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# A Comparative Clinical Study of *Kakolyadigana Salavana Upanaha Sweda* and Wax Therapy in *Janu Sandhi Gata Vata w.s.r Osteoarthritis*

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## ABSTRACT

### BACKGROUND

Sandhigatavata described in classical text books of Ayurveda represents a group of disorders of musculoskeletal system caused by impairment of Vata Kapha. Sandhigatavata is such a disorder, where in its significance is emphasized by its inclusion among Ashta Maha Gadas. The cardinal features of Sandhigatavata explained in the classical text books of Ayurveda, have at most similarities with the clinical features of Osteoarthritis explained in modern medicine.

### AIMS AND OBJECTIVES

- To assess the efficacy of Kakolyadigana Salavana Upanaha Sweda in Janu Sandhigatavata (Osteoarthritis).
- To assess the efficacy of Wax therapy in Janu Sandhigatavata (Osteoarthritis).
- To compare the efficacy of Kakolyadigana Salavana Upanaha Sweda and wax therapy in the management Janu Sandhigatavata (Osteoarthritis).

### METHOD

Thirty patients were selected from Sri Siddharoodh Charitable Hospital, attached to N.K.J. Ayurvedic Medical College & P.G. research Centre Bidar, Karnataka. GROUP A - (Kakolyadigana Salavana Upanaha Sweda):-15 patients were treated with for 7 days & Group-B (Wax therapy): -15 patients were treated for 7 days.

### CONCLUSION

Kakolyadi gana salavana upanaha sweda and wax therapy showed highly significant result (“p” value <0.0001) in the management of Sandhigatavata(Osteoarthritis). Symptomatically Salavana upanaha sweda showed better result with comparison to wax therapy

**Key Words** Sandhigatavata, Osteoarthritis, Salavana Upanaha Sweda, Wax Therapy, Panchakarma Therapy

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## INTRODUCTION

Osteoarthritis is the most common articular disorder that begins asymptotically by the age

of 40. According to World Health Organization, osteoarthritis is the second commonest musculoskeletal problem in the world population (30%)<sup>1</sup>. Incidence of this correlation merely

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illustrates that osteoarthritis is a process that takes time to develop. Osteoarthritis is the commonest form of joint disease which is a painful and disabling in advancing years of life<sup>3</sup>. It occurs in old age, mainly in the weight-bearing joints (knee, hip). It may occur at any age after adolescence, and occurs commonly at the hip and knee. In case of chronic osteoarthritis prime symptoms are severe pain, tenderness, stiffness, contracture and deformity<sup>4</sup>.

Modern system of medicines mainly targets pain relief. Commonly used drugs are NSAIDS & other analgesics and muscle relaxants, which have many side effects like gastric irritation, hepato-renal toxicity, drug dependence etc. Modern system of medicines mainly targets pain relief. Commonly used drugs are NSAIDS & other analgesics and muscle relaxants, which have many side effects like gastric irritation, hepato-renal toxicity, drug dependence etc. Also majority of population is reluctant to undergo surgery which is costly & doesn't give permanent cure. Hence, there is a need for study to find an effective, affordable & easily available treatment of Osteoarthritis<sup>5</sup>.

In the management of Sandhigata vata<sup>6</sup> all Acharyas have given prime importance to Upanaha sweda. According to Sushruta Salavana Upanaha Sweda is highly effective in those type of **Vatavyadhi presence** of Atyanta Ruja (severe pain), Gatraskoch (contracture of body parts) and Gatrastabdha<sup>7</sup> (stiffness) are prime symptoms of severe Osteoarthritis.

Panchakarma is a very unique therapeutic

procedure, because of its preventive, promotive, prophylactic and rejuvenative properties as well as providing a radical cure. Among these Panchakarma, Sweda Karma is such a Chikitsa that is applicable in all the Vatavyadhi<sup>3</sup>. Hence the study has been under taken to know the efficacy of Kakolayadi gana Salavana Upanaha Sweda<sup>8,9</sup> and wax therapy in the management of Sandhigatavata(Osteoarthritis).

## MATERIALS AND METHODS

Patients were selected from Sri Siddharoodh Charitable Hospital, attached to N.K.J. Ayurvedic Medical College & P.G. research Centre Bidar, Karnataka .A total of 30 patients were selected according to inclusive and exclusive criteria and divided into two groups of 15 each .Special case Performa was designed and parameters were assessed. Students "t" test was preformed for the study.

Group A:-15 Patients were treated with Kakolayadigana Salavana Upanaha Sweda for 7 days & Group-B: -15 patients were treated with Wax therapy for 7 days.

