

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

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ABSTRACT

Osteoarthritis is a modern terminology for *sandhigata vata* mentioned by *Acharya Charaka*. *Sandhigata vata* can be defined as a disease of *Sandhi* (Joint) with symptoms of *Sandhi-shoola*, *Sandhishotha*, *vatapurna*, *drutisparsha*, *Akunchana Prasarana Pravritti Savedana*. *Sandhigata vata* is a disease related with *Khavaigunya* found in *Asthivahasrotasa* which includes vitiated *Vata* and *kapha* (cha.chi.28/37). 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 *Bastichikitsa* as *sandhigata vata*, because of its preventive, promotive, prophylactic and rejuvenative properties as. He has also mention *Panchakarma* "*Bastyahksheersarpishah tiktakopahitanich*"⁵ which means the best treatment for diseases related to *Asthivahasrotasa*. In the present clinical study, efficacy of *Panchatiktaksheerbasti* in *sandhigata vata* with special reference to Osteoarthritis of knee joint is evaluated. The present established modern management includes whereas, NSAIDs which further causes resistant among various patients over a short period of time. *Pancha Tiktak Sheer Basti* is cost effective modality as compared to other modalities. Moreover there are no adverse effects of *bastichikitsa* when compared to present modern established conservative treatment. At the end of study it is found that *Panchatiktaksheerbasti* is more effective than *Yoga Basti* with respect to *Shotha*, *Shoola*, *Sandhigraha* and *Vatapurnadrutisparsha*. The values of *Shotha* levels were significantly reduced in Study as well as Control Group.

Keyword: *Janusandhigata vata*, Osteoarthritis, *Panchatiktaksheerbasti*, *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, crepitus in affected joints.

Ayurvedic texts provide a great insight in etiopathology, symptomatology and treatment of *sandhigata* vata. 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 'Hetu'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 *sandhigata* vata. 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 *sandhigata* vata. *Acharya Charaka* elaborates importance of *Bastikarma* in *sandhigata* vata

Panchatikta ksheerbasti¹ is one of the treatments on *sandhigata* vata explained by *Acharya Charaka* in *sutras*.

Aim:

To study the efficacy of *Panchatikta* ksheerbasti in *sandhigata* vata with special reference to Osteoarthritis of knee joint.

Objectives:

- 1) To reduce the sign and symptoms of *sandhigata* vata such as *Shoth*, *Shool*, *sandhigraha*, *vata* purnadrutisparsha, etc., over the affected knee joints.
- 2) To conduct a comparative study of *Panchatikta* ksheerbasti and *Yoga Basti*¹ in *sandhigata* vata.

MATERIALS AND METHODS:

MATERIALS:

- For study group - *Panchatikta* ksheerbasti
 1. *Guduchi*
 2. *Nimba*
 3. *Vasa*

4. *Kantakari*
5. *Patola*
6. *Godugdha*
7. *Goghrita*
8. *Jal*

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

- For control group –*YogaBasti*
- Bilva (Aeglemarmelos)
- Agnimanth (Cleodendrumplomidis)
- Gambhari (Gmelinaarborea)
- Patala (Stereospermumsuaveolens)
- Shyonak (Oroxylumindicum)
- Prushniparni (Urariapicta)
- Shaliparni (Desmodiumgangeticum)
- Bruhati (Solanumindicum)
- Kantakari (Solanumxanthocarpum)
- Gokshur (Tribulusterrestris)
- Saindhava
- Madhu.
- Tilataila
- **Note:** *Panchatiktaksheerbasti* was prepared fresh daily for each patient.
- Contents of *Panchatiktaksheerbasti*, *Ghrita*, were taken from the same batch to maintain the quality.

Selection of Patients: The patients who attended the O.P.D. and I.P.D. of Panchakarma and Kayachikitsa Department of Nashik, 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 *sandhigatavata* presenting features as per Ayurvedic text.

According to Ayurvedic classics, following are the literary symptomatology. viz.

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

Exclusion Criteria:

1. <30 and >70years.
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 *sandhigatavata* (Osteoarthritis). They were randomly divided into two groups-Group A and Group B.

Group A-

Randomly selected 30 patients were treated with '*Panchatiktaksheerbasti*'.

