

Clinical Research

Effect of *Anuvasana Basti* with *Ksheerabala Taila* in *Sandhigata Vata* (Osteoarthritis)Pradeep L. Grampurohit, Niranjana Rao¹, Shivakumar S. Harti²

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Abstract

Background: Osteoarthritis (OA) is the most common joint disorder. In Ayurveda the disease *Sandhigata Vata* resembles with OA, which is described under *Vatavyadhi*. Treatment provides symptomatic relief, but the underlying pathology remains unchecked due to the absence of effective drugs. In the management of *Sandhigata Vata*, all the Acharyas have described the employment of *Bahya Snehan*, *Swedana*, *Abhyantara Tikta Snehapana*, *Basti* treatment and *Guggulu Prayoga*. **Aim:** To evaluate the effect of *Ksheerabala Taila Anuvasana Basti* in *Sandhigata Vata*. **Materials and Methods:** In the present study, 30 patients of *Sandhigata Vata* were given *Anuvasana Basti* with *Ksheerabala Taila*. Subjective assessment of pain by visual analog scale and swelling, tenderness, crepitus and walking velocity were graded according to their severity. **Results:** Significant results ($P < 0.05$) were found in all the cardinal symptoms – Pain (*Sandhiruja*), Swelling (*Shotha*), tenderness, crepitus and walking velocity. Radiological findings showed no significant changes. **Conclusion:** *Anuvasana Basti* with *Ksheerabala Taila* was significant in the subjective symptoms of *Sandhigata Vata*.

Key words: *Anuvasana Basti*, *Ksheerabala Taila*, *Sandhivata*

Introduction

Osteoarthritis (OA) is the second most common rheumatologic problem in India and has a prevalence rate of 22-39%.^[1] It is characterized primarily by articular cartilage degeneration and a secondary periarticular bone response.^[2,3] World-wide prevalence rate of OA is 20% for men, 41% for women and it causes pain or dysfunction in 20% of the elderly respectively.^[4] Relieving pain stiffness and improving physical functions are the important goals of the present day therapy.^[5,6] Although OA itself is not a life-threatening disease, Quality of life can significantly deteriorate with pain and loss of mobility causing dependence and disability.^[7] In Ayurveda, the disease *Sandhigata Vata* resembles with OA, which is described under *Vatavyadhi*.^[8]

Anuvasana Basti is the treatment of choice in *Vatavyadhi*.^[9] *Ksheerabala Taila* is one of the most popular oil preparations in Ayurveda and recognized as a very effective remedy for neurological disorders such as facial paralysis, sciatica, hemiplegia, paraplegia, poliomyelitis and other such conditions.

The similar preparation has been mentioned by almost all ancient Ayurvedic texts but with different names. Charaka mentioned as *Shatasahasra Paka Bala Taila*.^[10] Sushruta mentioned as *Shata Paka Bala Taila*^[11] and Ashtanga Hridaya mentioned as *Shata Paka-Sahasra Paka Bala Taila*.^[12] The ingredients of this preparation are *Ksheera* (Cow's milk), *Bala* (*Sida cordifolia* Linn.) and *Tila Taila* (Sesame oil). *Ksheerabala Taila* is used for the purpose of *Anuvasana Basti*. *S. cordifolia* has been reported to possess analgesic, anti-inflammatory as well as hepato-protective activity.^[13-15] Charaka advises *Anuvasana Basti* to be administered in *Vatavyadhis*.^[16] The objective of the present study is to evaluate the effect of *Ksheerabala-Taila Anuvasana Basti* in *Sandhigata Vata*.

Materials and Methods

A total of 30 subjects with OA knees were recruited for the study among which 25 subjects (16 female and 9 male) completed the whole course and 5 dropped out. The study was approved by the Institutional Review Board (IRB) and Institutional Ethics Committee (IEC) (Ref No.: SDMAMC/03-04/D-1059). Signed informed consent was obtained from all the participants.

Inclusion criteria

- Persistent pain for 3 months prior to recruitment
- Moderate-to-severe pain on walking

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- Fully ambulant, literate and willing to participate in the study.

Exclusion criteria

- Acute knee pain
- Secondary OA due to rheumatoid arthritis, gout, septic arthritis, tuberculosis, tumor, trauma, or hemophilia
- Major medical or psychiatric disorders.

