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Role of *Panchakarma* Treatment in the Management of *Janu Sandhigata Vata* (Osteoarthritis)

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ABSTRACT

Sandhigata Vata is a type of *Vatavyadhi*, located in *Marmasthisandhigata*. It is a *Shula* and *Shotha pradhana vyadhi* affecting locomotor system. *Sandhis* come under *Madhyama Roga Marga*. *Shula pradhana vedana* is the cardinal feature of the disease associated with *Sandhi shotha* with *Vatapurnadrutisparsha* and lack of movement of the joints. In this study total 60 patients having the complaints of osteoarthritis were randomly selected for single arm clinical trial. Patients were treated with *Tikta Ksheer Basti* and *Upnaha* of *Asthisandhanaka lepa*. The duration of treatment was 15 days and follow up was taken at 30th and 90th day and for the assessment of patients subjective criteria WOMAC Scale was used. Significant effect find after the treatment

KEYWORDS

SandhigataVata, Osteoarthritis, *TiktaKsheerBasti*, *Upnaha*



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INTRODUCTION

Sandhigata Vata is the commonest type of diseases seen in society. It is a *Shula* and *Shotha pradhana Vatavyadhi* affecting the locomotor system and leaving the person disable to do his daily routine activities. According to *Ayurvedic* text *Tikta rasa* has tendency towards *Asthi and majjadhatu* after assimilation in the body due to the dominance of *Akash* and *Vayu mahabhuta*. Thus, *Tikta rasa* along with *madhura snighdravya* are used in the form of *Ksheerbasti* in *Janusandhigata vata* and it was found more beneficial as *Ksheera* has *madhura, snigdha* and *Vatashamaka* properties¹. *Upnaha* is the application of medicated poultice which relieves pain, restricted movement, and stiffness. It is a local treatment where in a combination of powdered herbs are made into paste using *sneha* materials such as oil made hot and applied over the required site and then bandaging is done with thick material. For better mode of action, the *Upnaha* should be left undisturbed for duration of twelve hours².

Sign and Symptoms:

1. *Sandhishoola*: -

Shoola is the chief symptom of *Prakupita Vata*. It is obvious to experience *Shoola* in the diseases which are dominated by *Vata*.

2. *Sandhishotha*: - *Prakupita Vata* gets enlodged in *Sandhi* where *Srotoriktata* already exists. So there is wide scope of *Vata* sanchaya in specific site to get accumulated there resulting in *Shotha*. Here *VatapurnadratiSparsha* type of *Shotha* has been described by *Acharya Charaka*. As *Shotha* is *Vatika* type, on palpation the swelling is felt like a bag filled with air.

3. *HantiSandhigataha*: -

Arunadatta explained *Stambha* as less or loss of flexion and other movements. *Gati* is unique feature of *Vata* and in *Janu-Sandhigata Vata*; this *Gati* is obstructed because of *Sanga* type of *Strotodushti*. This gives rise to *Stambha*. *Vata* also increased *Sheetaguna* of *Vata* is responsible for *Sthambha*.

4. *PrasaranaAkuncanayohSavedana*: -

According to *Acharya Charaka* *Sandhi* is made to perform the function of *Akunchana* and *Prasarana*. *Prakupita Vata* hampers the normal function of *Sandhi* which results in *Vedana* during *Akunchana* and *Prasarana*.

5. *Sandhisphutana*: -

In *Janu-Sandhigata Vata Prakupita Vayu* affects *Sandhi*. This *Sthanasanshraya* is result of *Srotoriktata* present at *Sandhi*. That means *Akash Mahabhuta* is increased at the site of *Sandhi* and *Shabda* is a *Guna* of *Akasha*. Hence, in the process of



extension and flexion, *Shabda* is heard or palpated. In allopathic texts, it is mentioned clearly as crepitation. *Acharya Madhavakara* has given a new name i.e. *Atopa*³

AIMS

To evaluate the combined efficacy of *Tikta-Ksheer Basti* and *Upnaha* in management of *Janu sandhigata vata*.

OBJECTIVES

This study has been planned with these objectives:-

- To evaluate the efficacy of *Tikta-Ksheer Basti* and *Upnaha* in the management of *Janu Sandhigata vata*.
- To enumerate complications of *Tikta-KsheerBasti* and *Upnaha*, if any

MATERIALS & METHODS

Study Design;

Open labeled, single arm, clinical trial

Selection of Patients:

Patients were randomly selected from the OPD and IPD section of *Panchakarma* department, CBPACS, Khera Dabar New Delhi.

