AGNIKARMA WITH PANCHADHATU SHALAKA IN JANUSANDHIGATA VATA
(OSTEOARTHRITIS OF KNEE JOINT)

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ABSTRACT
Pain is an unfavorable sensation, which may bring an individual a halt from his routine works. The condition is more painful when mobile joints like Janusandhi (knee joint) of the body are involved. The disease Sandhigata Vata is prone to be manifested in the knee joint. The dominance of Vata dosha is seen in the pathogenesis of Sandhigata Vata. The symptoms of Sandhigata Vata described in Sushrut Samhita are Sandhi vedana (joint pain) and Shotha (swelling), due to these symptoms stiffness and crepitus develop, which may be correlated with disease osteoarthritis (O.A) in modern parlance. Agnikarma (Cauterization) is one which gives instant relief from pain by balancing local Vata and Kapha Dosha without any untoward effects. Aim: To evaluate the efficacy of Agnikarma with Panchadhatu Shalaka in the management of Janusandhigata Vata (OA of knee joint). Materials and Methods: A total of 30 diagnosed patients of Janusandhigata Vata were registered and Agnikarma was done with Panchadhatu Shalaka in four sittings. Assessment in relief of signs and symptoms was done by weekly interval, and Student's t-test was applied for statistical analysis. Results: The effect of Agnikarma using Panchadhatu Shalaka in various cardinal signs and symptoms as assessed on the 1st week, 2nd week, 3rd week and 4th week reveals a clinically gradual improvement in all signs and symptoms. Conclusion: Agnikarma is effective nonpharmacological, parasurgical procedure for pain management in Janusandhigata Vata (OA of knee joint).

Keywords: Agnikarma, Panchadhatu Shalaka, Osteoarthritis of Knee joint
INTRODUCTION

Pain is an unfavorable sensation, which may bring an individual a halt from his routine works. The condition is more painful when mobile joints like Janusandhi (knee joint) of the body are involved. The disease Sandhigata Vata is prone to be manifested in the knee joint. The dominance of Vata dosha is seen in the pathogenesis of Sandhigata Vata. The symptoms of Sandhigata Vata described in Sushrut Samhita are Sandhi vedana (joint pain) and Shotha (swelling), due to these symptoms stiffness and crepitus develop, which may be correlated with disease osteoarthritis (O.A) in modern parlance. Osteoarthritis is the commonest form of joint disease which cause pain and disability in advancing years of life. Before 60 years of age 1 out of 10 persons (10%) and after 60 years 3 out of 4 (75%) persons suffers from O.A of knee joint. Osteoarthritis also known as degenerative arthritis is a clinical syndrome in which low-grade inflammation of joints, caused by abnormal wearing of cartilage that covers and acts as a cushion inside the joints. Due to the decrease in the quantity of synovial fluid, patient experiences pain upon weight bearing during walking and standing. Osteoarthritis also known as degenerative arthritis is a clinical syndrome in which low-grade inflammation of joints, caused by abnormal wearing of cartilage that covers and acts as a cushion inside the joints. Due to the decrease in the quantity of synovial fluid, patient experiences pain upon weight bearing during walking and standing. In Sushrut, the author of Sushrut Samhita, the Agnikarma has been selected as one of the therapeutic treatment for Osteoarthritis. The existing treatment of O.A are the analgesic and anti-inflammatory drugs being prescribed for its remedy which gives temporary relief and the continuance of chemist drugs give rise to APD and other complications. Hence the patient compels to search complete remedy from the O.A. In chronic O.A the knee replacement by surgical approach may not be possible and affordable for common people and also it does not make fit as be for healthy knee joint. Under the above circumstances the medical research unit finds solution in Ayurveda para surgery. Sushrut, the father of the surgery has advocated the Agnikarma “a direct cauterization procedure” para surgical work for the complete relief of O.A. Agnikarma can be applied for Vataja and Kaphaja vyadhis.
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(the disease of Vata and Kapha dosha), grossly in which O.A is one of them as per doshic consideration. Agnikarma helps to remove the aggravation of both dosha by its opposite heat producing (cauterizing) action.