### Inclusion criteria:

1. Patients presenting with classical signs and symptoms according to Susruta Atyanta Ruja (severe pain), Gatraskoch (contracture of body parts) and Gatrastabdha (stiffness) which are prime symptoms of severe Sandhigata vata were selected.
2. Patients age between 40-70 years, irrespective of sex, religion and socio economic status.

**RESEARCH ARTICLE**

3. Patients fit for Upanaha.

Exclusion criteria:

1. Patients with other knee joint pathologies like RA, TB bone etc. and suffering from systemic acute pathogenesis.
2. Patients with knee joint fractures, prone to allergic reaction and Obesity.
3. Non co-operative patient & contraindicated for Upanaha Sweda.

Assesment criteria: Subjective and objective parameters (bellow Table-1) assessed basing on before and after treatment and subjected to

appropriate statistical analysis.

**Table 1** Parameters For Assessment

SUBJECTIVE PARAMETERS	OBJECTIVE PARAMETERS
Atyanta Ruja (severe pain)	Range of knee joint (Flexion) ment by Goniometer
Gatrasankocha (contracture of body parts)	---
Gatrastabdha (stiffness)	

**RESULTS AND DISCUSSIONS**

Age and Sex wise Distribution-majority of the patient age was 60to 69 years female (shows in bellow Table-2 and Table-3) found in this study.

**Table 2** Age Wise Distribution of 30 Patients

Age in Years	No of Patients		Total	Percentage %
	Group A	Group B		
40-49	3	3	6	20%
50-59	2	4	6	20%
60-69	8	5	13	43.33%
70-79	2	3	5	16.67%

**Table 3** Sex Wise Distribution of 30 Patients

Sex wise	No. of Patients		Total	Percentage %
	Group A	Group B		
Male	4	3	7	23.33
Female	11	12	23	76.67

In the present study out of 30 selected patients, majority of the patients i.e. 23 patients (76.67%) were female, 11 belonging from Group A and 12 from Group B. 7 patients (23.33%) were male where 4 were from Group A and 3 were from Group B. The details are highlighted in the table.

Socio Economic Status Joint Involved-Wise

Distribution of Patients and prakruti - In the present study out of 30 selected patients, majority of the patients i.e. Middle Class and Vata-Kapha prakruti(showed in Table 4, 5 and 6). In the study among 30 patients of Sandhigatavata 5 patients from Group A and 7 patients from Group B i.e. total 12 patients (40%) were complained pain in

right knee joint only. 3 patients from Group A and 7 patients from Group B i.e. total 10 patients (33.33%) were having pain in only left knee joint. 5 patients from Group A and 3 patients from Group B i.e. total 8 patients (26.67%) were having a history of pain in both knee. The details are highlighted in the table.

**Table 4** Socio Economic Status-Wise Distribution of 30 Patients

Economic status	No. of Patients		Total	%
	Group A	Group B		
Poor	4	7	11	36.67%
Lower Middle Class	4	2	6	20%
Middle Class	6	6	12	40%
Rich	1	0	1	3.33%

RESEARCH ARTICLE

**Table 5** Prakruti-Wise Distribution of 30 Patients

Prakruti	No. of Patients		Total	Percentage %
	Group A	Group B		
Vata-Pitta	3	3	6	20%
Pitta-kapha	2	1	3	10%
Vata-Kapha	10	11	21	70%

**Table 6** Joint Involved-Wise Distribution of 30 Patients

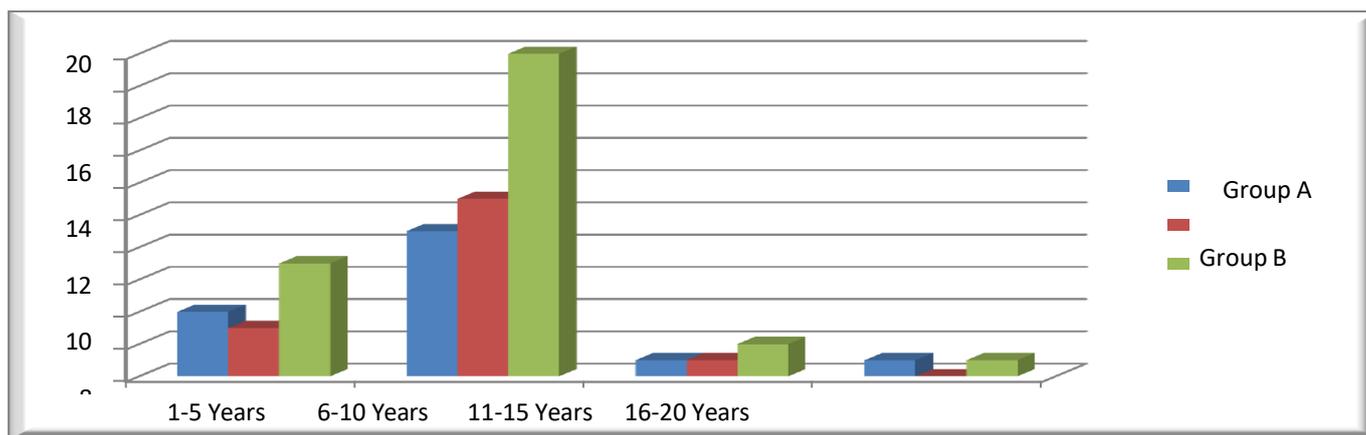
Joint involved	No. of Patients		Total	Percentage%
	Group A	Group B		
Right Knee	7	5	12	40%
Left Knee	3	7	10	33.33%
Both Knee	5	3	8	26.67%

