COMPARATIVE STUDY OF VRIHAT PANCHMOOLBALAKSHEER VASTI AND MUSTADI UPNAHA IN THE MANAGEMENT OF SANDHIGAT-VATA VIS-À-VIS OSTEOARTHRITIS

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ABSTRACT

Sandhigata Vata vis-à-vis osteoarthritis, a common arthritic problem in practice ranging the age mainly between 40-70 years (but may also occurs in early age before 40 years) is more severe and more generalized in obese and older women and men working in the farms. Sandhigata-Vata is briefly described in Ayurvedic texts. In the ideal text of Ayurvedic medicine (the Charaka Sanhita), Charaka has termed the ‘Sandhigat Vata’ as Sandhigat-Anila (Anila=Vata) in ‘Vat-Vyadhi-Chikitsa’ chapter 28 and described as-‘Vata-Purnadritispath’ (soft swelling like air filled bag), ‘Shoth (inflammation, non-suppurative) and ‘Prasaranal/Kunchanyoh Pravrattisch Savedna’ (painful joint movements especially of extension and flexion). The present work entitled ‘Globally as of 2010, approximately 250 million people had osteoarthritis of the knee (3.6% of the population). Hip osteoarthritis affects about 0.85% of the population. Together, knee and hip osteoarthritis had a ranking for disability globally of 11th among 291 disease conditions assessed. Radiologically Sandhigat-Vata or OA is characterized by narrow or decreased joint space presence of osteophytes and a variety of deformities. On the basis of patho-physiology, the specific target of therapeutic intervention in Sandhigat-Vata is nearly around Dhatukshay (degeneration) due to Comperative study of Vrihat Panchmoolbala Ksheer Vasti and Mustadi Upnaha in the management of Sandhigat-Vata vis-à-vis osteoarthritis’ aim to undertake a critical literary and conceptual study, detailed demographic and clinical study and a study to evaluate the efficacy of different therapeutic regimen for the treatment of Sandhigata -Vata.
KEYWORDS: Osteoarthritis is a degenerative form of arthritis that features the breakdown.

INTRODUCTION
Osteoarthritis is a degenerative form of arthritis that features the breakdown and eventual loss of the cartilage of one or more joints. Cartilage is a structure of protein substance that serves as a "cushion" between the bones of the joints. Before age 45, osteoarthritis occurs more frequently in males. After 55 years of age, it occurs more frequently in females. Ageing process. It is essential to check or slowdown the process of Dhatukshay and to pacify Vata through Ayurvedic principles for the treatment.

The principle methods described in Ayurveda which can be used in the treatment of Sandhigat-Vata are as followed-
   - Swedha (Sarvang fomentation).
   - Vasti
2. Locally - Snehana (Abhyang or massage).
   - Swedana (Ekang fomentation).
   - Upnaha (local applications of poultices).
   - Agnikarm (an Para-surgical measure).
3. Medicinal preparations (Sanshaman Chikitsa).

LITERARY REVIEW
Ayurvedic Review
As mentioned earlier, the disease Sandhigat-Vata (SV) is briefly described in Ayurvedic texts and said to be a Vatik disorder (Vat-Vyadhi; Ch.Chik. 28/37) and also by Sushrut (su.nid. 1/38), Madhav (m.nid. 22/21). The Sandhigat-Vata is chiefly characterized by soft swelling as air-filled bag, inflammation with degenerative changes, tenderness and stiffness, painful joint movements esp. during flexion and extension, destructive changes in the joint structures, pain in the joint especially of aching or tearing nature, may be with osteoporosis, and heaviness in the joint affected. Basically above mentioned signs and symptoms are seen when Sandhigat-Vata is in their progressive phase with chronicity. There are also some other
clinical symptoms in Sandhigat-Vata due to specific with vitiated Vata in the joint (Ch.Chik. 28/20).