Matra- 150 ml 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-AnuvasanBasti (60ml), NiroohaBasti (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	Crepitus (<i>Vatapurnadrutisparsha</i>)	No crepitus	0
		Mild complained by patient but not felt on examination crepitus.	1
		crepitus felt on examination.	2
		Crepitus felt and heard on examination.	3
4	Pain during movement (<i>Prasara-naacunchanavedana</i>)	No pain	0
		Pain without wincing of face.	1
		Pain with wincing of face.	2
		Shouts or prevent complete flexion.	3

Table 2: Objective Parameters: *Shohta* (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:

1) 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

2) 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

3) Vatpurnadrutisparsa (crepitus):

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

4) Sandhighraha (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	Not Significant
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

5) Prasarnavedana (Pain during Extension)

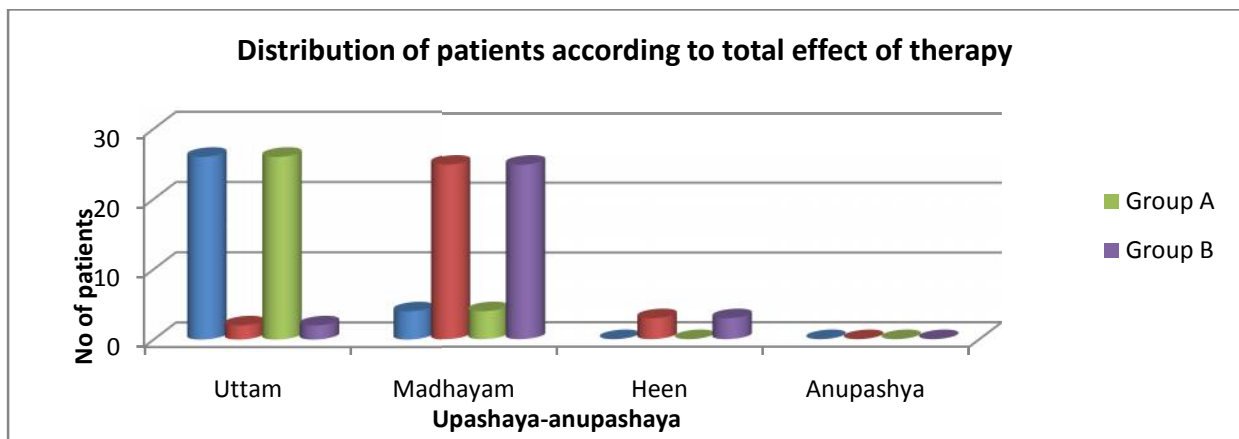
Days	χ^2	df	Table χ^2 value	probability	Result
D8	11.27	1	3.48	< 0.05	Significant
D14	21.846	2	5.99	< 0.05	Highly Significant
D21	13.57	2	5.99	< 0.05	Highly Significant
D28	15.706	2	5.99	< 0.05	Highly Significant
D35	17.14	1	3.48	<0.05	Highly Significant

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

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 (*Vatapurnadrutisparsha*) and Pain during flexion and extension (*Prasarnaacunchanasavedana*) 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, Ushna Veerya* and *Guru, Tikshnaguna*. It also possesses anti-inflammatory and analgesic action. *Guduchi* by its *Madhur* and *Kashay Rasa, Madhur Vipaka, Ushna Veerya* may have worked as *Tridosha Shamak*. 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 *ShoolaNashaka* with effect of *Guduchi, vasa, Nimba, patola, kantakari* being its *UshnaVeerya* and *Guna* may have shown *Vatashamaka* property and analgesic action. Ingredients of *Basti* are *Godugdha, Goghrita, and SnigdhaGuna* which helps to pacify *Vatadosha*.

There was significant difference observed in *Vatapurnadrutisparsha* (crepitus) on

8 day whereas, slightly significance difference in experimental group on 28th day.

Guduchi, Vasa, Nimba, Patola, Kantakari has *Vatashamaka* action by virtue of its *Katu-Tikta Rasa, Katuvipaka, Ushna Veerya* and *Guru, Tikshnaguna* with *vedanasthapana. Godugdha and Goghrita* being *Madhur Rasa, Madhurvipaka, sheetaveerya, so increased in shleshamakapha, vatapittaghna, Rakta Doshahar and Bruhana in Mansadi Dhaturdaurbalya*.