Diagnostic criteria: -

All the Patients were diagnosed and assessed thoroughly on the basis of *Ayurvedic* classical Signs and Symptoms

Inclusion criteria –

1. Patients of age group 40yrs to 50yrs of either sex.
2. Patients having signs and symptoms of *Janu Sandhigata vata* (OA).
3. Patients having chronicity of *Janu Sandhigata vata* less than 5yrs.

Exclusion criteria -

1. Patients below age 40yrs & above 50 yrs of either sex.
2. Known patients with life threatening complicated and major systemic illnesses like cancer and tuberculosis.
3. Pregnant and lactating women.
4. Contra-indicated for *Basti Karma* and *Upnaha*

Plan of Study:-

Ethical clearance: -

Approval for design of study and ethical clearance were obtained from Institutional Ethical Committee of CBPACS, Khera Dabar (IEC CODE: 2017/01/MD/24). Written informed consents were taken from each patient willing to participation before the start of the trial.

CTRI No: CTRI/2018/02/011821

Grouping:-

60 clinically diagnosed patients of *Janu-Sandhigata Vata* were registered for single arm clinical trial, out of which 55 patients completed the trial.

Duration of Trial/ Follow up schedule:-



Assessment of patients was done after treatment on 15th day and follow up of the Patients was done on 30th and 90th day.

Posology:-

1. Tikta Ksheer Basti:-Administered 240 ml quantity of *Tikta Ksheer Basti* in empty stomach.

2. Upnaha of Asthisandhanka lepa- Application of *Upnaha* done in morning time and advised to remove after 12 hour.

Duration of treatment: - 15 days.

Assessment Criteria: -

Presence & absence of these symptoms & signs was compared before and after treatment with their severity:-

Subjective Criteria:-

WOMAC OSTEOARTHRITIS INDEX⁴

Scale of difficulty: 0 = none, 1 = Slight, 2 = Moderate, 3 = very, 4 = extremely

Circle one number for each activity

Table 1The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)

Pain	1.	Walking	0	1	2	3	4
	2.	Stair climbing	0	1	2	3	4
	3.	Nocturnal	0	1	2	3	4
	4.	Rest	0	1	2	3	4
	5.	Weight bearing	0	1	2	3	4
Stiffness	1.	Morning stiffness	0	1	2	3	4
	2.	Stiffness occurring later in the day	0	1	2	3	4
Physical Function	1.	Descending stairs	0	1	2	3	4

Table 2 Comparison of result before treatment and after the treatment

	Mean	N	SD	SE	Z-Value	P-Value	% Change	Result
BT	57.86	55	19.39	2.61	-9.762	0.000	44.5	Sig
AT	32.10	55	14.92	2.01				

2.	Ascending stairs	0	1	2	3	4
3.	Rising from sitting	0	1	2	3	4
4.	Standing	0	1	2	3	4
5.	Bending to floor	0	1	2	3	4
6.	Walking on the flat surface	0	1	2	3	4
7.	Getting in /out of the car	0	1	2	3	4
8.	Going shopping	0	1	2	3	4
9.	Putting on socks	0	1	2	3	4
10.	Lying in bed	0	1	2	3	4
	Talking off socks	0	1	2	3	4
11.	Rising from bed	0	1	2	3	4
12.	Getting in/ out of bath	0	1	2	3	4
13.	Sitting	0	1	2	3	4
14.	Getting on /off toilet	0	1	2	3	4
15.	Heavy domestic duties	0	1	2	3	4
16.	Light domestic duties	0	1	2	3	4

RESULTS

Subjective criteria:-

Effect of therapy on WOMAC Index score

(1) Comparison of result before treatment and after the treatment:-

After giving the combined treatment of *Tikta Ksheer Basti* and *Upnaha* of *Asthisandhanaka lepa*, the mean score before treatment was 57.86 which decreased to 32.10 after treatment, with SD±19.39 giving a relief of 44.5% which was statistically **Significant (P<0.0001)**



Since sample size was more than 30, we have used Z-test to test significance between BT and AT results. From above table we can observe that P-Value is less than 0.05. Hence we conclude that effect observed was significant.