**Table 7** Chronicity Wise Distribution of 30 patients

Chronicity	No. of Patients		Total	Percentage %
	Group A	Group B		
1-5 years	4	3	7	23.33%
6 – 10 years	9	11	20	66.67%
11 – 15 years	1	1	2	6.67%
16-20 years	1	0	1	3.33%

From this study, it has revealed that maximum number of patients 20 patients (66.67%) 9 patients from Group A and 11 patients from Group B were having chronicity of disease between 6-10 years. 7 total patient (23.33%), 4 patients from Group A and 3 patients from Group B were having chronicity of disease between 1-5

years. 2 patient (6.67%) 1 patient from Group A and 1 patient from Group B were having chronicity of disease between 11-15 years. Remaining 1 patient (3.33%) who is from Group A was having chronicity of disease between 16-20 years. The details are shown in the table-07.



**Graph 1** Chronicity-wise distribution of 30 patients

**Table 8** Group A: SUBJECTIVE PARAMETERS

S	Parameters	BT Mean (±)SD	Follow up	AT Mean (±)SD	Df (n-1)	t-value	%	P value	Remarks
1	Knee Pain	2.933 (±)0.2582	AT	0.7333 (±)0.5936	14	15.199	75%	<0.0001	HS

RESEARCH ARTICLE

			AF1	0.6 (±) 0.6325	14	14.642	79.54%	<0.0001	HS
			AF2	0.7333 (±) 0.5936	14	15.199	75%	<0.0001	HS
2	Stiffness	2.933 (±) 0.2582	AT	0.4 (±) 0.5071	14	19.000	86.36%	<0.0001	HS
			AF1	0.4 (±) 0.5071	14	19.000	86.36%	<0.0001	HS
			AF2	0.5333 (±) 0.5164	14	18.330	81.81%	<0.0001	HS
3	Contracture	1.933 (±) 0.7988	AT	0.8 (±) 0.6761	14	8.500	58.62%	<0.0001	HS
			AF1	0.7333 (±) 0.7037	14	8.290	62.06%	<0.0001	HS
			AF2	0.7333 (±) 0.7037	14	11.225	62.06%	<0.0001	HS

**Table 9** Group A: Objective Parameters

Sl	Parameters	BT Mean (±)SD	Follow w Up	AT Mean (±)SD	Df (n-1)	t- valu e	%	P value	Remarks
1	Range of Movement	2 (±) 0.378	AT	1.133 (±) 0.3519	14	9.539	43.33%	<0.0001	HS
			AF1	1.2 (±) 0.414	14	7.483	40%	<0.0001	HS
			AF2	1 (±) 0.5345	14	10.247	50%	<0.0001	HS

**Table 10** Group B: Subjective Parameters

S	Parameters	BT Mean (±)SD	Follow Up	AT Mean (±)SD	Df (n-1)	t- value	%	P value	Remarks
1	Knee Pain	3 (±) 0.000	AT	0.9333 (±) 0.7037	14	11.374	68.88%	<0.0001	HS
			AF1	0.9333 (±) 0.5936	14	13.484	68.88%	<0.0001	HS
			AF2	0.9333 (±)0.	14	13.484	68.88%	<0.0001	HS

