

CLINICAL EVALUATION OF *PANCHATIKTA KSHEER BASTI* IN *SANDHIGATA VATA* W.S.R.TO OSTEOARTHRITIS OF KNEE JOINT

Asma sayyed^{1*}, Savita Kulkarni², Eknath Kulkarni³, Rajan Kulkarni⁴

¹PG Scholar, Panchakarma, Department of A.S.S. Ayurved Mahavidyalaya, Nashik, India.

²Head of the Department, Panchakarma, Department of A.S.S. Ayurved Mahavidyalaya, Nashik, India.

³Associate Professor Panchakarma, Department of A.S.S. Ayurved Mahavidyalaya, Nashik, India.

⁴Head of the Department and Professor, Kayachikitsa, Department of A.S.S. Ayurved Mahavidyalaya, Nashik, India.

ABSTRACT

Osteoarthritis is one the form of *sandhigata vata* mentioned by *Acharyacharaka*. *Sandhigata vata* can be defined as a disease of *Sandhi* (Joint) with symptoms of *Sandhishula*, *Sandhishotha*, *vata purna drutisparsha* and *Akunchana Prasarana Pravritti Savedana*. *sandhigata vata* is a disease related with *Khavaigunya* found in *Asthivaha srotasa* which includes vitiated *Vata* and *kapha*. The etiology and symptomatology of Osteoarthritis is very much similar to that of *sandhigata vata*. Osteoarthritis is usually characterized by swelling, pain, crepitus, pain during flexion and extension of affected joint. *Acharya Charaka* has elaborated the importance of *basti chikitsa* as *sandhigata vata*, because of its preventive, promotive, prophylactic and rejuvenative properties as. Among these *Panchakarma* "*Bastyah ksheersarpishah tiktakopahitanich*"⁵. In the present clinical study, efficacy of *Pancha tikta ksheer basti* in *sandhigata vata* with special reference to Osteoarthritis of knee joint is evaluated. The present modern established management includes use of various NSAIDs which become resistant over a short period of time. Though *basti* is a traditionally used therapy in *Janusandhigata vata*, its efficacy is not yet evaluated with *Pancha tikta ksheer basti*. Cost of the treatment modality is very much less as compared to other managements. Moreover there are no adverse effects of *basti chikitsa* when compared to present modern established conservative treatment. At the end of study it is found that *Pancha tikta ksheer basti* is more effective than *Yoga Basti* with respect to *Shotha*, *Shoola*, *Sandhigraha* and *Vatapurnadruti sparsha*. The values of *Shotha* levels were significantly reduced in Study as well as Control Group.

Keywords: *Janusandhigata vata*, Osteoarthritis, *Pancha tikta ksheer basti*, *Yoga Basti*.

INTRODUCTION

As said, *Ayurveda* is science of life and it has described how to live a healthy life through *Dinacharya* and *Rutucharya*. But everything is not possible because of our modern life style. As a result of rapid modernization, consumption of baked food, half fried vegetables etc. causes impairment in digestion and metabolism of protein structures, making human being vulnerable to many life threatening disorders. Among these *sandhigata vata* is common presentation which is characterized by severe pain, tenderness, inflammation, burning sensation in affected joints.

Ayurvedic texts provide a great insight in etiopathology, symptomatology and treatment of

Vatarakta. The dietary habits like fast food, spicy, oily and heavy diet, *Rukshahara*, *Viruddhashan*, *Vishamashan* along with, *Jagaran*, *Divasvaap*, *Atyadhvagamana*, *Yanayana*, *Vegavrodh* have been described as '*Hetus*'¹(etiological factors) of *sandhigata vata*. These mainly vitiate *Vata* and *kapha*. The vitiated *Vata* in such condition creates inflammation, stiffness and pain in the joints.

