Application of Snigdha Sankara Sweda in the Management of Janu Sandhigata Vata: A Clinical Study

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ABSTRACT
Sankara sweda is one amongst the 13 varieties of sweda explained by Acharya Charaka and it can be included under Ushma sweda amongst the 4 classes of sweda. Sankara sweda can be administered as both ruksha and snigdha variety by changing the drugs. It can be indicated both in ekanga and sarvanga vyadhi.

Sandhigata vata is a vatavyadhi which is explained elaborately in Ayurveda classics. Various vata prakopaka nidana are the major causative factors for vatavyadhi. In Parihani kala, dhatukshaya is predominant, also increases the risk of vata prakopa. When vata increases, it has a negative impact on asthi dhatu that leads to quantitative and qualitative kshaya of asthi dhatu. Clinical manifestations of Janu sandhigata vata include sandhishotha, akunchana prasaranayo vedana, atopa and sandhi gati hanana. In modern parlance these symptoms mimic Osteoarthritis of knee joint.

Along with the general treatment of vata vyadhi, Snigdha sweda is a modality of choice in case of dhatu kshaya janya vata vyadhi. In this study, snigdha variety of Sankara sweda was administered to 15 patients diagnosed as Janu sandhigata vata for 7 consecutive days. After statistical analysis of the data collected before and after the treatments, the relief brought about by the treatment was found to be significant and the overall effect of treatment on majority of the symptoms of janu sandhigata vata was promising.

KEYWORDS
Sankara sweda, Janu Sandhigata Vata, Osteoarthritis
INTRODUCTION

In parihani kala of vaya, it is a normal phenomenon that rasadi dhatu enter a phase of kshaya, which leads to vata vriddhi. When such vitiated vata gets lodged into a sandhi with pre-existing kha-vaigunya, it leads to Sandhigatavata. Sandhigata vata is a yapya vyadhi as it involves marma-asti-sandhi that forms the madhyama roga marga. Clinically, Sandhigatavata is characterized by Vata purna dhriti sparsha, shopha and vedana during prasarana-akunchana.

In modern parlance the signs and symptoms of janu sandhigata vata closely mimic osteoarthritis of knee joint. Pain, swelling, morning stiffness, crepitus and restricted joint movements are the cardinal features of Osteoarthritis. Osteoarthritis is characterized by cartilage loss with an accompanying periarthicular bone response. Pathologically, there is an alteration in cartilage structure and clinically some patients complain of pain and disability.

There is a steady raise in the prevalence of osteoarthritis with age such that by 65 years 80% of people have radiographic evidence of OA. Knees and Hips are the most common sites of Osteoarthritis.

Acharya Sushruta has mentioned snehana and swedana as general treatment for sandhigata vata. Sneha yukta swedana is a modality of choice in case of Dhatu Kshaya janya vata vyadhi. So, in this study snigdh sankara sweda, i.e. snigdha variety of Ushma sweda has been taken up as the treatment modality for Janu sandhigata vata. Laghu vishagarbha taila is the sneha selected for the administration of snigdha swedana. It is a formulation explained in Yogaratnakara, where it has been indicated in all kinds of vatavyadhi. Pinda made out of Vata-kaphahara patra (Arka, Eranda, Nirgundi, Dhattura and Punarnava) and powdered dhanya (Yava, Masha, Tila, Kola and Kulattha) prepared with Laghu vishagarbha taila was used to carry out Snigdha sankara sweda.

Hence, this study is conducted with the goal of evaluation of the efficacy of Snigdha Sankara Sweda in the management of Janu Sandhigata vata/Osteoarthritis of Knee joint.

METHODOLOGY

Ethical committee clearance number is SDMCAU/ACA-49/ECH26/15-16.

Materials and Methods

Drug source: Laghu vishagarbha taila and Sankara sweda mishrana raw drugs were purchased from local area after proper authentication and prepared at SDM Ayurveda Pharmacy, Udupi. Fresh leaves needed for snigdha...
sankara sweda were collected from the herbal garden of SDM College of Ayurveda, Udupi.

Sample source

Fifteen patients diagnosed as Janu sandhigata vata fulfilling the inclusion criteria, irrespective of their gender, approaching the OPD and IPD of SDM Ayurveda Hospital, Udupi were selected for the study.

Method of collection of data

15 patients of either gender was included in the clinical study. Patients were selected on the basis of clinical examination; detailed proforma was prepared by incorporating the signs and symptoms of janu sandhigata vata and osteoarthritis of knee joint.