The word Sandhigat –Vata can be defined as ‘vitiated Vata when deep-sheeted in the joint and develops the pathology (in the joint and joint structures) due to their peculiar qualities and properties.

In the Charak –Sanhita, Sandhigat-Vata is mentioned as Sandhigat-Anila (Anila=Vata; Ch.Chik. 28/37). The commentator of Charak-Sanhita; Chakrapani describes the term Sandhigat-Anila as Sandhigat-Vata (Ch.Chik. 28/72-74). Maharshi Sushrut has described some specific symptom and sign of Sandhigat-Vata other than characteristic features described by Charak, those are destructive changes in the joint structures and osteoporosis which occur in the advanced stage of the disease. Vagbhata in their text mentioned Sandhigat-Vata as Sandhigat-Kupita Vayu (A.H.Nid). Madhav described Sandhigat-Vata also with heaviness/increase in the size but there is no any description about Sandhigat-Vata in Sharangdhar-Sanhita. Bhav-Prakash has described the disease Sandhigat-Vata with almost all the aspects in detail (B.P. Vatvyadhi chikitsa).

Samprapti (Pathogenesis) (C.Chik. 28/18, A.S. SUT. 20/3, S.S. PURV 5/25)

All the aetiological factors are independently responsible for the vitiation of Vata. In Ayurvedic classics, there is no clear-cut description of the pathogenesis of Sandhigat-Vata like some other diseases regarding Doshas, Dusyas, Srotas and their Dusti, Adhisthan etc, but there is much description regarding pathogenesis of Vatik disorders(Sandhigat-Vata also is a pure Vatik disorder; Ch. Chik. 28/18). Vitiating Vata develops the diseases by making place in hollow organs as like Asthi and Sandhi. Asthi and Sandhi are also the locations or places of Vata (A.S. sut. 20/3). The occurrence and pathogenesis of the diseases due to Vata is due to Khavagunya (altered physiological changes) of that particular part/place of the body (Sh. Pur. 5/25). Vitiating Vata is transmitted from the Pakvashaya (Pakvashaya is the specific site of Vata) to the joints and bones by the Purishdharakala which is also known as Asthidharakala (Dalhan on Su.Kalp. 4/40) said by Dalhana and accumulation (malfunctioning) of the vitiating Vata in the joint structures particularly due to Khavagunya (altered physiological changes). The degeneration in Sleshak-Kapha (Sleshak-Kapha-Ksyay) is responsible for decreased stability (Sthiratva) of the joints, mal-alignment and remodeling of the joint contour due to Sandhibhandhan- Vikriti and decreased lubrication (increased friction in the
articulart surfaces) due to Asingdhatva. All the above pathology is the end result of degeneration in the articular cartilage and subchondral bone changes.

**Modern Review**

Clinically OA presents as joint pain, stiffness, swelling, restriction of movements and crepitus. X-ray of the affected joints may shows decreased joint space between the articular bones, osteophytes (bony auto-growths at the margins of articular bones) and on progression of the disease there are varied deformities. In OA asymmetrical (also symmetrical) joint affection of one or more joints is present with joint pain especially during the joint movement (use of the joint), morning stiffness especially at morning or after prolonged rest and at the onset of movements which is relieved by movements since the increased synovial secretion caused by movements lubricates the dry joint and grafting may be felt on passive movements. The articular bones are end parts of the bone which makes the articulations at the joint. The surfaces of the articular bones are called articular surfaces. The articular bones are the basic component of a joint. Capsular ligament is joined to the articular surfaces and composed of connective tissues. It is lined internally by synovial membrane. The articular cartilage is found on the articular surfaces which presents a smooth surface to the joint. The subchondral bone is the structure found beneath the articular cartilage. The synovial membrane is attached to the inner surface of the capsule and has good reparative properties and can be formed by metaplasia from ordinary connective tissues. The synovial fluid is present in joint space and secreted by the synovial membrane whereas joint space is space present between articular surfaces and capsule of the joint. The muscles and ligaments are found around the joint, effect movements as maintain stability of the joint.