The etiology and symptomatology of Osteoarthritis² is very much similar to that of *sandhigata vata*. Osteoarthritis is a degenerative joint disease that may cause gross cartilage loss and morphological damage to other joint tissues, during onset

of OA, the collagen matrix becomes more disorganized and there is a decrease in proteoglycan content within cartilage. The breakdown of collagen fibres results in a net increase in water content. Without the protective effects of the proteoglycans, the collagen fibres of the cartilage can become susceptible to degradation and thus exaggerate the degeneration. Inflammation of the surrounding joint capsule can also occur, though often mild. This can happen as breakdown products from the cartilage are released into the synovial space, and the cells lining the joint attempt to remove them. New bone outgrowths, called osteophytes, can form on the margins of the joints, of the articular cartilage surfaces. *Ayurveda* being a life science is more than capable of providing a safe and effective line of treatment for *sandhigataavata*. The texts are rich with variety of formulations. *Panchakarma* is treatment modality used very extensively and effectively in *Ayurveda*. It plays an important role in *sandhigataavata*. *Acharya Charaka* elaborates importance of *Basti* karma in *sandhigataavata*

*Pancha tikta ksheer basti*¹ is one of the treatments on *sandhigataavata* explained by *Acharya Charaka* in *sutrasthana*.

AIM AND OBJECTIVES:

Aim:

To study the efficacy of *Pancha tikta ksheer basti* in *sandhigataavata* with special reference to Osteoarthritis of knee joint .

Objectives: 1) To reduce the sign and symptoms of *sandhigataavata* such as *Shoth*, *Shool*, *sandhighraha*, *vatapurnadruti sparsha*, etc., over the affected knee joints.

2) To conduct a comparative study of *Pancha tikta ksheer basti* and *YogaBasti*¹ in *sandhigataavata*.

MATERIALS AND METHODS:

MATERIALS:

• For study group - *Pancha tikta ksheer basti*

1. Guduchi
2. Nimba
3. Vasa
4. Kantakari
5. Patola
6. *Godugdha* 7. *Goghrta* 8. *Jal*

Basti prepared as per '*Ksheerpaka Kalpana*'³.

- For control group –*YogaBasti*
- Bilva (*Aegle marmelos*)
- Agnimanth (*Cleodendrum phlomidis*)
- Gambhari (*Gmelina arborea*)
- Patala (*Stereospermum suaveolens*)
- Shyonak (*Oroxylum indicum*)
- Prushniparni (*Uria picta*)
- Shaliparni (*Desmodium gangeticum*)
- Bruhati (*Solanum indicum*)

- Kantakari (*Solanum xanthocarpum*)
- Gokshur (*Tribulus terrestris*)
- Saindhava
- Madhu.
- Tila taila
- **Note:** *Pancha tikta ksheer basti* was prepared fresh daily for each patient.
- Contents of *Pancha tikta ksheer basti*, *Ghrta*, were taken from the same batch to maintain the quality.

METHOD:

Selection of Patients:

The patients who attended the O.P.D. and I.P.D. of Panchakarma and Kayachikitsa Department of our hospital, during the period of year 2015 and 2016. Among these, 60 patients who fulfilled the bellow mentioned criteria of inclusion were taken for the study.

Inclusion Criteria:

- 1) Age 30-70 years
- 2) Sex- both male and female.
- 3) Economic status –all
- 4) Patient of *sandhigataavata* presenting features as per Ayurvedic text.

According to Ayurvedic classics to follow the literary symptomatology viz.

Shula, Shotha, Stambha, vatapurnadrutisparsha, Akunchana Prasarana Vedana etc. at the joints.

Exclusion Criteria:

1. <30 and >70 years.
2. infected joints, chronic gouty arthritis, rheumatoid arthritis
3. Previous operated patient for knee joint.
4. Traumatic joint.

Investigations:

- 1) ESR
- 2) RA test
- 3) Sr. uric acid
- 4) X ray knee joint AP and lateral view

CLINICAL STUDY:

Clinical study carried out on randomly selected 60 patients showing signs and symptoms of *sandhigataavata* (Osteoarthritis). They were randomly divided into two groups-Group A and Group B.

Group A- Randomly selected 30 patients were treated with '*Pancha tikta ksheer basti*'.

