was evident that *Shashtika Shali Pinda Sweda* is better than *Godhuma Pinda Sweda*.

Keywords: *Godhuma Pinda Sweda*, *Janusandhigatavata*, Osteoarthritis, *Shashtika Shali Pinda Sweda*.

INTRODUCTION

In *Ayurveda*, *Charaka* was the first person who described the disease separately and named as "*Sandhigata Anila*" under the heading of *Vatavyadhi*. *Vagbhata* has considered *Vatavyadhi* as *Maharoga*.

Snehana and *Swedana* are prescribed as common line of treatment for *Vatavyadhi*¹. According to *Acharya Charaka*, *Swedana* relieves *Sheeta*, *Shoola*, *Sthambha* and *Gourava* of the body². *Janusandhigatavata* is a

condition in which the vitiated Vayu gets localized in Sandhi and causes Shoola, Shotha and Sthambha leading to reduced movements³. It can be either due to Dhathukshaya or Margavarodha. Janusandhigatavata can be correlated to osteoarthritis of knee joint due to their similar clinical manifestations and etiopathogenesis. Osteoarthritis of knee joint is a degenerative joint disease marked by degeneration of the articular cartilage, hypertrophy of bone at the margins, and the changes of the synovial membrane, accompanied by pain and stiffness⁴. According to W.H.O, Osteoarthritis is the second commonest musculoskeletal problem in the world population (30%) after back pain (50%). The reported prevalence of OA from a study in rural India is 5.78%⁵. To pacify the pain, contemporary medical science is using NSAIDs but larger anti-inflammatory drugs which are usually no more effective and carry on increased risk of gastric erosion or hemorrhage in elderly patients⁶. Hence there is a need for Ayurvedic intervention for treating the present condition. Pinda Sweda, a type of Sankara Sweda is commonly used in the management of Janusandhigatavata. Sankara Sweda is one among the 13 Sagni Sweda procedures described by Acharya Charaka⁷. Shashtika Shali Pinda Sweda and Godhuma Pinda Sweda are widely accepted treatment methods in Sandhigatavata. Shashtika Shali is having Snigdha, Grahi, Guru, Madhura, Sheeta and Sthira gunas⁸. Hence it acts as Brumhana. Godhuma possesses similar properties of Shashtika Shali, in addition to it, it also possesses Sandhana and Sthairyra gunas⁹. Godhuma is cost effective as well as easily available. So, here an attempt is made to compare the effect of Godhuma Pinda Sweda and Shashtika Shali Pinda Sweda.

Objectives

1. To evaluate the efficacy of Godhuma Pinda Sweda in the management of Janusandhigatavata.
2. To evaluate the efficacy of Shashtika Shali Pinda Sweda in the management of Janusandhigatavata.
3. To compare the efficacy of Godhuma Pinda Sweda and Shashtika Shali Pinda Sweda in the management of Janusandhigatavata.

Materials and Methods

Source of Data:

Literary Source: All the Ayurvedic, modern literatures and contemporary texts including the journals, websites about the disease and drug will be reviewed and documented for the intended study.

Sample Source: Patients attending the OPD and IPD of Department of Panchakarma, Karnataka Ayurveda Medical College and hospital and other camps complaints of Janusandhigatavata will be included for the proposed study.

Drug Source: The drugs will be selected from local areas, markets after proper identification. Godhuma pinda sweda, Shashtika shali pinda sweda and Ksheera bala taila will be prepared in Bhaishajya Kalpana Department, Karnataka Ayurveda Medical College, Mangalore, Karnataka.

Method of Collection of Data

Study design – A Comparative Clinical Trial

Sample size - 40 patients who fulfill the inclusive criteria will be selected randomly irrespective of sex, religion, occupation and economic status and assigned into two equal groups.

Group A – Godhuma Pinda Sweda., Group B – Shashtika Shali Pinda Sweda.

Diagnostic Criteria

Clinical features of Janusandhigatavata like Sandhi Shoola, Sandhi Shotha, Sandhi Atopa, Vedana during Prasarana and Akunchana as mentioned in classics, X-Ray of Knee joint A.P & Lateral view

Inclusion Criteria

- Patients between the age group of 30-60 years of either sex
- Patients having lakshnas of Dhathukshyaja Janusandhigatavata.
- Patients who are fit for Swedana

Exclusion Criteria

- Swedana ayogyas
- Patients with Gouty arthritis, Rheumatoid arthritis, Psoriatic arthritis.
- Fracture of Knee joint and needs surgical care.
- Malignancy condition.

- Patients with any systemic diseases like Diabetes mellitus and cardiovascular diseases.
- Pregnant women and lactating mother.

Table 1: Treatment Chart

Sr.No	Name	Group (A)	Group (B)
1.	<i>Pinda Sweda</i>	<i>Godhuma Pinda Sweda</i>	<i>Shashtika Shali Pinda Sweda</i>
2.	Duration of Procedure	14 Days (45mins)	14 Days(45mins)

Observation period: Observation of the patient will be done for all the 14 days.