Schematic representation of the pathogenesis of OA is as follows-

1. Fatigue fracture of
   
   collagen fibre network
   
   ↓
   
   Increased hydration of
   
   the articular cartilage
   
   ↓
   
   Unravelling and loss
   
   of proteoglycans into
   
   synovial fluid
↓
Collagen loss
↓
OA

Microfractures of the subchondral bone

(Following repetitive loading)
↓
Fracture healing leads to Loss of resilience of the subchondral bone
↓
Fibrillated cartilage surface And deep clefts appear
↓
Proliferative changes (at the Joint margins) with formation Of osteophytes
↓
Loss of articular cartilage
↓
Hard and eburnated Underlying bone
↓
OA

Osteoarthritis is the end result of multiple factors with the following changes-
1. Loss of proteoglycan
2. Fracture of the collagen mesh network
3. Metabolic changes and cell loss
Interleukin-1 (IL-1), tumour necrosis factor alpha (TNF-α) insulin like growth factor – 1 (IGF-1) and transforming growth factor beta (TGF-β) have been found to play an important part in the articular cartilage metabolism, and in matrix protein synthesis and degradation.

MATERIAL AND METHODS

Selection of the patients

A series of 69 patients of Sandhigata-Vata vis-à-vis osteoarthritis were randomly selected for the present study from OPD and IPD of Panchkarma department, Rishikul Govt. Ayurvedic College Hospital, Haridwar. The cases were randomly selected regardless of their age, sex and socioeconomic considerations, but fully satisfying the criteria of diagnosis of OA in conventional medicine and clinical features of Sandhigat–Vata as described in Ayurvedic medicine. Out of 69 patients, only 45 cases could complete their follow – up i.e. 3 months and 24 patients did not turn up for regular follow up.

The following exclusion and inclusion criteria were adopted for the selection of cases of osteoarthritis:

1. **Exclusion criteria:** Major exclusion criteria was;
   - History or active presence of other inflammatory or rheumatic diseases.
   - Patients more than 80 years.
   - Substantial abnormalities in blood, hepatic, renal or endocrinal diseases.

2. **Inclusion criteria:** Major inclusion criteria was;
   - Patients fulfilling the diagnostic criteria of osteoarthritis
   - Cases not violating exclusion criteria
   - Patients aged over 30 years.
   - Cases of primary osteoarthritis.

3. **Diagnostic criteria**

   1. Osteoarthritis of knee –
      a. Traditional format:- knee pain
      - Osteophytes with 1 of the following:
        . Age > 50 years
        . Stiffness < 30 minutes
        . Crepitus
b. Classification tree format;
c. Knee pain and
d. Osteophytes

OR

- Knee pain and age > 40 years
- Morning stiffness < 30 minutes
- Crepitus on movements

4. Therapeutic study

1. Selection of the trial therapies/drugs:
2. The selected drugs/therapies selected for the present study was –
   1. Vrihat Panchmoolbalaksheer Vasti and
   2. Mustadi Upnaha

_Vrihat Panchmoolbalaksheer Vasti_ was prepared according to the method of preparation as described in *Charak Siddhisthan* chapter 3/23 and *Astang – Hridaya Sutrasthan* chapter 19/45. So that series was *Maksikam* (honey), *Saindhav/Lavanam* (salt), *Sneha* (*Mahanarayana Tail*), _Kalkam_ (paste of soya powder) and _Kwatham_ (decoction of the selected drugs for _Vasti_ therapy) with _Ksheeram_ (milk). The individual ingredients for decoction for _Vasti_ therapy was –
   1. Bilwa
   2. Agnimantha
   3. Shyonak
   4. Patla
   5. Gambhari and
   6. Bala