Matra- 150ml *Regimen of Basti-* 8 days.

Duration of Study- 35 days

Follow-up- D8, D14, D21, D28, D35

Group B- Randomly selected 30 patients were treated with '*YogaBasti*'.

Matra-Anuvasan Basti(60ml),Nirooha Basti(500ml) on alternate day Regimen of Basti- Daily for 8 days.

Duration of Study- 35 days
Follow-up- D8, D14, D21, D28,D35

CRITERIA OF ASSESSMENT:

Table 1. Subjective Parameters:

Sr no	Sign & symptoms	Criteria	Score
1	Pain (<i>Shoola</i>)	No Pain	0
		Pain during walking	1
		Constant pain disturbing routine work.	2
		Resting pain.	3
2	Stiffness (<i>sandhigraha</i>)	No stiffness	0
		Morning stiffness	1
		Stiffness occur later in day	2
		Severe stiffness hampering daily activities	3
3	<u>Crepitus (<i>Vatapurnadrutisparsa</i>)</u>	No crepitus	0
		Mild complained by patient but not felt on examination	1
		crepitus felt on examination.	2
		Crepitus felt and heard on examination.	3
4	<u>Pain during movement (<i>Prasaranaacunchanavedana</i>)</u>	No pain	0
		Pain without wincing of face.	1
		Pain with wincing of face.	2
		Shouts or prevent complete flexion.	3

Objective Parameters:

Table 2. Shotha (cm):

Sr. No.	Group A		Group B	
	Before Treatment	After Treatment	Before Treatment	After Treatment
1	40	39	42	42
2	45	45	40	40
3	38	37	38	37
4	37	37	45	45
5	45	44	48	48
6	45	45	50	50
7	45	45	37	37
8	42	41	45	45
9	37	36	38	38
10	35	34	45	44
11	45	44	29	28
12	46	45	28	28
13	45	44	30	30
14	35	35	35	35
15	42	42	34	34
16	37	36	37	37
17	48	48	48	48
18	28	27	35	34
19	35	34	37	37
20	38	37	28	28
21	38	38	30	29
22	30	29	40	40
23	37	37	42	41
24	45	44	30	30
25	48	47	48	47

26	35	35	35	35
27	30	29	40	40
28	29	28	42	42
29	39	39	39	39
30	35	34	33	32

OBSERVATIONS AND RESULTS:**Table 3. Swelling (Shotha):**

Days	χ^2	df	Table χ^2 value	probability	Result
D8	7.4158	3	7.81	< 0.05	Significant
D14	2.98	2	5.99	< 0.05	Not Significant
D21	11.26	2	5.99	< 0.05	Significant
D28	11.56	2	5.99	< 0.05	Significant
D35	10.52	2	5.99	<0.05	Significant

Table 4. Pain (Shoola):

Days	χ^2	df	Table χ^2 value	probability	Result
D8	4.374	2	5.99	> 0.05	Not significant
D14	11.3	2	5.99	< 0.05	Significant
D21	18.98	2	5.99	< 0.05	Highly significant
D28	21.92	1	3.841	< 0.05	Highly significant
D35	18.22	1	3.841	<0.05	Highly significant

Table 5. Vatpurnadruti sparsha (crepitation):

Days	χ^2	df	Table χ^2 value	probability	Result
D8	5.856	3	7.815	> 0.05	Not significant
D14	2.37	2	5.99	> 0.05	Not significant
D21	9.054	2	5.99	< 0.05	Significant
D28	8.84	2	5.99	< 0.05	Significant
D35	8.06	1	3.48	<0.05	Significant

Table 6. Sandhigraha (Stiffness)

Days	χ^2	df	Table χ^2 value	probability	Result
D8	10.40	1	3.48	< 0.05	Significant
D14	13.68	2	3.48	< 0.05	NotSignificant
D21	7.968	2	3.48	< 0.05	Significant
D28	12.96	2	5.99	< 0.05	Significant
D35	23.99	2	5.99	<0.05	Highly Significant