Follow up: After 14 days of treatment, the patients of both the groups will be assessed on 0th, 14th and 42nd days.

Total study duration- 42 days

Assessment Criteria: For the assessment of treatment, subjective parameters like Pain during rest, Pain

on standing, Pain on walking, Ability to climb down stairs, Duration of morning stiffness, WOMAC pain score and objective parameters such as Swelling, Tenderness, Crepitus and Range of movement are considered on BT(0th), AT(14th) and AF(42nd)day of treatment.

Table 2: Scoring pattern of subjective and objective criteria

Parameter	Finding	Grading
Pain during rest	-No pain	0
	-Mild (pain not interfering with activities or sleep)	1
	-Moderate (pain interfering activities or sleep)	2
	-Severe (pain reducing activities or sleep)	3
Pain on standing	-No pain	0
	-Pain increases for standing 30mins	1
Pain on walking	-Without difficulty	0
	-Mild difficulty	1
	-Moderate difficulty	2
	-Severe difficulty	3
Ability to climb down-stairs	-Without difficulty	0
	-Mild difficulty	1
	-Moderate difficulty	2
	-Severe difficulty	3
Duration of morning stiffness	-Absent	0
	-<15min	1
	->15min	2
Swelling	-No Swelling	0
	-Mild Swelling	1
	-Moderate Swelling	2
	-Severe Swelling	3
Tenderness	-No tenderness	0
	-Patient complains of tenderness	1
	-Patient complains of tenderness & wincing	2
	-Does not allow to touch	3
Crepitus	-No Crepitus	0
	-Palpable Crepitus	1
	-Audible Crepitus	2
Range of movements	- Full range of the joint movement	0
	->50% & < full range of joint movements	1
	-Up to 50% of the joint movement	2
	-No movement	3

Table 3: To Assess overall Effect of the Therapies:

Poor Response	:	< 24% relief in signs, symptoms
Mild Response	:	25-49% relief in signs, symptoms
Moderate Response	:	50-74% relief in signs, symptoms
Good Response	:	75-100% relief in signs, symptoms

Results

Table 4: Comparison of effect of treatments in Group A (Trial) and Group B (Control)

Parameter	AT/AF	MR		SR		U test	P
		A	B	A	B		
Pain during rest	AT	19.26	21.62	366.00	454.00	176.00	0.483
	AF	20.00	21.00	400.00	420.00	190.00	0.739
Pain on Standing	AT	22.00	19.00	440.00	380.00	170.00	0.348
	AF	23.00	18.00	460.00	360.00	150.00	0.018
Pain on walking	AT	19.20	21.80	384.00	436.00	174.00	0.440
	AF	19.15	21.85	383.00	437.00	173.00	0.396
Ability to climb downstairs	AT	20.08	20.93	401.50	418.50	191.50	0.801
	AF	19.35	21.65	387.00	433.00	177.00	0.454
WOMAC pain score	AT	19.13	21.88	382.00	437.50	172.50	0.422
	AF	21.70	19.30	434.00	386.00	176.00	0.485
Duration of morning stiffness	AT	21.20	19.80	424.00	396.00	186.00	0.663
	AF	21.50	19.50	430.00	390.00	180.00	.496
Swelling	AT	15.90	25.10	318.00	502.00	108.00	0.006
	AF	18.35	22.65	367.00	453.00	157.00	0.124
Tenderness	AT	18.38	22.63	367.50	452.50	157.50	0.195
	AF	19.50	21.50	390.00	430.00	180.00	0.496
Crepitus	AT	18.15	22.85	363.00	457.00	153.00	0.158
	AF	21.28	19.73	425.50	394.50	184.50	0.630
Range of movement	AT	16.47	24.14	313.00	507.00	123.00	0.024
	AF	19.83	21.18	396.00	423.00	186.00	0.665

DISCUSSION

Discussion on probable mode of action of Pinda sweda: Swedana is one of the best treatment options for *Vatavyadhis*. Swedana karma can relieve *Seeta*, *Shoola*, *Stambha* and *Gourava* of the body which are the main *lakshanas* of different *Vatavyadhis*. Different types of *Swedanas* are mentioned by our classical texts to treat different clinical settings of *Vatarogas*. Most of them are practically difficult to perform. Hence traditional *Vaidyas* by their logical knowledge, used to perform different modifications of these *Sweda* procedures in their treatment. *Pinda swedas* are such modifications of *Ushma sweda* mentioned in our classics.

Along with *Swedana karma*, *mrduabhyanga* performed during *Pinda sweda* procedure also helps to get *Vatasamanatwa*. The *dravyas* used to perform these *Pindaswedans* like *Ksheera*, *Shashtika* and *Godhuma* are *Snigdha*, *Brumhana*, *Guru*, and *Seeta*. And hence they provide a controlled *Swedana* effect in the *Dhatukshayajanya Vatarogas* along with smoothening and energizing effect to the *kshayadhatus*.