Design

It is a single group clinical study with pre-test and post-test design. A special proforma was prepared with all points of history taking, examination, laboratory and roentgenologic investigations to confirm the diagnosis as mentioned in our classics and allied sciences.

Intervention

The patients were treated with *Anuvasana Basti* with *Ksheerabala Taila* 120 ml for 10 days. 5 g of *Saindhava* was added to *Ksheerabala Taila* while administering *Basti*. The *Basti* was given daily between 2 pm and 3 pm in the afternoon after food.

The subjects were not given any other medications or topical treatments during the trial. The patients were assessed pre-test, post-test and after the follow-up period of 20 days.

Basti Pratyagamana Laxanas were all noted and No adverse events were noted during the trial.

Criteria for assessment

Subjective parameters

- I Visual Analog Scale (VAS) was used for assessing pain.
- II Swelling
 - Grade 0 - No swelling
 - Grade 1 - Slight swelling
 - Grade 2 - Moderate swelling
 - Grade 3 - Severe swelling
- III Tenderness was evaluated on the basis of standard criteria of "Ritchie Articular Index."
 - Grade 0 - Normal - Absent or no tender
 - Grade 1 - Mild - Tender
 - Grade 2 - Moderate - Tenderness and wincing
 - Grade 3 - Severe - Tenderness, wincing and withdrawal
- IV Crepitus
 - Grade 0 - Normal - No crepitus
 - Grade 1 - Mild - Crepitus complained by patient but not felt on examination
 - Grade 2 - Moderate - Crepitus felt on examination
 - Grade 3 - Severe - Crepitus felt and heard on examination
- V Walking velocity
 - Grade 0 - Normal - 20 min in 20 s
 - Grade 1 - Mild - 20 min in 30 s
 - Grade 2 - Moderate - 20 min in 40 s
 - Grade 3 - Severe - 20 min in 50 s

Objective parameters

Radiological findings

The Kellgren-Lawrence index was used to assess the changes in radiological finding.

- Grade 1 - Doubtful narrowing of joint space and possible osteophytic lipping

- Grade 2 - Definite osteophytes, definite narrowing of joint space
- Grade 3 - Moderate multiple osteophytes, definite narrowing of joints space, some sclerosis and possible deformity of bone contour
- Grade 4 - Large osteophytes, marked narrowing of joint space, severe sclerosis and definite deformity of bone contour

Overall effect of therapy

No improvement: 0-25%, mild improvement: >25-50%, moderate improvement: >50-75%, marked improvement: >75-<100% and complete remission: 100%.

Observations

In present study, 48% of the patients gave a history of pain in both knee joints, while 40% complained of pain in right knee joint, only 12% in left knee joint. 84% of the patients were found were having *Santarpanottha* and 16% were *Apatarpanottha Vyadhi*. Majority of the patients (64%) had the history of complaints between 1 and 5 years, followed by more than 5 years (20%) and less than 1 year (16%). Maximum (52%) patients had Kellegren Roentgenologic evidence of OA in Grade 2, followed by Grade 3 (40%) and Grade 1 (8%). There were no patients in Grade 4.

Most of the patients had *Basti Pratyagama Kala* in 6-9 hrs (40%), followed by 3-6 hrs (32%), less than 3 hrs (16%) and more than 9 h (12%). The maximum *Basti* retention time noted was 9.53 h and minimum was 1.43 h. The mean *Basti* retention time was 4.56 h.

Results

There was significant reduction ($P < 0.05$) in subjective symptoms such as pain, swelling, tenderness, crepitus and walking velocity. There was insignificant change in radiological findings [Table 1]. In the overall effect of the therapy, 56% (14) had mild improvement, 48% (08) had moderate improvement and 12% (03) had no improvement.

Discussion

Sandhigata Vata is a disorder dominated by pain affecting the *Sandhi* (joint). It is caused by morbid *Vata Dosha*. *Kapha Dosha* may also be involved in the clinical presentation. The vitiated *Dosha* or *Doshas* afflict the *Mamsa*, *Asthi* and *Snayu*. It is more evident in *Asthi Dhatu* with which *Vayu* has *Ashraya-Ashrayee Bhava Sambhanda*.

As per age-wise distribution, maximum numbers of patients (60%) in this study were in the age group of 51-60 years. This is the age wherein *Hani* (deterioration) of *Dhatu*s starts.^[17] In this study, maximum numbers of patients (64%) were females. Sex hormones have long been considered a possible factor in the systemic predisposition to OA, especially in women.^[18-20]

Nearly 16% of patients had chronicity below 1 year, whereas 64% of patients were between 1 and 5 years and remaining 20% of patients were more than 5 years.