_Whereas individual ingredients of the Mustadi Upnaha_ used for poultice according to *Charak* (described in chapter *Vatayadhi Chikitsa*) are –
   1. Mustak
   2. Kinva
   3. Tila
   4. Kustha
   5. Devdaru
6. Lavanam  
7. Tagar  
8. Mahasneha  
9. Ksheer  
10. Dadhi

**Preparation of Trial Drug**

All the crude drugs of the *Vrihat Panchmoolbalaksheer Vasti* and *Mustadi Upnaha* was purchased from *Prem Nagar Ashram pharmacy* and *Yog, pharmacy, Haridwar* and properly identified. The ingredients of Vasti decoction and *Mustadi Upnaha* separately powdered at *Nageshwati Ayurvedic Hospital, Dehradun. Vasti*, prepared and given to the patients by the scholar and *Mustadi Upnaha* was provided at the same time to the selected patients for poultice also.

Dosage: The trial vasti therapy was used per rectally along with *Anuvasana Vasti* as *Kala-Vasti*. The dosage of individual ingredient and of prepared *Vasti* liquid was as follows –

\[
\begin{align*}
Maksikam & = 100ml \\
Lavanam & = 15gm. \\
Sneham & = 175ml. \\
Kalkam & = 60gm. \\
Kwatham & = 250ml. \text{ (with Ksheer)} \\
\text{Total liquid} & = 600 \text{ ml. / Asthapana Vasti}
\end{align*}
\]

*Mustadi Upnaha* was used locally on the affected joints as required for proper spreading and covering the whole joint.

Method of study: Present study has been divided into 3 groups based on the type of therapy to which patients were subjected:

**Group 1: Vasti and Upnaha** – this group of patients were treated with *Vrihat Panchmoolbalaksheer Vasti* and *Mustadi Upnaha*.

**Group 2: Vasti alone** – this group of patients were treated with *Vrihat Panchmoolbalaksheer Vasti* only

**Group 3: Upnaha alone** – this group of patients were treated with *Mustadi Upnaha* only
Details of groups

<table>
<thead>
<tr>
<th>Group</th>
<th>No. of patients registered</th>
<th>No. of completed follow – ups</th>
<th>Treatment given with duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>28</td>
<td>15</td>
<td>Vasti and Upnaha for 10 days – a – month for 3 months</td>
</tr>
<tr>
<td>2</td>
<td>23</td>
<td>15</td>
<td>Vasti for 10 days – a – month for 3 months</td>
</tr>
<tr>
<td>3</td>
<td>18</td>
<td>15</td>
<td>Upnaha for 10 days – a – month for 3 months</td>
</tr>
</tbody>
</table>

Total number 69 patients of Sandhigat – Vata vis-à-vis osteoarthritis satisfying the diagnostic criteria were registered during the present study and randomized in all the 3 groups 1, 2 and 3. Out of 69 patients, 24 patients did not turn up for regular follow – up. Hence final assessment of the result was done only in 45 patients.

Details of therapies

Patients of group 1 were treated with Vrihat Panchmoolbalaksheer Vasti and Mustadi Upnaha. The contents of Vasti therapies by which those have been selected are on the basis of classical references (Charak Sutra, Asthapana and Anuvasana Gana, Bhaisajyaratnavali – Vatavyadhi Chikitsa, Vagbhatokta Niruh Dravya Sangrah, Sushrut Kalpa, Kseer Vasti). Vrihat Panchmool and Bala are well known for Vatahara, Shothra (anti – inflammatory) and Balya (prevent from degeneration) and Ksheer is Jivaniya, (increases vitality), Vrinhaniya (nutritive) and Balya. Whereas contents of Mustadi Upnaha (Charak, Vatvyadhi Chikitsa), in combination are Vata – Shamak, Shothhara and Shoolanashak. These therapies (Vasti and Upnaha) have been given 10 days a month for a total period of 3 months with 3 follow – ups at regular interval of 1 month.

Patients of group 2 were treated with Vrihat Panchmoolbalaksheer Vasti only for initial 10 days of a month. Patients were subjected to Kalavasti with Anuvasana and Asthapana Vasti 10 days a month for a total period of 3 months.