There was highly significant difference in *Sandhigraha* (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 Dhātu* 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 extension) in experimental group. From day 14 highly significant differences was observed.

Prasaranavedana (Extension) is observed due to painful inflammatory condition of the affected joints, which is reduced due to anti-inflammatory, antiarthritis and analgesic effects of *PanchatiktaKsheer 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-ksheerBasti* was more effective in lowering the *Shotha* than *YogaBasti*.

Discussion regarding Total effect of Therapy:

Experimental Group:

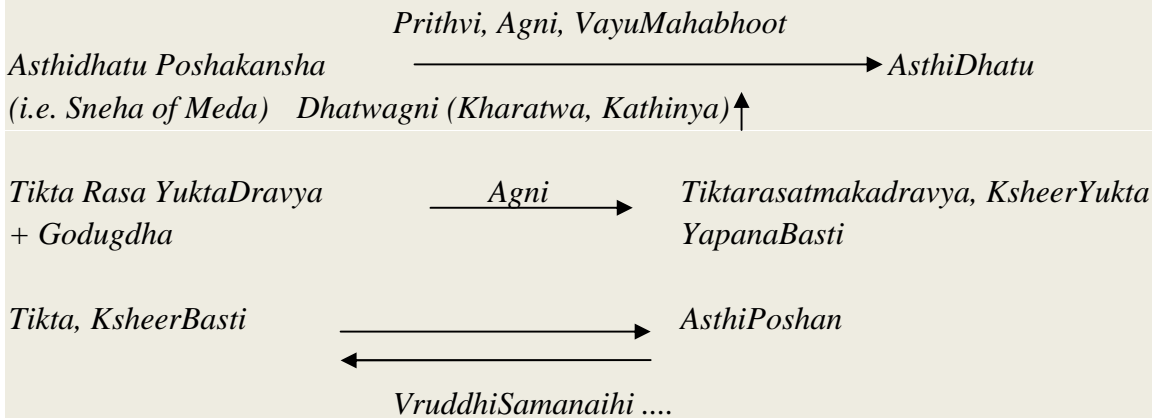
After studying all the data thoroughly it was observed that out of 30 patients in trial group 26 (86.66%) received *UttamUpashaya* and 4 (13.33%) received *MadhyamUpashaya*.

Control Group:

Where as in control group only 2(6.66%) patient got *UttamUpashaya*, 25(83.33%) patients got *MadhyamUpashaya*, 3(10%) patients received *HeenaUpashaya* and 0% had *anupashaya*.

As we have correlated *sandhigatavata*-to osteoarthritis i.e. mainly there is presence of *VataVruddhi* and *kaphakshaya* and the disease is related with *Asthi Dhatu*. *Basti* is the main treatment of *Vata Dosha* and even *Asthi Dhatu*, hence chosen the treatment *Panchatik-taksheer Basti*.

The treatment for *Asthigata Roga* is "*Bastyahksheersarpishah tiktakopahitanich*"⁵



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 and 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 *VataDosha* like cyclonic storm is sustained by the waves of the sea.

CONCLUSION

From the clinical trials conducted for the study "Clinical evaluation of *Panchatikta*ksheer Basti. In *Sandhigata*vata with special reference to Osteoarthritis of knee joint" following conclusions are drawn:

- On the basis of statistical tests of significance, *Panchatikta*ksheer Basti. is more effective than *Yoga*Basti in reducing swelling, pain, stiffness, *Vatapurnadrutisparsha* and *Prasarnaacunchanavedana* of the affected joints in *Sandhigata*vata. *Shotha* levels were reduced significantly in both

the groups; where *Panchatikta*ksheer Basti is more effective than *Yoga*Basti.

- Thus it can be concluded that *Panchatikta*ksheer Basti is more effective in the management of *Sandhigata*vata.

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Source of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Asma Sayyed Et Al: Clinical Evaluation Of Panchatikta Ksheer Basti In Sandhigata Vata W.S.R.To Osteoarthritis Of Knee Joint. International Ayurvedic Medical Journal {online} 2017 {cited April, 2017} Available from: http://www.iamj.in/posts/images/upload/1051_1059.pdf