As said earlier both *Shashtika* and *Godhuma* have almost same *gunas*. But their *gunas* have some *taratamaavastha*. *Shashtika* is *tridosahara* rather than *Godhuma* which is *vatapittasamana* and *Shashtika* is the *Sreshta dravya* among *Vreehi Dhanyas*. Means it is *Sreshta Dhanya* than *Godhuma* in all aspect and is

most suitable *dravya* for *Kshayaja Dhatus*. Hence if we perform *Pinda sweda* with *Shashtika* in *Dhatukshayajanya Vatarogas* like Chronic O.A, it surely awards more result than *Pinda sweda* performed by using *Godhuma*.

Mechanism of action of Swedana will be discussed under the following headings:

1) Application of heat: - Application of heat on an unctuous area causes the generation of a temperature gradient across the cell membrane. Besides facilitating the diffusion of liquid substances through the cell membrane, this plays key role in the formation of lipoid vesicles from the dropouts in the membrane in areas of flow temperature. This causes an expansion in the cell volume as well as surface area. But it cannot expand freely especially in the peripheral direction as it is bound by other cells around. This makes the blebbing of cell membrane inside. The temperature gradient caused by the heat further helps in blebbing in this direction. These lipoid vesicles or blebs gets detached from the cell organelle or other side of membrane and remain there till a critical surface is reached. This membrane then blebs out and spread further, thus providing nourishment to the tissues.

The chief beneficial effects of any kind of thermal therapy are due to the increase in the circulation and local metabolic process with the relaxation of the musculature. Application of heat causes relaxation of muscles and tendons, improves the blood supply and activates the local metabolic processes which are responsible for the relief of pain, swelling, tenderness and stiffness. Routine application of heat preceding the application of massage renders the applied area less painful than when the heat is not applied. The medicaments used in the *Pinda sweda* seems to be calculated for forming a suitable and effective medium for application of heat to the body in the process of *Pinda sweda*.

2) Physical effect of the massage: - It stimulates the sensory nerve endings thereby producing relaxation. It produces a hyperaemic effect causing the arterioles to dilate and thereby achieving more circulation. Also, the venous and lymphatic return is assisted. Massage causes movements of the muscles thereby accelerating

the blood supply, which in turn relieves the muscular fatigue. The application of massage may cause displacement of the exudates and thus may relieve tension and pain

3) Therapeutic effects of the medicaments used: - Drugs in oils and other lipid- soluble carriers can penetrate the epidermis. The movement is slow, particularly through the layers of cell membranes in the stratum corneum. But once the drug reaches the underlying tissues it will be absorbed into the circulation. Placing a drug in a solvent that is lipid soluble can assist its movement through the lipid barriers.

Godhuma contains the amino acid *threonine*, which might be the responsible active compound for the medicinal activity. The constituent *methionine* in the *Shashtika Shali* which is the only common amino acid with either linkage or is an important donor of active methyl groups might be the responsible active compound for its therapeutic activity. Cow's milk contains fats; hence these may have got absorbed during the *Pinda sweda*. *Bala* contains an alkaloid ephedrine and this may also have contributed to the effect. Oil in the form of *Ksheera bala taila* had been used in this study. It contains *Bala*, *Ksheera* and *Tila Taila*. It acts as *Vatahara* and *Brumhana*. This may also have contributed to the effect. *Bhrajaka pitta*, one among the *panchavidha pittas*, is in the *twak*. It is this *Bhrajaka pitta* that takes up and metabolizes the drugs applied in the form of *Abhyanga*, *Parisheka*, *Avagaha*, *Alepa* etc. As a matter of fact, no one single mechanism appears to be solely responsible for the therapeutic effects of *Swedana*.

CONCLUSION

Certain conclusions can be drawn based on the present study. *Janusandhigatavata* is a disease commonly associated with the *Vardhakya avastha* and *Dhatukshaya* is a prominent feature in its manifestation. The management of *Janusandhigatavata* can be done by *Vatavyadhi Chikitsa* among which *Snehana* and *Swedana* are important ones. *Shashtika Shali Pinda Sweda* and *Godhuma Pinda Sweda* are a modification of *Sankara Sweda* that comes under *Ushma* type of *Swedana*. In Group A that received *Godhuma Pinda*

Sweda, 12 patients got Good relief and 8 patients got moderate relief and in Group B that received *Shashtika Shali Pinda Sweda*, 13 patients got Good relief and 7 patients got moderate relief. In the study, treatment response within the group showed that all the parameters were significant in both the groups. But in intergroup comparison, it was found that the effect of *Shashtika Shali Pinda Sweda* was better than *Godhuma Pinda Sweda*. Both *Shashtika* and *Godhuma* have almost same *gunas*. But their *gunas* have some *taratamaavastha*. *Shashtika* is *tridosahara* rather than *Godhuma* which is *Vatapittashamana* and *Shashtika* is the *Sreshta dravya* among *Vreehi Dhan-yas* and most suitable for *Kshayaja Dhatus*. Both the *Sweda karmas* were found to impart the *Shamana sweda gunas* explained by *Charaka*.

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