Table 1: Effect of therapy

Symptom	BT	AT	Follow-up	Mean difference (AT-BT)	Mean difference (FO-BT)	t (AT-BT)	t (FO-BT)
Pain	1.20±0.1	0.520±0.978	0.32±0.097	0.680	0.880	7.494**	14.7**
Swelling	1.180±1.163	0.660±0.122	0.340±0.107	0.520	0.840	5.316**	6.2**
Tenderness	1.060±0.127	0.540±0.108	0.420±0.089	0.520	0.46	4.734**	6.1**
Crepitus	1.280±0.091	1.040±0.640	1.000±0.076	0.240	0.280	2.918**	3.2**
Walking velocity	0.080±0.215	1.440±0.142	1.180±0.150	0.640	0.260	5.018**	2.3**
Radiological findings	2.93±0.62	2.83±0.58	2.80±0.58	0.1±0.39	0.13±0.42	1.38*	1.71*

**P<0.05, *Non-significant, BT: Before treatment, AT: After treatment, FO: Follow up

Significant results ($P < 0.05$) were found in all the cardinal symptoms – *Sandhiruja* (pain), *Shotha* (swelling), tenderness and crepitus. There was significant improvement in walking velocity. This proves that *Anuvasana Basti* with *Ksheerabala Taila* is effective in *Sandhigata Vata*. Pain and crepitus are mainly due to *Vata Dosha* and above data proves that *Anuvasana Basti* with *Ksheerabala Taila* controls *Vata Dosha* and relieves these symptoms.

Probable mode of action of Basti

Basti Chikitsa is the prime treatment modality of Ayurveda. It is also considered as *Ardha Chikitsa* (half treatment). *Sneha* or *Anuvasana Basti* (unctuous enema) promotes *Bala* (strength) of the person who is emaciated and debilitated. About the possibility of the absorption of *Basti Dravyas* (drugs) from the colon, some are of the opinion that substances other than water, salt, etc., are not absorbed from the large gut; but this is physiological phenomenon occurring in day-to-day life, while the colon mucosa under the effect of the medication can be rendered to absorb the unusual substance also from the large gut. Favoring this view modern medical science is suggestive of some of the nutrient enemas meant for the nutrition of the body, where absorption of carbohydrate, fat and protein is mentioned.^[21]

Observation of modern medical science that administration of sodium chloride improves fat absorption^[21] is curiously coinciding with the usage of salt designed by Ayurvedic medical authorities in *Sadyo-Snehana*^[22] and in many *Basti Dravya* preparations along with the different *Sneha Dravyas*. Charaka narrates the role played by *Lavana* along with the *Sneha* by the words “*Lavanopitaha Snehana Snehayantyachiratanaram*.”^[23] Charaka while assessing the *Anuvasana Basti* records the digestion of *Sneha* by the words “*Sneham Pachati Pavakah*”^[24] and after digestion *Dravyas* can be absorbed to cause the affect on the body.

Conclusion

Anuvasana Basti with *Ksheerabala Taila* was significant in reducing the subjective symptoms of *Sandhigata Vata*. There was no significant improvement in radiological findings.

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हिन्दी सारांश

संधिगत वात मे क्षीरबला तैल अनुवासन बस्ति का परिणाम

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संधिगत वात सबसे आम संयुक्त विकार है। संधिगत वात का ओस्टियो आर्थराइटिस के साथ सहसंबद्ध किया जा सकता है। आधुनिक चिकित्सा से संधिगतवात का तात्कालिक उपचार मात्र होता है। आयुर्वेद के आचार्यों ने इस व्याधि के लिये अत्यंत परिणामकारी चिकित्सा बतायी है। इस व्याधि मे स्नेहन, स्वेदन, घृतपान, बस्ति और गुग्गुलु प्रयोग प्रमुख है। इस अध्ययन मे ३० संधिगतवात के रोगियों मे क्षीरबला तैल से अनुवासन बस्ति दी गई। अनुवासन बस्ति वेदना, कोमलता, जकड़न, चरचराहट और सूजन कम करने मे लाभकारी है। यह चिकित्सा संधिगतवात के रोगियों मे जीवन की गुणवत्ता मे सुधार ला सकती है।