2. Comparison of result before treatment and after 1st follow up at 30th day

The mean score before treatment was 57.86 which decreased to 27.69 after follow up at 30th day treatment, with

Table 3 Comparison of result before treatment and after 1st follow up at 30th day

	Mean	N	SD	SE	Z-Value	P-Value	% Effect	Result
BT	57.86	55	19.39	2.61	18.482	0.000	52.1	Sig
At Day 30	27.69	55	13.31	1.79				

Since sample size was more than 30, we have used Z-test to test significance between AT and After Follow up results. From above table we can observe that P-Value is less than 0.05. Hence we conclude that effect observed was significant.

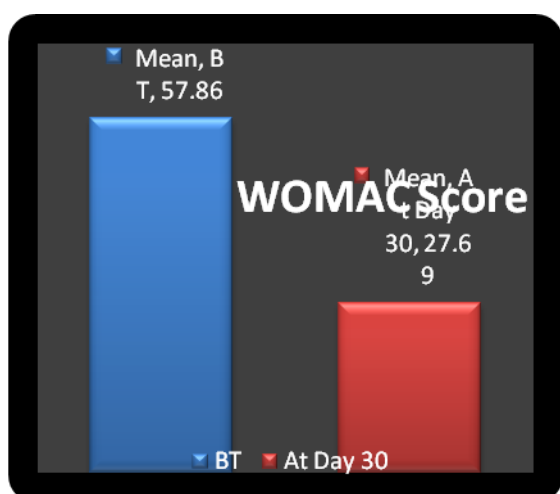


Figure 2 Comparison of result before Treatment and after 1st Follow up at 30th day

SD±13.31 giving a relief of 52.1% which was statistically **Significant (P<0.0001)**

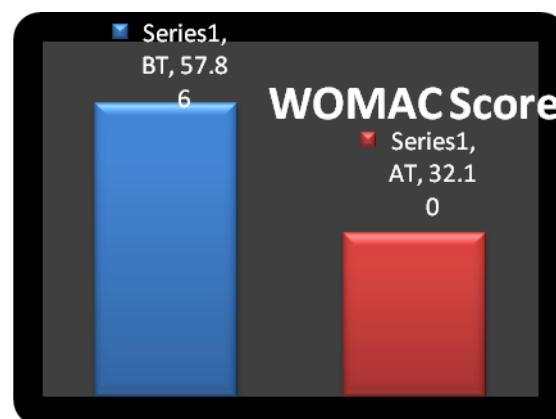


Figure 1 Comparison of result before treatment and after the treatment

3. Comparison of result after treatment and after 1st follow up at 30th day:-

The mean score after treatment was 32.10 which decreased to 27.69 after follow up at 30th day treatment, with SD±13.31 giving a relief of 13.7 % which was statistically **Significant (P<0.0001)**

Since sample size was more than 30, we have used Z-test to test significance between AT and after 1st follow up at 30th day. From the above table we can observe that P-Value is less than 0.05. Hence we conclude that effect observed was significant.

4. Comparison of result Before Treatment and after 2nd Follow up at 90th day:-



At the 2nd follow-up the mean score before treatment was 57.86 which decreased to 23.23 after 2nd follow up at 90th day

treatment, with SD±12.37 giving a relief of 59.8 % which was statistically significant (P<0.0001).

Table 5 Comparison of result Before Treatment and after 2nd Follow up at 90th day

	Mean	N	SD	SE	Z-Value	P-Value	% Change	Result
BT	57.86	55	19.39	2.61	-10.087	0.000	59.8	Sig
After FU	23.23	55	12.37	1.67				

Since sample size was more than 30, we have used Z-test to test significance between BT and After 2nd Follow up at 90th day results. From above table we can observe that P-Value is less than 0.05. Hence we conclude that effect observed was significant.

with SD±12.37 giving a relief of 27.6% which was statistically Significant (P<0.0001)

Since sample size was more than 30, we have used Z-test to test significance between AT and After 2nd Follow up at 90th day. From above table we can observe that P-Value is less than 0.05. Hence we conclude that effect observed is significant.