Hence considering these facts, the current study has been planned to evaluate the efficacy of Agnikarma with Panchadhatu Shalaka in the management of Janusandhigata Vata (OA of knee joint).

MATERIALS AND METHODS
Patients (n = 30) suffering from sign and symptoms of Sandhigata Vata, such as pain, tenderness, crepitus and swelling in knee joint, were registered from OPD and IPD of Shalya Tantra Department, Rajiv Gandhi Ayurveda Medical College, Mahe irrespective of sex, caste, religion, etc. Informed written consent was taken from all the patients.

INCLUSION CRITERIA
- Patient suffering from Janusandhigata Vata (O.A of knee joint)
- Patients between the age group 40-70 years of both sex

EXCLUSION CRITERIA
- Age below 40 years and above 70 years
- Sandhi Vata associated with Diabetes Mellitus
- Associated with other chronic diseases like Paralysis, Parkinson’s disease, Anemia
- Pregnancy
- Sandhigata Vata other than Janusandhigata Vata
- R.A (Rhematoid Arthritis)
- Patients of Cancer, Tuberculosis and AIDS

INVESTIGATIONS
Routine hematological and biochemical investigations such as blood sugar (fasting and postprandial), TLC, DLC, Hb and ESR, Uric acid, RA factor, ASO Titre and Routine Urine analysis were carried out before starting treatment to rule out any other pathology. Radiological examination was carried out before and after completion of treatment.

GROUPING
Total 30 selected patients were randomly selected. (Group A)
- Group-A: Patients were treated by Agnikarma with Panchadhatu Shalaka
  Agnikarma was done in four sittings with a weekly interval.

Requirements
- Agnikarma Shalaka: Specification of panchadhatu Shalaka was depicted in Table 01.
- Triphala Kwatha (decoction): It was used for the cleaning of local part before Agnikarma
Haridra Churna (powder of Curcuma longa L. rhizome): It was used for dusting after Agnikarma (dressing purpose)

Ghritakumari (Aloe barbadensis Miller. leaf): It was used as soothing effect after Agnikarma (dressing purpose)

Yashtimadhu Churna – it was used as healing of wound after Agnikarma

Madhu-Sarpi (honey and ghee): It was used after Agnikarma for healing of wound.

Table 01

<table>
<thead>
<tr>
<th>Constituents</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tamra (Copper)</td>
<td>40</td>
</tr>
<tr>
<td>Loha (Iron)</td>
<td>30</td>
</tr>
<tr>
<td>Yashada (Zinc)</td>
<td>10</td>
</tr>
<tr>
<td>Rajata (Silver)</td>
<td>10</td>
</tr>
<tr>
<td>Vanga (Tin)</td>
<td>10</td>
</tr>
</tbody>
</table>

METHODOLOGY

Procedure of Agnikarma

The procedure performed in three stages as Purva Karma, Pradhana Karma, and Paschat Karma mentioned by Acharya Sushrut.*

Purva karma

Snigdh Picchila Annapana (rice and curd) was given prior to the procedure. The site of Agnikarma is washed with Triphala Kwatha and wiped with dry sterilized gauze and covered with a cut sheet. Panchadhatu Shalaka was heated up to red hot. Ghritakumari pulp, Haridra Churna kept ready for dressing.³

Pradhana karma

In OA of the knee joint, supine position was adopted as it is comfortable to the patient.

Irrespective of a specific site, Agnikarma was done at maximum tender site affected at the knee joint. The minimum space was kept between two Agnikarma points to avoid overlapping of Dagdha Vrana.

After Agnikarma, fresh Ghritakumari pulp was applied on Dagdha to relieve burning pain.

Paschat karma

After wiping of Ghritakumari pulp, honey and ghee was applied on Dagdha Vrana, after that dusting of Haridra Churna was done. Patient was observed for 30 min after procedure and advised Pathyapathya as mentioned in Sushrut Samhita⁴ until the healing of Samyak Dagdha Vrana. Patients were strictly advised not to allow water contact at Dagdha Vrana site for 24 h.

ASSESSMENT CRITERIA

Subjective parameters

The assessment of relief of sign and symptoms was done before and after completion of treatment by following graded subjective parameters.