Patients of group 3 were treated with Mustadi Upnaha only for initial 10 days of a month for a total period of 3 months duration.
OBSERVATION AND RESULTS

% distribution of severity of pain in group-1.

<table>
<thead>
<tr>
<th>Severity</th>
<th>BT</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Absent</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6.67</td>
</tr>
<tr>
<td>Mild</td>
<td>2</td>
<td>13.33</td>
<td>5</td>
<td>33.33</td>
</tr>
<tr>
<td>Moderate</td>
<td>6</td>
<td>40</td>
<td>5</td>
<td>33.33</td>
</tr>
<tr>
<td>Severe</td>
<td>7</td>
<td>46.67</td>
<td>4</td>
<td>26.67</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100</td>
<td>15</td>
<td>100</td>
</tr>
</tbody>
</table>

% distribution of severity of pain in group-2.

<table>
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<tr>
<th>severity</th>
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<th>F2</th>
<th>F3</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Absent</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mild</td>
<td>1</td>
<td>6.67</td>
<td>6</td>
<td>40</td>
</tr>
<tr>
<td>Moderate</td>
<td>11</td>
<td>73.33</td>
<td>8</td>
<td>53.33</td>
</tr>
<tr>
<td>Severe</td>
<td>3</td>
<td>20</td>
<td>1</td>
<td>6.67</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100</td>
<td>15</td>
<td>100</td>
</tr>
</tbody>
</table>

% distribution of severity of pain in group-3.

<table>
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<th>Severity</th>
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<th>F2</th>
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<tbody>
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<td>No.</td>
<td>%</td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Absent</td>
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<td>0</td>
<td>1</td>
<td>6.67</td>
</tr>
<tr>
<td>Mild</td>
<td>1</td>
<td>6.67</td>
<td>7</td>
<td>46.67</td>
</tr>
<tr>
<td>Moderate</td>
<td>9</td>
<td>60</td>
<td>6</td>
<td>40</td>
</tr>
<tr>
<td>Severe</td>
<td>5</td>
<td>33.33</td>
<td>1</td>
<td>6.67</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100</td>
<td>15</td>
<td>100</td>
</tr>
</tbody>
</table>

Comparision of Severity of Pain in Group 1 and 2.

<table>
<thead>
<tr>
<th>Group</th>
<th>Comparison</th>
<th>d</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group-1</td>
<td>BT Vs AT</td>
<td>1.8</td>
<td>0.6761</td>
<td>0.1746</td>
<td>10.311</td>
<td>0.01*</td>
</tr>
<tr>
<td>Group-2</td>
<td>BT Vs AT</td>
<td>1.4667</td>
<td>0.7432</td>
<td>0.1919</td>
<td>7.6429</td>
<td>0.01*</td>
</tr>
<tr>
<td>Group-1 Vs 2</td>
<td>BT</td>
<td>0.3333</td>
<td>0.9759</td>
<td>0.252</td>
<td>1.3229</td>
<td>0.10**</td>
</tr>
<tr>
<td></td>
<td>AT</td>
<td>0.2</td>
<td>1.0142</td>
<td>0.2619</td>
<td>0.764</td>
<td>0.10**</td>
</tr>
</tbody>
</table>

*- significant, ** non-significant

In the table there is statistically significant difference in individual groups but difference in between comparatives groups is not statistically significant. It shows that individual group has statistically significant difference but not in comparative groups.
Comparision of Severity of Pain in Group 2 and 3.

