A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFECT OF SAHACHARADI KWATHA AND NAGARADI KWATHA IN THE MANAGEMENT OF JANUSANDHIGATAVATA

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ABSTRACT
Knee is the most important weight bearing joint in the body, when it gets affected by Osteoarthritis, it results in marked work disability. There is a steady rise in prevalence from age 30-65 years. Women’ were more prone for OA. It is characterized by Sandhi Shoola, Shotha, Prasarana Aakunchana Pravruttischedana, this can be correlated with Osteoarthritis of Knee Joint. Hence an effort is to make to evaluate and compare the effect in the management of JanuSandhigatavata with Sahacharadi Kwatha and Nagaradi Kwatha which contains the drugs having the properties like vatahara, Shothahara and vedanasthapana. A randomized comparative clinical study of two groups, consisting of 20 patients in each group were Group A with Sahachardi kwatha 50ml and Group B with Nagaradi kwatha 50ml twice daily for 30 days. The comparative effect of treatments in Group &Group B had shown statistically highly significant difference in the effect on Pain, Range of movements & Tenderness. The percentage of relief for Pain in Group A is 47.36% and in Group B it is 18.5%.In Range of movements the percentage of relief found to be 7.33% in Group A and 2.94% in Group B. Similarly in tenderness the percentage of relief is 50% in Group A and 21.42% in Group B. There is no effect on swelling, crepitus & WOMAC between the group comparisons. On comparing both groups statistically & clinically Group A had shown better effect.

Keywords: Janusandhigatavata, Sahachardikwatha, Nagardi Kwatha, Osteoarthritis.

INTRODUCTION
Knee is the most important weight bearing joint in the body, when it gets affected by Osteoarthritis, it results in marked work disability. It is one such common degenerative disorder characterized by degeneration of joint cartilage and adjacent bone that can cause symptoms like pain, swelling, restricted mobility and stiffness of joint¹. Osteoarthritis is the leading cause of disability in India affecting over 15 million Indians each year Osteoarthritis² is commonly present unilaterally in the knee joint, which the most important weight is
bearing joint in the body. Osteoarthritis of the knee joint is the most common joint disorder seen in elderly people. Due to similarities in signs and symptoms, it can be very much correlated to Janusandhigata vata. In classics Janusandhigatavata is characterized by Sandhi Shoola, Shotha, Prasarana Aakunchana Pravruttischavedana. Osteoarthritis is the most common articular disorder that begins asymptptomatically in the 2nd and 3rd decades and is extremely common by age 60. Studies reveal there is a steady rise in prevalence of OA from age 30 such that by 65, 80% of people have radiographic evidence of OA, though only 25-30% is symptomatic. It is a slowly progressing degenerative disorder. Due to the increased prevalence of this disorder it has become a major problem and burden for society, as it indirectly reduces the working potency resulting in dependency. It limits everyday activities such as walking, dressing, bathing etc thus making individual partially or even fully handicapped.

Potent analgesics and anti-inflammatory drugs are available in the market, which run the risk of producing side effects like gastric erosion, hepatic and nephro toxicity, etc. Even surgery has a statistical failure rate of 10% in knee replacements. One of the current limitations of contemporary science is the lack comprehensive and effective management. Research work in Ayurveda has a large scope in this condition.

Charaka was the first person who separately described the disease named “Sandhigata Anila”, but he has not included it among the 80 types of Nanatmaja Vyadhi. Sushruta and Vagbhata also gave importance to Sandhivata and included in the chapter of Vata Vyadhi. When Vata involves Janu Sandhi, it is named Janu Sandhigatavata Sandhigatavata is a Dhatukshayaja vyadhi and occurs usually after mid life stage. Here mainly asthivaha and majavaha srotodusti was observed Prakupita vata dosha creates Sandhishoola, while due to kapha kshaya particularly decrease of sleshmaka kapha, Sandhi garshana takes place and symptoms like Sandhi shotha, vedana etc occurs. So considering all the above factors here in Sandhigatavata, the drug which have ushna veerya vedanahara, shothahara, Shoolahara and vedanasthapana properties are useful.

The present study aims to explore the efficacies of Sahacharadi kwatha and nagaradi kwatha in Janusandhigatavata. The drugs of both formulations share the common properties of Vatahara, Ushna veerya, Shothahara and vedanasthapana which must be contributing to the efficacies of the drug. Here an effort has been made to evaluate and compare the efficacy of Sahachardi kwatha and Nagaradi kwatha in Janusandhigatavata.

AIM:
The present work was undertaken to compare the clinical efficacy of Sahacharadi kwatha and Nagaradi kwatha in the Janusandhigatavata.

SOURCE OF DATA:
LITERARY SOURCE
All the classical books like Brihatrayi’s and Laghutrayi’s and modern literature and contemporary text including the website about the disease, drug and procedure is reviewed and documented for the intended study.