Objective parameters
The grade of Tenderness and crepitus were noted before and after treatment. The measurement of swelling at knee joint was recorded at three sites that are midpoint of patella, 2 inches above and below patella. The goniometric reading of knee joint on flexion and extension was measured with the goniometer.

Assessment of results and response of therapy

Patients will be graded into 4 groups to assess the overall effect of therapy

1. Cured: 91% to 100% improvement in subjective & objective parameter
2. Marked Improvement: 70% to 90% improvement in subjective & objective parameter
3. Moderate Improvement: 50% to 69% improvement in subjective & Objective parameters
4. Mild Improvement: 25% to 49% improvement in subjective & objective parameters
5. Unchanged: < 25% improvement in subjective & objective parameters.

Statistical analysis

Paired t-test was applied for assessment of individual group

OBSERVATIONS

Out of 30 registered patients, Demographic data of the study that is age, sex, religion, socioeconomic status, etc., are depicted in [Table 2]. Cardinal symptom of OA that is joint Pain and crepitus was observed in most of the registered patients.

Demographic observations

<table>
<thead>
<tr>
<th>Hindu</th>
<th>96.6%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban &amp; Rural</td>
<td>50%</td>
</tr>
<tr>
<td>Middle class</td>
<td>60%</td>
</tr>
<tr>
<td>Dietic habit (Visruddhashana)</td>
<td>36.6%</td>
</tr>
<tr>
<td>Koshta (Madhyama)</td>
<td>50%</td>
</tr>
<tr>
<td>Addiction (Tea)</td>
<td>50%</td>
</tr>
<tr>
<td>Prakruti (Kapha,Pitta-Kapha)</td>
<td>20%</td>
</tr>
<tr>
<td>Onset (Gradual)</td>
<td>90%</td>
</tr>
<tr>
<td>Gender (Male)</td>
<td>66.6%</td>
</tr>
<tr>
<td>Educational status (Literate)</td>
<td>60%</td>
</tr>
<tr>
<td>Occupation (House wife, Laborer, Business)</td>
<td>20%</td>
</tr>
<tr>
<td>Built</td>
<td>70%</td>
</tr>
<tr>
<td>Built (Madhyama)</td>
<td>70%</td>
</tr>
</tbody>
</table>

RESULTS

The below given results were derived statistically taking the values before and after treatment under various clinical parameters using Panchadhatu Shalaka.

The effect of Agnikarma using Panchadhatu Shalaka in various cardinal signs and symptoms as assessed on the 1st week, 2nd week, 3rd week and 4th week.
reveals a clinically gradual improvement in all signs and symptoms. Statistically significant results on the 1st week, 2nd week, 3rd week and 4th week are seen in all the signs and symptoms.

Table 03: Effect of treatment in signs and symptoms on 4th week in Group B

<table>
<thead>
<tr>
<th>Signs and Symptoms</th>
<th>Mean</th>
<th>%</th>
<th>SD ± SE</th>
<th>&quot;t&quot; Value</th>
<th>&quot;p&quot; Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BT</td>
<td>AT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain</td>
<td>5.83</td>
<td>3.300</td>
<td>43.44</td>
<td>1.358 ± 0.248</td>
<td>10.219</td>
</tr>
<tr>
<td>Tenderness</td>
<td>0.933</td>
<td>0.100</td>
<td>89.24</td>
<td>0.379 ± 0.0692</td>
<td>12.042</td>
</tr>
<tr>
<td>Crepitus</td>
<td>0.700</td>
<td>0.533</td>
<td>23.85</td>
<td>0.379 ± 0.0692</td>
<td>2.408</td>
</tr>
<tr>
<td>Swelling - Midpoint of patella</td>
<td>0.633</td>
<td>0.033</td>
<td>95.23</td>
<td>0.498 ± 0.0910</td>
<td>6.595</td>
</tr>
<tr>
<td>Swelling - 2 inches above patella</td>
<td>0.633</td>
<td>0.067</td>
<td>89.57</td>
<td>0.504 ± 0.0920</td>
<td>6.158</td>
</tr>
<tr>
<td>Swelling - 2 inches below patella</td>
<td>0.633</td>
<td>0.000</td>
<td>100</td>
<td>0.490 ± 0.0895</td>
<td>7.077</td>
</tr>
<tr>
<td>Angle of Extension</td>
<td>1.100</td>
<td>0.733</td>
<td>33.36</td>
<td>0.615 ± 0.112</td>
<td>3.266</td>
</tr>
<tr>
<td>Angle of flexion</td>
<td>1.033</td>
<td>0.567</td>
<td>54.36</td>
<td>0.571 ± 0.104</td>
<td>4.709</td>
</tr>
</tbody>
</table>