<table>
<thead>
<tr>
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<th>Comparison</th>
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<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group-2</td>
<td>BT Vs AT</td>
<td>1.4667</td>
<td>0.7432</td>
<td>0.1919</td>
<td>7.6429</td>
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</tr>
<tr>
<td>Group-3</td>
<td>BT Vs AT</td>
<td>1.9333</td>
<td>0.4577</td>
<td>0.1182</td>
<td>16.358</td>
<td>0.01*</td>
</tr>
<tr>
<td>Group-2 Vs 3</td>
<td>BT</td>
<td>-0.133</td>
<td>0.8338</td>
<td>0.2153</td>
<td>-0.619</td>
<td>0.10**</td>
</tr>
<tr>
<td></td>
<td>AT</td>
<td>0.333</td>
<td>1.1751</td>
<td>0.3034</td>
<td>1.0986</td>
<td>0.10**</td>
</tr>
</tbody>
</table>

* - significant, ** non-significant

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Comparision of Severity of Pain in Group 1 and 3.

<table>
<thead>
<tr>
<th>Group</th>
<th>Comparison</th>
<th>d</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group-3</td>
<td>BT Vs AT</td>
<td>1.9333</td>
<td>0.4577</td>
<td>0.1182</td>
<td>16.358</td>
<td>0.01*</td>
</tr>
<tr>
<td>Group-1</td>
<td>BT Vs AT</td>
<td>1.8</td>
<td>0.6761</td>
<td>0.1746</td>
<td>10.311</td>
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</tr>
<tr>
<td>Group-3 Vs 1</td>
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<td>0.8837</td>
<td>0.2282</td>
<td>0.2922</td>
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</tr>
<tr>
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<td>0.7638</td>
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</tr>
</tbody>
</table>

* - significant, ** non-significant

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Comparison of Severity of Restriction of Movement in Group 1 and 2.

<table>
<thead>
<tr>
<th>Group</th>
<th>Comparison</th>
<th>d</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group-1</td>
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<td>0.02*</td>
</tr>
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<td>Group-2</td>
<td>BT Vs AT</td>
<td>0.4667</td>
<td>0.5164</td>
<td>0.1333</td>
<td>3.5</td>
<td>0.01*</td>
</tr>
<tr>
<td>Group-1 Vs 2</td>
<td>BT</td>
<td>0.067</td>
<td>0.9612</td>
<td>0.2482</td>
<td>-0.269</td>
<td>0.10**</td>
</tr>
<tr>
<td></td>
<td>AT</td>
<td>0.0667</td>
<td>0.4577</td>
<td>0.1182</td>
<td>0.5641</td>
<td>0.10**</td>
</tr>
</tbody>
</table>

* - significant, ** non-significant

In the table there is statistically significant difference in individual groups but difference in between comparatives groups is not statistically significant. It shows that individual group has statistically significant difference but not in comparative groups.
Comparison of Severity of Restriction of Movement in Group 2 and 3.

<table>
<thead>
<tr>
<th>Group</th>
<th>Comparison</th>
<th>d</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group-2</td>
<td>BT Vs AT</td>
<td>0.4667</td>
<td>0.5164</td>
<td>0.1333</td>
<td>3.5</td>
<td>0.01*</td>
</tr>
<tr>
<td>Group-3</td>
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<td>1.4667</td>
<td>0.05*</td>
</tr>
<tr>
<td>Group-2 Vs 3</td>
<td>BT</td>
<td>0.3333</td>
<td>0.8165</td>
<td>0.2108</td>
<td>1.5811</td>
<td>0.10**</td>
</tr>
<tr>
<td></td>
<td>AT</td>
<td>0</td>
<td>0.378</td>
<td>0.0976</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*- significant, ** non-significant

In the table there is statistically significant difference in individual groups but difference in between comparatives groups is not statistically significant. It shows that individual group has statistically significant difference but not in comparative groups.

Comparison of Severity of Restriction of Movement in Group 1 and 3.