RESEARCH ARTICLE

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2	Stiffness	3	AT	0.6	14	12.616	80%	<0.0001	HS
		(±)		(±)					
		0.000		0.7368					
			AF1	0.7333	14	12.475	75.55%	<0.0001	HS
				(±)					
				0.7037					
			AF2	0.8667	14	11.117	71.11%	<0.0001	HS
				(±)					
				0.7432					
3	Contracture	1.733	AT	0.8	14	7.897	53.84%	<0.0001	HS
		(±)		(±)					
		0.5936		0.5606					
			AF1	0.7333	14	7.246	57.69%	<0.0001	HS
				(±)					
				0.4577					
			AF2	0.7333	14	7.246	57.69%	<0.0001	HS
				(±)					
				0.4577					

**Table 11** GROUP B: OBJECTIVE PARAMETERS

S	Parameters	BT	Follo	AT	Df	t-	%	P value	Remarks
1		Mean	w	Mean	(n-1)	valu			
		(±)SD	Up	(±)SD		e			
1	Range of	2	AT	0.8667	14	12.475	56.66%	<0.0001	HS
	Movement	(±)		(±)					
		0.378		0.5164					
			AF1	0.9333	14	16.000	53.33%	<0.0001	HS
				(±)					
				0.4577					
			AF2	1	14	10.274	50%	<0.0001	HS
				(±)					
				0.378					

The Upanaha sweda is mentioned by almost all Acharyas. Vagbhata & Sushruta totally divided sweda into 04 types & Upanaha sweda is included in them. The process in which drugs appropriate for svedana are cooked well and prepare a paste which is applied over affected area and then covered by leaf and bandage is called Upanaha sveda. Upanaha is very much effective in vataja diseases because it contains vatahara dravyas. In Sandhigatavata the Upanaha helps to reduce symptoms like Pain, Stiffness, and increased mobility. In Upanaha Sweda along

with drug absorption and delivery through the skin, application of heat and bandage both are worked together helps to cure the disease. Heating the tissues results in increased metabolic activity, increased blood flow and stimulation of neural receptors in the skin or tissues. Temperature above 42°C produces heat rigor due to coagulation of proteins present in the muscle. Application of bandages improves proprioceptive acuity by increasing cutaneous input and also increased blood circulation. In Osteoarthritis pressure effect of bandage provides comfortable

## RESEARCH ARTICLE

compression as well as support when pulled in all directions, such as when the knee is flexed and extended. This support helps unburden the surrounding muscles, tendons and ligaments and helps to improve, stability, improve sensation and improved coordination. Salavana upanaha is a process of upanaha sweda where lavana is used more quantity that's why the name is salavana upanaha.

The Wax therapy is application of the liquid paraffin by cloth method over affected knee joint. It is one of the most effective ways of applying heat to improve joint mobility by warming the connective tissues. It is ideal for pain relief and maintaining movement in osteoarthritis. Warm wax has several benefits. It helps to bring down the aches and pains of the body, relaxes sore and tired muscles and hydrates the skin making it soft and smooth and increased movement in a case of disability. Besides keeping joints mobile, paraffin wax helps reduce chronic pain associated with fibromyalgia, strains, sprains and muscle spasms. The principal behind the wax bath is that it works on latent heat. There is a marked increase in skin temperature up to 12-13°C and in superficial muscles, is only about 2- 3<sup>0</sup> C in temperature at the end of the treatment. Stimulation of superficial capillaries and arterioles cause local hyperemia and reflex vasodilatation. The hyperemia is due to response of the skin to its function of heat regulation. Exercise after the wax is essential to increase the muscle circulation and sedative effect of heat to obtain more range of movement and muscle

strength. Wax leaves the skin moist, soft and pliable. Here Kakolyadi gana salavana upanaha has been selected for the study as it is explained by Susruta Samhita in Vatavyadhi Adhaya which contains Kakolyadi gana drugs. Preparation of paste for Salavana upanaha sweda along with above mention drugs also using *mahasneha*, *mamsa*, *dadhimastu* and *saindhava*. Maximum drugs are having Guru, snigdha guna, ushna virya and madhur vipaka. Actions are *vatahara*, *balya*, *rasayana*, *swedan* etc. While analysis of *Guna-Karmata* it is found that all the drugs in combined having *Vedanasthapana*, *Brumhana*, *Balavardhana*, *Shoolahara* and *Vatashamaka* quality.

## CONCLUSION

By looking into results, it can be concluded that Kakolyadi gana salavana upanaha sweda and Wax therapy showed highly significant result ("p" value <0.0001) in the management of Sandhigatavata. Symptomatically Salavana upanaha sweda showed better result with comparison to Wax therapy due to its heat as well as Pressure effect with Vata mitigating property. Above result were obtained in the study conducted on a small sample size and for less duration of time, results observed can't be generalized. It is recommended, the study should be tried on a large sample group for more duration of time to get more accurate unambiguous results.

## RESEARCH ARTICLE

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