OVERALL EFFECT OF AGNIKARMA

- 6.66% of patient showed complete relief (100% relief) (91-100% relief).
- Marked improvement (70 – 90% relief) was noted in 6.66% of patients.
- 23.33% of patients got moderately improved (50 – 69% relief).
- Mild improvement (25 – 49% relief) was noted in 70% of patients.

DISCUSSION

In the present study, 100% of patients were reported in the age group of 40–70 years. Demographic studies revealed that osteoarthritic changes commence between the 4th and 5th decades of life. Maximum 96.66% patients were belonged to Hindu religion; this is due to the Hindu-dominant population in the study area. The 50% of the patients were belonging to both rural and urban habitat. In this study, 60% of patients were observed from the middle
class. 60% literate patients were observed might be due to awareness regarding the health and the location of the hospital in urban area.

The majority of patients 36.6% followed Viruddhashana in their routine diet which leads to Agni Vaishamya and Vataprakopa resulting in Dhatukshaya which coupled with old age leads to Sandhigata Vata. This type of dietary habit affects the Agni resulting in formation of Aama, leading to Agnimandya and Dhatvagnimandya, which ultimately obstructs the Srotas. Due to obstruction of Srotas, Vata gets vitiated and affects Sandhi of knee resulting into Janu sandhigata Vata. Maximum patients were having Madhyama Koshtha (50%). Maximum 70% patients had Madhyama built, whereas 30% patients had Sthula built. It is observed that Sthaulya (obesity) causes excess Vriddhi (increase) of Dushita Medas and deprive nutrition to later Dhatus, especially Asthi and Majja which are the Dushyas of Sandhigata Vata. In Madhyama built patients, the cause of Sandhigata Vata is taking Apathyakara Ahara and Vihara as prevailing in the modern lifestyle.

**Probable mode of action of Agnikarma**

The probable mode of action can be described in the form of pharmacological actions which ultimately relieve the disease. The application of the Agnikarma (Cauterization) produce physical heat by its red hot Salaka (probes) which counts with its various properties Ushna (hot), Tikshna (acute/potent), Ashukari (immediate effective) and Sukshma (minute). All these properties are transferred to first dermis followed by epidermis of the skin (Twak dhatu) while the cauterization continues. Then these forms of actions penetrate to deeper dhatu and act probable in following three forms, like

1. It removes blockage of channels (Srothoavarodha) which increases the circulation of plasma and blood (Rasa and Rakta) and thereby flush out/pacifies the pain.
2. It increases the metabolism of body elements (Dhatus) by which it enhances the digestion by removing deranged doshas and at the same time it supplements nutrition to body tissues (Dhatus) that makes healthy to the diseased area.
3. It acts on the deep tissue by neutralizing the cold property (Sheeta guna) and simultaneously pacifying other features of Vata and Kapha dosha which alleviates
Vata and Kapha diseases. Under the above mode of action, the disease and associated symptoms of disease treated by Agnikarma are relieved. By which the Sira (Vein), Snayu (Tendon), Sandhi (joints) and Asthi (Bone) becomes stable. Agnikarma when applied considering doshas involved in Janu Sandhigata Vata reduces the symptoms of Pain, Tenderness caused due to the involvement of Vata and restricted movement caused due to effect of Kapha dosha and brings about increased circulation and improves the health of the joints.

Conclusion:
Agnikarma is one of the effective mode of treatment for Janu sandhigata Vata (Osteoarthritis of Knee joint) when used with Panchadhatu Shalaka. It catalysis the effect to bring about faster relief. Agnikarma is a nonpharmacological, OPD procedure required minimum equipment so that it can be used for pain management in Sandhigata Vata.

REFERENCE

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