Table 7. Prasarna vedana (Pain during Extension)

Days	χ^2	df	Table χ^2 value	probability	Result
D8	11.27	1	3.48	< 0.05	Significant
D14	21.846	2	5.99	< 0.05	HighlySignificant
D21	13.57	2	5.99	< 0.05	HighlySignificant
D28	15.706	2	5.99	< 0.05	HighlySignificant
D35	17.14	1	3.48	<0.05	HighlySignificant

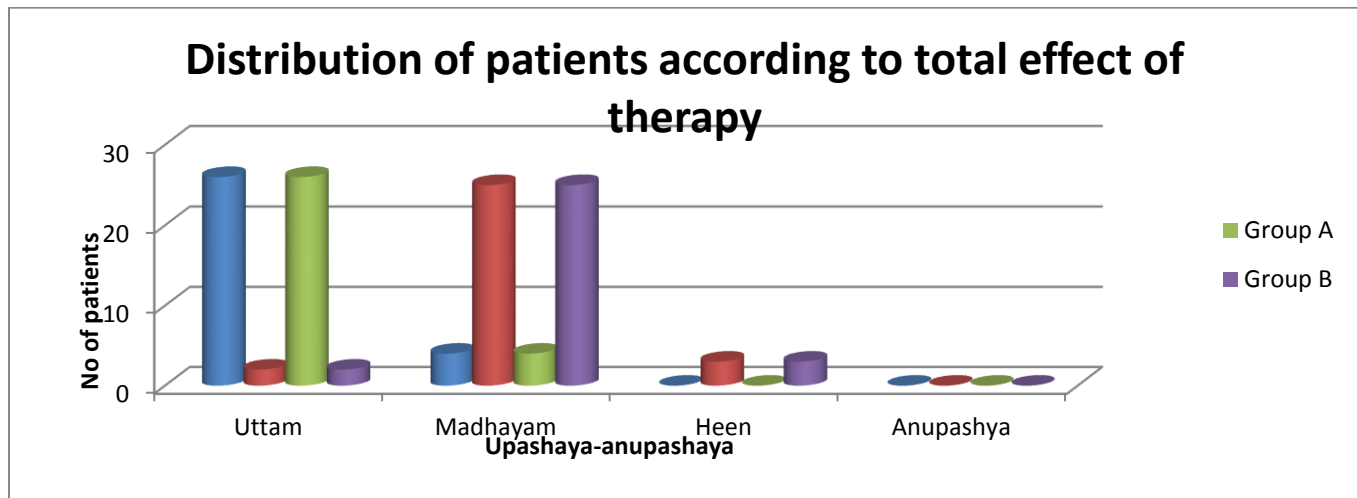
Table 8. Paired't' tests

Janusandhi shotha(cm)					
Group A			Group B		
Mean	0.63		0.26		
SD	0.47		0.30		
SE	0.08		0.05		

t_{29}	7.87	5.2
t_{table}	2.0	2.05
P	<0.05	<0.05

Table 9. Unpaired 't' test (Gr. A Vs Gr.B)

Janusandhi shotha(cm)	
SD	0.40
SE	0.104
t_{58}	3.557
t_{table}	2.02
P	<0.05



DISCUSSION

All the patients of study group and control group showed improvement in signs and symptoms of *sandhigatavata*. These were assessed by statistical methods applied on subjective criteria like swelling (*shotha*), pain (*shoola*), stiffness (*Sandhigraha*), Crepitus (*Vatapurnadruti sparsha*) and Pain during flexion and extension (*Prasarna acunchana savedana*) as well as on objective criteria i.e. *shotha*(cm).

There was slightly significant difference in Swelling (*Shotha*) at day 21 after completion of *Basti Karma*. But from day 28 there was more significant difference in experimental group.