Study design

- Study type: Interventional
- Allocation: Randomized
- Endpoint classification: Comparative efficacy study
- Intervention model: Double group assignment
- Primary purpose: Treatment
- Masking: Open label

Intervention:

Preparation of pinda

Quantity sufficient leaves of arka, eranda, nirgundi, dhatura and punarnava were collected, cleaned with hot water, wiped off with a cotton cloth and chopped. Heating pan was kept over the flame and about 100 ml of laghu vishagarbha taila was added to it. Once the oil got hot, cleaned and chopped fresh leaves were added to it. About 10 gm of saindhava was added and the leaves were stirred constantly. After the leaves lost some moisture and became soft, 2 lemons were cut into pieces and added to the iron pan. When the leaves lost most of the water, sankara sweda mishrana was added and the mixture was heated over a low flame and stirred to create a homogenous mixture. Once the homogenous mixture was attained, the heated mixture was taken in a piece of cloth and tied in the form of a bolus with a tuft of cloth above it to hold.

Heating the prepared pinda:

15-20ml. of Laghu vishagarbha taila was put on the pan and heated. Once the oil got heated, the pinda was immersed in the pan. When the pinda was sufficiently hot, it was taken out of the pan, any extra oil from the pinda was removed and used to do abhyanga to the knee joints initially followed by giving sudation to the affected joint.

Snigdha sankara sweda was performed for 30 minutes after sthanika abhyanga with Laghu vishagarbha taila for 7 consecutive days.

Patients were explained and instructed to follow the parihara vishaya of swedana.
Follow up study: 7 days after completion of course of treatments.

Inclusion criteria: Patients of either gender aged between 40 to 70 years presenting with the signs and symptoms of Janu sandhigata vata/osteoarthritis of knee who were fit for snigdha sankara sweda.

Exclusion criteria: Osteoarthritis secondary to diseases such as rheumatoid arthritis or psoriasis, infective, traumatic and postsurgical conditions of joints and patients with major systemic disorders that may interfere with the course of treatment were excluded from this study.

Assessment criteria:
   i. Subjective parameters: Knee joint Pain using Visual analogue scale and Knee joint Stiffness
   ii. Objective parameters: Knee joint Swelling, Restriction in Range of Knee Joint movements and Tenderness in Knee joint
2. Functional ability index including:
   i. Time taken to walk 30 m.
   ii. Time taken to climb 10 steps of a stair.
   iii. Time taken to do 10 sit-ups.
3. WOMAC Knee Osteoarthritis index.

Statistical Analysis

The outcome of the treatments was statistically analyzed using IBM-SPSS. As the data collected was in ordinal scale and the normality of the data was not assumed, the Wilcoxon signed Rank Test (non-parametric test) was used to compare the values before and after treatments.

OBSERVATIONS

Number of patients registered for the study: 15
Drop outs: None
Number of patients completed the study: 15

Observations of the study have been summarized in Table 1.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>47% of the patients were between 60 to 70 years</td>
</tr>
<tr>
<td>Gender</td>
<td>57% of the patients were Female</td>
</tr>
<tr>
<td>Socio-economic status</td>
<td>57% of the patients belonged to middle socio-economic class</td>
</tr>
<tr>
<td>Nature of work</td>
<td>60% of the patients had standing nature of work</td>
</tr>
<tr>
<td>Prakriti</td>
<td>Vata-Pitta prakriti was seen in 50% of patients</td>
</tr>
<tr>
<td>Vyayama shakti</td>
<td>Poorva kalini - madhyama in 73% Aadhya kalina - avara in 60% of patients</td>
</tr>
<tr>
<td>Body weight</td>
<td>47% of the patients had body weight between 60-70 kgs</td>
</tr>
<tr>
<td>Duration of illness</td>
<td>73% of the patients had the symptoms for &gt;2 years</td>
</tr>
</tbody>
</table>

RESULTS

The results obtained from this study have been summarized in Table 2.

OVERALL EFFECT OF TREATMENT

Among the 15 patients that underwent the treatments, 5 patients i.e. 33% showed
marked improvement, whereas 10 patients i.e. 67% showed moderate improvement from the signs and symptoms of Janu sandhigata vata/ Osteoarthritis of knee joint. Overall effect of treatment has been summarized in Table 3 and Figure 1.