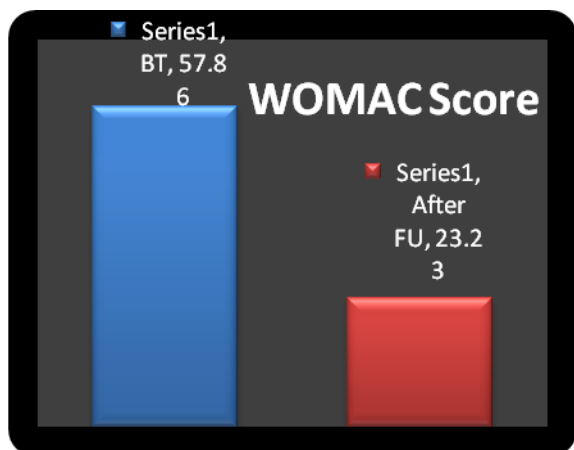


Figure 4 Comparison of result Before Treatment and after 2nd Follow up at 90th day

(5) Comparison of result after Treatment and after 2nd follow-up at 90th day:-

The mean score after treatment was 32.10 which decreased to 23.23 after treatment,

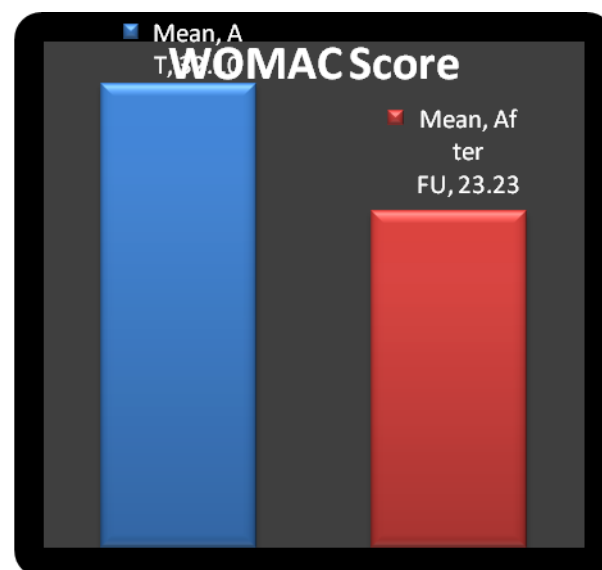


Figure 5 Comparison of result after Treatment and 2nd follow-up at 90th day:

Table 6 Comparison of result after Treatment and after 2nd follow-up at 90th day: -

	Mean	N	SD	SE	Z-Value	P-Value	% Change	Result
AT	32.10	55	14.92	2.01	-6.637	0.000	27.6	Sig
After FU	23.23	55	12.37	1.67				

(6) Overall effect of therapy after the treatment :-

In this trial improvement was noticed in all the patients. Significant relief was found in 1 (1.8 %) patient , while 33 (60%) patients were reported with moderate improvement, 19 (34.5 %) patients were reported with mild improvement.

Table 7 Overall effect of therapy after the treatment

Overall Effect	Frequency	%
Marked Improvement	1	1.8
Moderate Improvement	33	60.0
Mild Improvement	19	34.5
No Change	2	3.6
Total	55	100.0

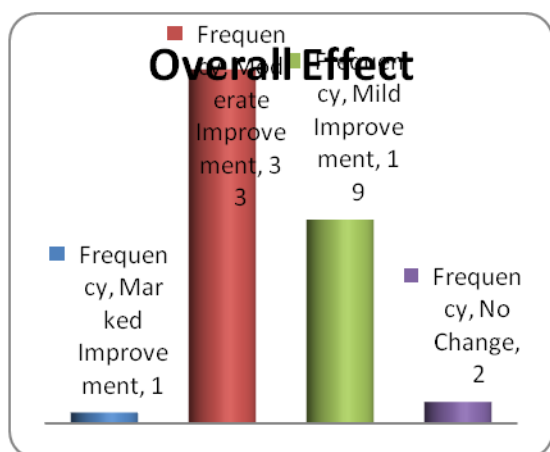


Figure 6 Overall effect of therapy after the treatment

DISCUSSION

PROBABLE MODE OF ACTION OF TIKTA KSHEER BASTI⁵

(A) Affinity of Tikta Rasa to AsthiDhatu :

According to Acharya Charaka, in Vyadhis of Asthi Dhatu Ashrita the treatment given is Basti of Tikta Dravya Siddha Kshira. Tikta Rasa has Vayu and Akasha Mahabhuta in dominance. Hence it has got affinity towards the body elements like Asthimajja having Vayu and Akasha Mahabhuta in dominance. Though Tikta Rasa aggravates Vayu, which enhances the pathogenic process of Sandhigata Vata but here in this study Tikta dravya was used with Ksheera. It have property of Vatashamana, so it balances the dosha.