Vasa, Nimba, Patola, and Kantakari have *Vatashamaka* action by virtue of its *Katu-Tikta Rasa, Katuvipaka, UshnaVeerya* and *Guru, Tikshnaguna*. It also possesses anti-inflammatory and analgesic action. *Guduchi* by its *Madhur* and *Kashay Rasa, MadhurVipaka, UshnaVeerya* may have worked as *TridoshaShamak*. It has been proved to have anti-inflammatory.

There was significant difference observed in pain on day 14 the difference is significant and from day 21 is significant, it was highly significant in experimental group, suggesting the action of *Basti* as *Shoola Nashaka* with effect of *Guduchi, vasa, Nimba, patola, kantakari* its *UshnaVeerya* and *Guna* may have shown *Vatashamaka*

property and analgesic action. Ingredients of *Basti* are *Godugdha, Goghrita, and Snigdha Guna* which helps to pacify *Vatadosha*.

There was significant difference observed in on day 8 *Vatapurnadrutisparsa* (crepitation). But on day 21 there was slightly significant, difference significant in experimental group.

Guduchi, Vasa, Nimba, Patola, Kantakari has *Vatashamaka* action by virtue of its *Katu-Tikta Rasa, Katuvipaka, UshnaVeerya* and *Guru, Tikshnaguna* with *vedanasthpan. Godugdha and Goghrita Madhur Rasa, Bruhana in Mansadi Dhatudaurbalya, Madhur Vipak, Vatapittaghna, Rakta Doshahar, and Sheet Veerya*.so increased in *shleshamakakapha*.

There was highly significant difference in *Sandhighraha* (stiffness) from day 8 more in study group.

As *Basti* contains *Godugdha, Goghrita, are Vataghna* in nature. Due to their *SnigdhaGuna* and *MadhurVipaka*, they also improve the *Mamsa Dhatu* and *Snayubandha* at affected joint. *Guduchi* reduces pain and stiffness of arthritis patient.

On day 8 there was significant difference observed in *Prasaranavedana* (Pain during extention) in experimental group. From day 14 highly significant difference was observed.

Prasaranavedana (Extention) is observed due to painful inflammatory condition of the affected joints, which is reduced due to anti-inflammatory, antiarthritis and analgesic effects of *Panchatikta ksheer Basti*.

In this study there was significant result observed in *Acunchanavedana* (Pain during flexion) in both A and B group.

Basti mostly contains drugs (*Godugdha*, *Goghrita*) having *Madhura* Rasa, *Madhura Vipaka*, *Snigdha* and *Pichhila Guna*, which helps to reduce *Acunchanavedana* (flexion) at affected joints.

Shotha (In cm):

The observed 't' value for difference in *Shotha* on day 0 and day 35 is significant 7.72 (p<0.05). It indicates that the values of *Shotha* were significantly reduced in Study as well as Control Group. Statistically *Panchatikta ksheer Basti* was more effective in lowering the *Shotha* than *Yoga Basti*.

Discussion regarding Total effect of Therapy:

Experimental Group:

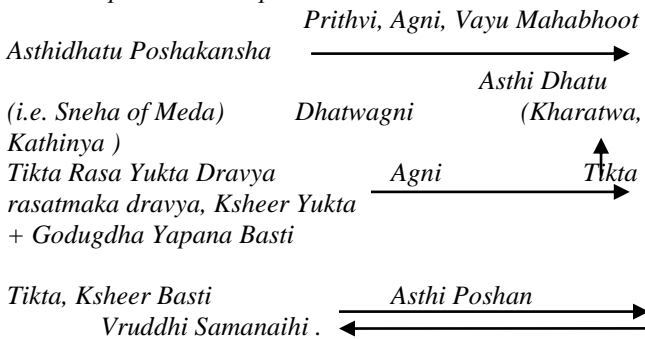
After studying all the data thoroughly it was observed that out of 30 patients in trial group 26 (86.66%) received *Uttam Upashaya* and 4 (13.33%) received *Madhyam Upashaya*.

Control Group:

Where as in control group only 2(6.66%) patient got *Uttam Upashaya*, 25(83.33%) patients got *Madhyam Upashaya*, 3(10%) patients received *Heena Upashaya* and 0% had *anupashaya*.