**DISCUSSION**

Swedana has stambhaghna, gouravaghna and sheetaghna properties. Amongst 13 varieties of sagni sweda, sankara sweda was selected which is snigdha in nature which is a representative modality for ushma sweda for local administration in Janu Sandhigata vata. The ushma sweda in present context is evolved from patra bhangena and dhanyena of Vagbhata. In this vatahara and vata kaphahara dravya are selected for the purpose of sankara sweda in the form of patra and dhanya. The majority of the drugs possess the properties such as katu and tikta rasa, ushna virya along with laghu guna and ruksha guna has got vata-kaphashamaka properties. Katu and tikta rasa possess an antagonistic property to that of vata & kapha which are the chief causative factors that lead to this disease. Because of ushna virya, it also alleviates vitiated vata. Hence pain, swelling, tenderness and stiffness in the joints were reduced.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>W.S.R Test* (Z)</th>
<th>p Value</th>
<th>Level of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain in right knee joint</td>
<td>-3.542</td>
<td>&lt;0.001</td>
<td>Highly significant</td>
</tr>
<tr>
<td>Pain in left knee joint</td>
<td>-3.508</td>
<td>&lt;0.001</td>
<td>Highly significant</td>
</tr>
<tr>
<td>Stiffness in right knee</td>
<td>-3.606</td>
<td>&lt;0.001</td>
<td>Highly significant</td>
</tr>
<tr>
<td>Stiffness in left knee joint</td>
<td>-3.494</td>
<td>&lt;0.001</td>
<td>Highly significant</td>
</tr>
<tr>
<td>Swelling in right knee joint</td>
<td>-2.972</td>
<td>0.003</td>
<td>Statistically significant</td>
</tr>
<tr>
<td>Swelling in left knee joint</td>
<td>-3.051</td>
<td>0.002</td>
<td>Statistically significant</td>
</tr>
<tr>
<td>Tenderness in left knee joint</td>
<td>-3.520</td>
<td>&lt;0.001</td>
<td>Highly significant</td>
</tr>
<tr>
<td>Range of movement in right knee joint</td>
<td>-3.690</td>
<td>&lt;0.001</td>
<td>Highly significant</td>
</tr>
<tr>
<td>Range of movement in left knee joint</td>
<td>-3.358</td>
<td>0.001</td>
<td>Highly significant</td>
</tr>
<tr>
<td>WOMAC Scores</td>
<td>-3.626</td>
<td>&lt;0.001</td>
<td>Highly significant</td>
</tr>
<tr>
<td>Time taken to walk 30 meters</td>
<td>-3.508</td>
<td>&lt;0.001</td>
<td>Highly significant</td>
</tr>
<tr>
<td>Time taken to do 10 Sit-ups</td>
<td>-3.542</td>
<td>&lt;0.001</td>
<td>Highly Significant</td>
</tr>
<tr>
<td>Time taken to climb 10 steps</td>
<td>-3.578</td>
<td>&lt;0.001</td>
<td>Highly Significant</td>
</tr>
</tbody>
</table>

*Wilcoxon Signed Rank Test

**Table 3 “Overall effect of treatment”**

<table>
<thead>
<tr>
<th>Overall effect</th>
<th>No of patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unchanged</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mild improvement</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Moderate improvement</td>
<td>10</td>
<td>66.67</td>
</tr>
<tr>
<td>Marked improvement</td>
<td>5</td>
<td>33.33</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100</td>
</tr>
</tbody>
</table>

Fig 1 "Overall Outcome"
To explain it further, *tiryagkata dhamani* plays an important role in the mechanism of action of *bahirparimarjana chikitsa*. Sushrutha in *shareerasthana* while explaining *tiryagkata dhamani* narrates that these *dhamani* are attached to *romakupa* and the medicament which is administered in the form of the *pinda sweda* undergoes skin metabolism with the help of *bhrajakagni*, where in *vira* of the medicaments enters into the systemic circulation thereby achieving the desired actions.

Samyak swinna lakshana:
*Sankara sweda* being *ekanga sweda* variety could not elicit entire *samyak swinna lakshana* in whole body. The lakshanas like *sheeta vyuparama*, *shoola vyuparama*, *stambha-gaurava nigraha*, *mardavata* and *sweda pradurbhava* were observed locally i.e. over the knee joints. *Swedanat virati* was not observed as it is a *mridu* variety of *sweda*.

**CONCLUSION**

Hence, *Snigdha sankara sweda* was found to have significant efficacy in *Janu sandhigata vata*. The modality showed promising results in all the assessment criteria of this study. The relief in pain and tenderness can be associated to *vataghna* and *shoolahara* properties, reduction in stiffness and increased range of movement of knee joint can be attributed to the *stambhaguna* property and the reduction in swellings can be associated with the *shothahara* properties of the drugs. All these positive changes resulted in increased functional ability.
REFERENCES