(B) Dhatvagni Vardhaka property of Tikta Rasa:

Most of the ingredients of Tikta Ksheer Basti have Tikta rasa, ushna virya and Madhura – Katu Vipaka. The Tikta Rasa increases Dhatvagni, which further increases nutrition to all the Dhatus. As a result, Asthi and Majja Dhatukshaya get decreased.

(C) Asthiposhaka property of Tikta Ksheer Basti

Tikta rasa has Deepana, Pachana and Rochana properties, which helps in the improvement of the general condition of health and thus strengthen the whole body as well as the joint. In Tikta Ksheer Basti we use Ghrita and Ksheer which does the function of Vata shaman and Asthiposhana. Hence, it repairs the degeneration (Dhatukshaya) of Asthi. Tikta

Ksheera Basti also manifests its pharmacological actions in the ways as mentioned below.

1. Arresting the degenerative changes in *Asthi*.
2. Repairing the degenerative changes in *Asthi*.

(D) Effects of *Bastidravya* through *Pakvashaya*: -As per *Acharya Dalhana* *Asthidhara kala* is *Purishdhara kala*. *Purishdhara kala* is nothing but *Pakvashaya* (large intestine). *Pakvashaya* is main *Sthana* (site) of *Vata Dosha* and *Nirmiti*(origin) of *Vatadosha* and *Asthidhatu*. So the main effect of *basti dravya* on *Pakvashayagata dushita Vata*.

(E) Action of *Tikta Ksheer Basti* through ENS (Enteric Nervous System):-

Enteric Nervous System is substantial group of neurons, it is capable of Autonomous reflex without influence of central nervous system (CNS) and recent studies have shown that there is great influence of CNS and ENS on each other. There are so many similarities between CNS-ENS regarding cellular structure.

Probable Mode of Action of *Upnaha* with *Asthisandhanaka lepa*⁶

Asthisandhanaka lepa is used in pain, swelling, fracture and dislocation of bone, lodging of blood over the skin and pain in muscles.

1. Effect due to *Ushnaviryatva*

The properties of all the ingredients of *Asthisandhanaka lepa* are *laghu*, *ruksha*, *tikshna* and *pichchhila*, with the help of these properties, the medicine enters to the *sukshma srotas* of knee joint and *virya* of the *lepa* is *Ushna*, which is opposite to the *Sheetaguna* of *Vata*. Joint pain and stiffness being the features of *Janu-Sandhigata Vata*, use of *Asthisandhanaka lepa* gives relief in the joint pain and stiffness and thus increases the *SandhiGati Samarthya* and helps to increase the range of motion of knee joint.

2. Longer duration of *Upnaha Sveda*

Upnaha drug comes directly in contact with the skin, thus provides more heating period compared to the other types of *Sveda*. It further induces hyperthermia thus increases the blood circulation locally and removes the metabolic waste through sweat.

3. Prevent heat loss due to type of *Bandhana Upnaha*

Upnaha tied with thick cloth, helps to prevent heat loss by radiation and there is transfer of heat from paste to skin through conduction.

4. *Vatashamaka* property of *Sagni Upnaha*

In *Sandhigata vata*, there is *Sheetaguna* due to *Vatadosha* involvement, for that *Sagni upnaha* to the function of *Vatashamana*.

5. Effect of application of Heat⁷

The application of heat in different forms of *Snehana* and *Svedana* promotes local circulation and also opens up the pores of the skin to permit transfer of drug and nutrients towards the needed site and helps in the *shamana* of vitiated *Dosha* and elimination of *Mala* through *Svedana*. The application of heat on skin induces increased circulation and stimulation of the nerve endings on skin and tissues

CONCLUSION

- It was concluded that *Tikta Ksheer Basti* and *Upnaha of Asthisandhanaka lepa* was significant effective in *Janu-Sandhigata Vata*.
- As *Janu-Sandhigata Vata* being a chronic, degenerative disease, follow up should be kept for longer duration.
- Thus the results of this study are encouraging and confirms on the *Samprapti Vighatana* (Breakdown of pathogenesis) of *Janu-Sandhigata Vata* (Osteoarthritis of knee joints).

management of *Janu-SandhigataVata* s.r. to Osteoarthritis of knee joint. P.183-184.

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