SAMPLE SOURCE
Patient suffering from Janusandhigatavata were selected from the Kayachikitsa OPD and IPD of Alva’s Ayurveda Medical College and Hospital, Moodbidri and from other medical camps and referrals.

DRUG SOURCE
The drugs were selected from local areas, markets after proper identification. Thaila and Choornas were prepared in Alva’s Pharmacy, Mijar.
METHOD OF COLLECTION OF DATA:
Study design - Single Blind Randomized Comparative Clinical Study
Sample size- A minimum of 40 patients fulfilling the diagnostic and inclusion criteria of Janusandhigatavata of either sex are selected for the study and randomly assigned into 2 equal groups.
Group A – Sahacharadi Kwatha
Group B – Nagaradi Kwatha.
Sampling method - Simple Random Sampling Method.
Diagnostic criteria:
The patient is diagnosed based on the following clinical features.
- Sandhi Shoola-Pain in Knee joints
- Sandhi Shotha- Knee Joints swelling
- Sandhi Atopa- Crepitation
- Prasaarana and Aakunchana Apravrutti - Limited range of movement
Inclusion Criteria:
- Patients fulfilling the Diagnostic criteria of Janusandhigatavata.
- Patient’s age group between 30 to 70 years of either sex.
- Patients without any anatomical deformity.
Exclusion Criteria:
- Patients suffering from disease like D.M, Carcinoma, Psoriatic Arthritis, Gout Arthritis, Syphilis, S.L.E, Polymyalagia and Tuberculosis and other similar systemic diseases are excluded.
- Acute injuries will be excluded.
MATERIALS
For the present study, Sahacharadi Kwatha and Nagaradi kwatha were chosen as the formulations for janusandhigatavata on the basis of textual reference available in Sahasrayogam Parishita Prakarana, Sharangadhara and Yoga Ratnakara.
Ingredients of the both formulations
Sahachardi kwatha: Sahachara, Suradaru, Kulatta, Haridra, DaruHaridra, Puskara mula, Amlavetasa.
Nagardi kwatha: Nagara, Eranda, Hingu, Indrayava, Saindhava Lavana.
Method of Medicine preparation
SAHACHARADI KWATHA
The kashaya was made in a single batch. All the drugs were taken in equal quantity i.e. 1.3 kg each drug so in total 9kgs was taken, made in to coarse powder, 144 liters of water was added &heated on Mandagni. It was subjected to Mandagni until it was reduced to 1/4th. The kashaya thus obtained was filtered through a cloth and was collected in a clean sterile container. After cooling, it was preserved by adding Sodium Benzoate powder. The kashaya was filled in bottles and sealed.
NAGARADI KWATHA
The kashaya was made in a single batch. Nagara, Eranda & Indrayava were taken 2.8kg each, and Prakshepaka dravyas such as hingu and saindhava lavana were added in the quantity 300 gm each so in total 9kg was taken, made in to coarse powder, 144 liters of water was added& heated in Mandagni. It was subjected to Mandagni until it was reduced to 1/4th. The kashaya thus obtained was filtered through a cloth and was collected in a clean sterile container. After cooling it was preserved by adding sodium benzoate powder. The kashaya was filled in bottles and sealed.
Intervention
The interventions of clinical study were carried according to the individual groups mentioned below. These groups assigned as A and B was treated with Sahacharadi kwatha and Nagaradi kwatha respectively.
Treatment Chart
The patients fulfilling the criteria for inclusion are randomly assigned into 2 groups, each comprising of 20 patients.
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### Treatment period
Patients were assessed clinically on day 0 (BT), 31st and 46th day (After 15 days of follow up)

### Investigation
Routine blood investigations along with x-ray of the affected knee joint AP and lateral views were carried out before the clinical study to confirm diagnosis.

### Assessment of variables:
Clinical assessment is made for severity of disease and for the clinical improvement. Grading for the severity of individual symptoms was framed for point scale. The grading of variables was given along with clinical prforma especially formatted for the study on Janusandhigatavata.

### DISCUSSION
**Discussion on effect of treatment on signs and symptoms**

**Pain:**
According to statistical analysis Group A had shown highly significant effect p<0.001 whereas group B had shown only significant effect on pain p<0.05. On comparison between group there is highly significant effect (p<0.001) was found. It means Group A had shown better effect than Group B. It might be because of the better shoolahara property of Sahacharadi kwatha.

**Swelling**
According to statistical analysis both the treatment have response on the parameter swelling and both groups are highly significant (p<0.001). On comparison between groups it showed insignificant effect (p>0.05). It means both the groups had equal effect. It might be because of the ushna veerya, shothahara, vedanasthapan property present in Sahacharadi kwatha and Nagaradi kwatha.

