

## Role of *Siddha Ksheer Basti* in the management of *Sandhigatavata* w.s.r. to effect on Calcium level

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### RESEARCH ARTICLE

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#### ABSTRACT

*Sandhigata Vata* (osteoarthritis) is *VataVyadhi* which is associated with *Kshaya* of *Dhatus* especially in *Vridhdhavastha*. Ayurveda mentioned various therapeutic options for the management of this condition and *Basti Karma* is one such approach. *Tikta Dravya Siddha Basti* advised for *Asthi Kshaya Janya Roga* since *Sandhigata Vata* is also *Asthi Kshaya Janya Roga* hence in present study we selected *Tikta Dravya Siddha Basti* for the management of *Sandhigata Vata*, study based on ancient texts available in *Rasatarangini*. The study observed marked improvement in diseases symptoms and elevation in calcium level may be due to the *Yapana*, *Brimhana*, *Shodhan* and *Vata shamak* properties of *Tikta Dravya Siddha Ksheer Basti*.

**Keywords:** *Ayurveda, Sandhigata Vata, Osteoarthritis, Basti*

#### 1. Introduction

*Sandhigata Vata* is considered *Vatavyadhi* in which vitiation of *Tridoshas* especially *Vata* play pivotal role towards the disease pathogenesis. *Sandhigata Vata* is *Asthi Kshaya Janya Vyadhi* thus can be correlated with osteoarthritis as per modern science. *Sandhigata Vata* mainly possesses symptoms of *Shotha*, *Shool* and *Akunchana*. *Sandhigata vata* mainly occurs in elderly age groups due to the degenerative process of tissues and cells. The disease associated with restriction in movement mainly due to the presence of *Shool* and *Shotha* as chief symptoms which increase during movement. The *Kshaya* (degeneration) mainly occurs due to the excess intake of *Vata Vardhak Ahara*. The indulgence in *Vihara* like *Diwaswapana*, *Ativyayama* and *Vegadharana*, etc. can also vitiates *Vata*.

The pathological progression of disease take places as depicted in **Figure 1**.

#### *Samprapti Ghataka*

- ✓ *Nidana*      *Vata Prakopaka Nidana*
- ✓ *Dosha*      *Vata*
- ✓ *Dushya*     *Asthi, Majja*
- ✓ *Srotas*      *Asthivaha, Majjavaha*
- ✓ *Agni*        *Manda*
- ✓ *Vyaktisthana*      *Asthi – Sandhi (1-5)*

Modern science described various risk factors related to the prevalence of osteoarthritis, these risk factors are: age, sex, genetic factors, joint trauma, obesity, inflammatory joint disease and metabolic disorders.

Ayurveda *Acharyas* mentioned different treatments for *Sandhigata Vata*

including *Swedana*, *Basti*, *Snehana* and *Mridu Virechana*, etc. *Basti Karma* considered as effective therapeutic modality for *Vata Roga* therefore present

study focuses to measure effect of *Basti Karma* in *Sandhigata Vata*. (6-11)



**Figure 1.** Pathogenesis of *Sandhigata Vata*

### **Aims and Objectives**

To evaluate effect of *Tikta Dravya Siddha Ksheer Basti* in *SandhigataVata* w.s.r. to effect of therapy on calcium level in osteoarthritis.

### **Study Design**

Randomized, observational and prospective study.

### **Ethical Committee Clearance**

The informed written consent form had been obtained from every participant prior to study as per guideline. As this is a clinical research, Institutional Ethical committee (IEC) approval was requested for the protocol prior to initiation of research. Adverse drug reactions (ADR) were planned to duly noted and reported. Then the available data was assessed using suitable statistical analysis method i.e. paired t-test.

## **2. Material and Method**

Patients having signs and symptoms of *Sandhigata Vata* were selected from O.P.D

& I.P.D of Shubhdeep Ayurved Medical College & Hospital (P.G. Institute), Indore (M.P.). Patients were selected irrespective of their sex, religion, occupation and economical status etc.

### **Inclusion Criteria**

- ❖ Male and female patients with clinical features of *Sandhigata Vata*
- ❖ Patients belongs age group between 30-60 years
- ❖ Patient willing to participate in trial

### **Exclusion Criteria**

- ❖ Patient who were below 30 and above 60 years of age
- ❖ Patients suffering from other chronic disease along with osteoarthritis
- ❖ Lactating and pregnant women
- ❖ Weak or emaciated patients

### **Sample Size**

30 patients

### **Drug/Formulations**

#### *Tikta Dravya Siddha Ksheera Basti*

❖ <i>Shadhit Ksheer ml</i>	400
❖ <i>Ghrita</i>	25 ml
❖ <i>Madhu</i>	20 ml
❖ <i>Murchittaila</i>	25 ml
❖ <i>Kalka</i>	5 gm
❖ <i>Saindhava</i>	5 gm

### **Preparation of Basti dravya**

*Tikta Ksheer* was prepared by adding *Ksheer* and water in 1:4 ratios, the mixing of *Basti Dravya* was done as per classical method. *Basti* was prepared as mentioned in *Charak Samhita*, *Tikta Ksheer* was prepared by adding 400 ml of *Ksheer* and four times i.e; 1600 ml of water. *Kalka Dravyas* were added into it and it was allowed to boil till one- fourth content remains. Then *Basti* was prepared by adding *Madhu*, *Saindhava*, *Ghrita*, *Til Taila*, *Kalka* and *Siddha Ksheera* as per classical method.