As we have correlated *sandhigatavata* to osteoarthritis i.e. mainly there is presence of *Vata Vruddhi* and *kapha kshaya* and the disease is related with *Asthi Dahtu*. *Basti* is the main treatment of *Vata Dosha* and even *Asthi Dhatu*, hence chosen the treatment *Pancha tikta ksheer Basti*.

The treatment for *Asthigata Roga* is "*Bastyah ksheersarpishah tiktakopahitanich*"



REFERENCES:

1. Charaka Samhita- Vol.2, edited by Acharya Vidyadhar Shukla and Prof. Ravi Datta Tripathi, Chaukhamba Sanskrit Pratishthan, Delhi, Reprint edition-2009, Pg. No. 690.
2. Harisons Principle of internal medicine, Vol. 2, Fauci, Braunwald, Kasper, Houser, Longo, Jameson, Loscalzo, Mac Graw Hill publication, 17th edition, 2008, Pg. No. 2226.

Probable mode of action of Basti:

Acharya Parashara has opined that *Guda* (anus) is the principal route of the body and bears rich blood supply in it. If we administer the *Basti* in anus, it nourishes all the extremities and organs of body. *Basti* eliminates the vitiated doshas via rectal route. Medicines which are administered through rectal route; are readily absorbed in rectum and large intestine. The rectum has rich blood supply and lymph drainage. Hence the drug can traverse through the rectal mucosa like other lipid membranes.

The portion which is absorbed from upper rectal mucosa is carried by the superior haemorrhoidal veins in the portal circulation where as the middle and inferior haemorrhoidal veins absorb from the lower rectal mucosa enters directly into systemic circulations.

The rectum with its rich vascularity and venous plexus provides a good absorption surface and many soluble substances produce their effect more quickly without passing the liver where they may be destroyed.

Panchatikta ksheer basti contains *Nimba* which contains calcium, phosphorus with analgesic, *Patola* having anti-inflammatory activity, *Guduchi* is best to cause astringent effect promoting digestion decrease *vata*, brings about absorptive in nature. *Vasa* and *Kantakari* also having antiarthritic, anti-inflammatory property.

While describing mode of action of *Basti*, *Acharya Charaka* says that *Basti* retains in *Pakwashaya* and dwells *Doshas* from all over the body i.e. head to toe as the sun stands millions kilometers away from the earth though; it evaporates the water by powerful sun rays¹. Further he explains the importance of *Basti* and says that *Basti* is the only therapy which pacifies the provoked *Vata Dosha* like cyclonic storm is sustained by the waves of the sea.

CONCLUSION

From the clinical trials conducted for the study "Clinical evaluation of *Pancha tikta ksheer Basti*. in *Sandhigatavata* with special reference to Osteoarthritis of knee joint" following conclusions are drawn:

On the basis of statistical tests of significance, *Pancha tikta ksheer Basti*. is more effective than *Yoga Basti* in reducing swelling, pain, stiffness, *Vatapurnadruti sparsha* and *Prasarna acunchana vedana* of the affected joints in *Sandhigatavata*. *Shotha* levels were reduced significantly in both the groups; where *Pancha tikta ksheer Basti* is more effective than *Yoga Basti*.

Thus it can be concluded that *Pancha tikta ksheer Basti* is more effective in the management of *Sandhigatavata*.

3. Sharangadhara Samhita with Dipika Commentary, by Bramhananda Tripathi, Chaukhamba Sanskrit Prakashana, Varanasi, Reprint edition 2010, Pg. No. 159, 220.
4. The Ayurvedic Pharmacopoeia of India, Part 1, Vol. 22, 1st edition, 1999, Pg. No. 41,124,122,59,147.
5. Charaka Samhita- Vol.1, edited by Acharya Vidyadhar Shukla and Prof. Ravi Datta Tripathi, Chaukhamba Sanskrit Pratishthan, Delhi, Reprint edition-2009, Pg. No. 431.