**Range of movements**
According to statistical analysis Group A had shown highly significant effect (p<0.001) whereas group B had shown only significant effect on Range of movements (p<0.05). On comparison between group there is highly significant effect (p<0.001) was found. It means Group A had shown better effect than Group B in the criteria of range of movements. It might be because of vedanahara, vatakaphahara property of Sahacharadi kwatha.

**Tenderness**
According to statistical analysis Group A had shown highly significant effect (p<0.001) whereas group B had shown only significant effect on Tenderness (p<0.05). On comparison between group there is highly significant effect (p<0.001) was found. It means Group A had shown better effect than Group B in the criteria of Tenderness. It might be because of ushnavareeya & better vedanahara, vatakaphahara property of Sahacharadi kwatha.

**Crepitus**
According to statistical analysis Group A & Group B had shown significant effect on crepitus (p<0.05). On comparison between the group it had shown insignificant effect (p>0.05). It means both the Group had shown equal effect on the parameter crepitus. It might be because of shoolahara and vedanahara property of both the kashayas.

**WOMAC**
According to statistical analysis both the treatment have response on the parameter WOMAC and both

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**GROUPS** | **Dosage** | **Time of Administration** | **Duration of Treatment** | **Anupana**
---|---|---|---|---
GROUP A (Trial drug 1) *Sahacharadi Kwatha* | 50ml | Twice daily before food. | 30 days | *Ushnodaka* (warm water)
GROUP B (Trial drug 2) *Nagaradi kwatha* | 50ml | Twice daily before food. | 30 days | *Ushnodaka* (warm water)
groups were highly significant (p<0.001). On comparison between groups it showed insignificant effect (p>0.05). It means both the groups had equal effect. It might be because of the ushna veerya, shothahara, vedanasthapana property present in sahacharadi kwatha and Nagaradi kwatha

Discussion on Probable mode of action of both Kwathas

Probable mode of action of Sahacharadi Kwatha
- It contains Sahachara, Suradaru, Kulatta, Haridra, Daruharidra, Puskara mula, Amlavetasa.,
- This kashaya is vatahara having specificity in vatavyadhis pertaining to lower extremities.
- Sahachara possesses tikta and madhura rasa devadaru has tikta rasa and nagara has katu rasa contributing to kapha vatahara property of the formulation
- By the virtue of Ushna veerya it act as vatakaphahara, vedanashamaka and avaranahara
- Due to katu vipaka the formulation is kaphahara
- The GC MS analysis of sahacharadi kashayam revealed the possible presence of some molecules like eugenol, abietic acid, sesquiterpenes, n-hexadecanoic acid having antioxidant properties.

Probable mode of action of Nagaradi Kwatha
- Drugs in this formulation include nagara, eranda, hingu indrayava, saindhava lavana
- The phalashruti of this formulation specifies that it is indicated in vatavyadhis like sandhipeeda, sarvangapeeda etc.
- Most of the drugs having tikta katu rasa contributing to kapha vatahara property of the formulation.
- Most of the drugs having ushna veerya it act as Shothahara, vedanasthapana, Shoola prashamana
- As it contains hingu & saindhava lavana which acts as Deepana Pachana.

OVERALL EFFECT OF THE TREATMENT SHOWING OVERALL EFFECT OF TREATMENT

<table>
<thead>
<tr>
<th>Effect of therapy</th>
<th>GROUP A No of pts</th>
<th>%</th>
<th>GROUP B No of pts</th>
<th>%</th>
<th>TOTAL No of pts</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPLETE RELIEF (100%)</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>MARKED RELIEF (76 - 99%)</td>
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<td>0</td>
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<td>MODERATE RELIEF (51 - 75%)</td>
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<td>15%</td>
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<td>0</td>
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<td>7.5%</td>
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<td>80%</td>
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<td>25%</td>
<td>21</td>
<td>52.5%</td>
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<td>5%</td>
<td>15</td>
<td>75%</td>
<td>16</td>
<td>40%</td>
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</table>
CONCLUSION

Majority of the drugs in Sahacharadi kwatha and Nagaradi kwatha have ushna veerya, Vatahara, Shoolahara. So by their virtue, they help in breaking the samprapti of Janusandhigatavata. There for helps in relieving the pain and inflammation of joints. Treatment response to the parameters such as Pain, Tenderness, & Range of movements there is statistically highly significant difference between the two groups. In this it is found that Group A had shown better effect than Group B. The other parameters such as swelling, crepitus and WOMAC both group had shown statistically insignificant effect difference between the two groups. It means both group are having equal effect. There is 15% Moderate relief in Group A and 7.5% Group B. There is 80% Mild relief in Group A and 52.5% in Group B. Similarly there are 5% POOR RELIEF in Group A and 40% in Group B. So it has concluded that after treatment, SahacharadiKwatha is more effective than NagaradiKwatha in the management of JanuSandhigatavata. So the Hypothesis H1 accepted

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