### **Route of Administration**

Anal Route

### **Dose**

Once in morning after meals (480 ml)

### **Protocol/Procedure of Treatment**

*Tikta Dravya Siddha Ksheer Basti* was given to every patient for 15 days and follow up was taken after 15 days. The *Basti* was given by enema method in a dose of 480 ml. Procedure was performed in three stages as; *Purva Karma*, *Pradhana Karma* and *Paschat Karma*.

### **Purva Karma**

Proper assessment of patient was done before administering *Basti*, patients were advised to take light diet day before procedure.

### **Pradhana Karma**

The patient was asked to take meal which is neither too *Snigdha* nor too *Ruksha* in less quantity compared to quantity of daily meal. *Abhyanaga* with *Tila Taila* was done on *Kati* and *Udara Pradesha* before administering *Basti*. Thereafter, *Nadisweda* was performed and patient was advised to take left lateral position with left lower extremity straight and right lower extremity flexed on knee and hip joint. The patient was asked to keep his left hand below the head, that after 480 ml of luke warm *Tikta Dravya Siddha Ksheer Basti* was taken in container and rubber catheter oiled with *Tila Taila* was attached to enema tube. After that, rubber catheter was administered into the anus of the patient up to the length of 4 inches. The patient was asked to take deep breath while introducing the catheter and drug. The total *Basti Dravya* was not administered in order to avoid entrance of *Vayu* into the *Pakvashaya* which may produce pain.

### **Paschat Karma**

Patient was advised to lie in supine position after administration of *Basti* and patient's buttocks were gently tapped and legs were raised few times so as to raise the waist. All these were done to prevent the fluid from flow out too soon. Patients were advised to take *Laghu Ahara*.

### **Investigations**

The clinical examinations of relief in symptoms and quantitative analysis of calcium level was done before and after treatment.

### **3. Results**

The *Basti* therapy exhibited marked improvement in parameters like; *Sparshasahayata*, *Sandhi Shotha*, *Sandhishula*, *Sandhigraha*, *Akunchana-Prasarana Vedana* and *Sandhisphutana*.

The determination of calcium level before and after treatment was performed using sensitive and specific Arsenazo III method. The method based on the reaction

between calcium and Arsenazo III at a neutral pH to form a blue purple coloured complex. The intensity of this color complex is directly proportional to the amount of calcium present in the sample. The intensity of color complex was measured as absorbance peak at 600-660 nm.

The normal reference values of serum / plasma calcium level ranging from 8.7 to 11.0mg/dl, study observed calcium level 8.98 after therapy which was found to be 8.19 before treatment. This indicated that calcium level changes from 8.19 to 8.98 due to the effect of therapy. Paired t test confirmed statistical significant result at “p” value <0.001 as depicted in **Table 1**.

**Table 1.** Effect of therapy on calcium level after and before treatment

Clinical features	Mean		S.D		SEM		“t” value	‘p’ value
	BT	AT	BT	AT	BT	AT		
Calcium Level	8.19	8.98	0.49	0.53	0.09	0.09	10.4	<0.001

The increase serum calcium level contributed towards the overall beneficial effects of therapy and it was found that maximum 60% patients had moderate improvement while 23.33% patients observed with marked improvement and 17.7% patients acquired mild improvement. Therefore it was suggested on the basis of findings of study that symptoms of osteoarthritis relived significantly after the application of *Tikta Dravya Siddha Ksheera Basti* in diseased patients and improvement in calcium level can be attributed to the therapeutic benefits of therapy.

#### 4. Discussion

*Ksheera*, *Tila Taila* and *Ghrita* have *Snigdha guna* which increases *Snigdhatva* of *Basti* thus pacify *Vata dosha*. The ingredients increases calcium and helps in maintaining calcium levels in the body thus improves health of bony tissues. The optimum calcium level relived cardinal symptoms of osteoarthritis while constituents present in *Tikta Dravya* and *Ghrita* offers estrogenic action thus decrease osteoclastic activity, increase bone matrix formation and improves deposition of minerals. Maximum calcium absorption occurs in jejunum and ileum and some calcium is also absorbed from

colon. Hence when *Basti dravya* reaches colon then calcium absorption take places.

The therapy improved subjective parameters of diseases i.e. *Sandhishotha*, *Sandhisphutana*, *Sandhishhula*, *Sandhigraha*, *Prasarana*, *Vedana* and *Akunchana*. The relief in these subjective parameters might be resultant of improvement in objective parameters i.e. vitamin D level and calcium levels. Significant improvement is seen in serum calcium level which may be due to the rapid and direct absorption of *Basti* from large intestine. *Tikta Dravya Siddha Ksheer Basti* was found to be effective for *Asthi Dhatu Vikruti*.

#### 5. Conclusion

*Tikta Dravya Siddha Ksheer Basti* exhibited significant effect on symptoms of *Sandhigata vata* i.e. *Sandhisphutana*, *Sandhi Shotha*, *Sandhishhula*, *Sandhigraham*, *Vedana* and *Akunchana*. *Basti* was prepared by adding *Madhu*, *Saindhava*, *Ghrita*, *Til Taila*, *Kalka* and *Siddha Ksheera* as per classical method. The components of formulation produced *Dhatu samya*, help to restore equilibrium of body elements and increases body constituents requiring for tissue regeneration. The beneficial effects of *Siddha Ksheer Basti* in *Sandhigata vata*

are resultants of effect of therapy on serum calcium level. The improvements in serum calcium level after therapy brings symptomatic relief in *Sandhigata vata* therefore marked improvement in subjective parameters was observed. Study concluded that *Tikta Dravya Siddha Ksheer Basti* can be advised effectively for the management of *Sandhigata vata*, however, further studies are required to explore exact mechanism of action of therapy in osteoarthritis.

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### Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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