<table>
<thead>
<tr>
<th>Group</th>
<th>Comparison</th>
<th>d</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group-3</td>
<td>BT Vs AT</td>
<td>0.1333</td>
<td>0.3519</td>
<td>0.0909</td>
<td>1.4676</td>
<td>0.05*</td>
</tr>
<tr>
<td>Group-1</td>
<td>BT Vs AT</td>
<td>0.3333</td>
<td>0.6172</td>
<td>0.1594</td>
<td>2.0917</td>
<td>0.02*</td>
</tr>
<tr>
<td>Group-3Vs 1</td>
<td>BT</td>
<td>0.2667</td>
<td>0.7037</td>
<td>0.1817</td>
<td>1.4676</td>
<td>0.10**</td>
</tr>
<tr>
<td></td>
<td>AT</td>
<td>0.0667</td>
<td>0.4577</td>
<td>0.1182</td>
<td>0.5641</td>
<td>0.10**</td>
</tr>
</tbody>
</table>

*- significant, ** non-significant

In the table there is statistically significant difference in individual groups but difference in between comparatives groups is not statistically significant. It shows that individual group has statistically significant difference but not in comparative groups.

DISCUSSION

The changes in percentage distribution of severity of pain in terms of reducing severity was found to be more in group 3 and group 1 than group 2. Maximum shifting was found into absent severity group in both the 1st and 3rd group. Maximum shifting was also found into absent severity in group 2. Differences in the number of patients after each follow – up were statistically analysed. Better response in group 3 is due to the effect of Upnaha therapy whereas the response in group 1 is better due to Vasti and Upnaha therapies. This shows that upnaha therapy is more beneficial over the vasti therapy in reducing pain severity. On comparison with application of t’ test, there is no statistically significant difference in between the comparative groups.

The changes in percentage distribution of severity of restriction of movement in terms of reducing severity was found to be more in group 2. There were 3 patients of moderate severity which were shifted into absent group in group 1 and 3 patients of mild severity were
shifted into absent group in group 3 while in group-2, one moderate and nine mild patients were shifted into absent group in group-2. So, more significant results are found in group-2. On comparison with application of ‘t’ test, there is no statistically significant difference in between the comparative groups. The effects of alone therapy, as well as combined therapy, were much better in cases of Sandhigat – Vata with relatively recent onset of the disease. During the study period even after third follow-up, no side effects were observed in any patient of any group.

After overall analysis of datas, effect of Vrihat Panchmoolbalaksheer Vasti (Sanshodhan Chikitsa), Mustadi Upnaha (Sanshaman Chikitsa) and combined therapy can be documented in the management of Sandhigat–Vata vis-à-vis osteoarthritis. On comparison of therapies on symptoms and disease Sandhigat – Vata, Vasti therapy is more effective for the treatment of disease pathology whereas Upnaha therapy is more effective for the treatment of symptoms of the disease. So above both therapies along with Sanshaman Chikitsa with medicinal preparations can be used for better treatment of Sandhigat – Vata.

The study under report is a time bound trial and has many limitations viz. relatively small number of the patients in each group and subgroup, area of the study, life styles and dietary habits of that particular area and different climatic conditions. Hence it is suggested that an extended clinical trial be undertaken to evaluate the definite role of therapies given and their side effects if any. The present thesis is a part of educational programs and presents the methodology and observations only with the intention of lead for future studies.

**CONCLUSION**

The difference in therapeutic efficacy of trial therapies is found statistically significant in reducing pain, tenderness, restriction of movement and stiffness where combined therapy is proved more efficacious. On individual analysis of symptoms by percentage distribution, it is observed that the pairs showing statistically significant shifting towards reducing the severity of symptoms are more in terms of number, as well as in degree of significance in group 1. From the above observations one can conclude that the Vasti therapy along with Upnaha therapy when given after proper Snehana and Swedana and as described in classics is found to be more efficacious.

On the basis of above observations and discussion, this can be concluded that Vasti therapy for systemic effect on Dhatukshay and vitiated Vata and upnaha therapy for local effect on
Vata-Prakopa-Lakshanas and Vyadhi–Lakshanas may be a better approach of management of Sandhigat – Vata vis-à-vis osteoarthritis.

REFERENCES