ABSTRACT

INTRODUCTION

Arthritis and related diseases can cause debilitating, life-changing pain in the joints. Vitiated Vata is responsible for joint pain. In some clinical conditions like Amavata (rheumatoid arthritis), Vatarakta (gout) and Sandhigatavata (Osteoarthritis) Raktamokshana (bloodletting) is one of the ancient and important parasurgical procedures described in Ayurveda for treatment of various diseases. In classical texts it is mentioned that if disease is not relieved even after proper treatment of vitiated Dosha, then Raktamokshana should be done considering involvement of the Rakta.

MATERIALS AND METHODS: Total 11 patients having knee joint pain due to OA, RA and Gout were taken from OPD and IPD of P D Patel Ayurveda Hospital between ages from 30-70 years. Jalauka (Leech) were applied to affected knee joint as per described in Ayurveda textbooks.

RESULTS: Assessment of pain was done with Visual Analogue Scale (VAS) for pain before and after Jalaukavacharana. The mean score reduction in pain is 3 after treatment earlier which was 5.8 before treatment.

DISCUSSION: As per Ayurveda inflammation is because of vitiation of vata and (pitta) raktadusti. Leeches first suck the vitiated blood resulting in reduction in vitiated rakta and also there is removal of srotavrodha of vatadosha this both changes reduces the pain and inflammation.

CONCLUSION: Jalaukavacharana can be an ideal therapy for pain management in inflammatory painful joint disorders commonly due to RA, Gout and osteoarthritis, as it helps not only in reducing pain but also reduced swelling and redness without any side effects.

KEYWORDS Jalaukavacharana, Painful Joints, Osteoarthritis, Rheumatoid Arthritis
INTRODUCTION
Joint pain caused by various clinical conditions can be treated with Ayurveda treatment. Vitiated Vata is responsible for joint pain\(^1\). In some clinical conditions like Amavata (rheumatoid arthritis) and Vatarakta (gout), Ama is also associated with vitiated Vata. In inflammatory conditions vitiated Pitta is also involved in the pathogenesis. If Ama is there, it is treated first and then Vitiated Vata is treated in such a way that Ama does not produced again. Where Ama is not involved, joint pain is treated with all anti Vata treatment. If vitiated Pitta is associated, it is also taken care along with the treatment of Vata\(^2\).

The nonsteroidal anti-inflammatory drugs (NSAIDs) are the main drugs of choice in modern medicines which have lots of side effects; therefore they are not safe for long-term therapy\(^3\). Raktamokshana\(^4\), i.e., bloodletting is one of the ancient and important parasurgical procedures described in Ayurveda for treatment of various diseases. Out of them, Jalaukavacharana or leech therapy has gained greater attention globally, because of its medicinal values. The saliva of leech contains numerous biologically active substances, which has anti-inflammatory as well as anesthetic properties. CharakaSamhita mentioned that if disease is not relieved even after proper treatment of vitiated Doshas, then Raktamokshana should beapplied considering involvement of the Rakta\(^5\). Jalaukavacarana (leech therapy) is a method of local Raktamokshana which is easy to apply on the painful joint. Considering all these facts, this study is planned to evaluate the effect of Jalaukavacarana in the management of joint pain in the patients who do not get relief in the pain even after proper Ayurvedic treatment.

AIM
To study the efficacy of Jalaukavacharana in the management of various painful joint disorders those are not responding to routine Ayurvedic management.

NULL HYPOTHESIS
(H\(_0\)): Jalaukavacharana (leech therapy) is not effective in relieving pain in painful joint disorders.

ALTERNATE HYPOTHESIS
(H\(_1\)): Jalaukavacharana (Leech Therapy) is effective in relieving pain in various painful joint disorders.

MATERIALS AND METHODS
The ethical committee approval no. JSAM/IECHR/71/11-2017
STUDY DESIGN AND SAMPLE SIZE:
Total 11 patients enrolled in the study have age between 30 to 70 years from OPD and IPD of Kayachikitsa and Panchakarma department of P D Patel Ayurveda Hospital, Nadiad.

INCLUSION CRITERIA:
- Patients of osteoarthritis, rheumatoid arthritis and gout who do not get relief in joint pain even after performing of dosha pacifying and ama reducing (in cases of ama involvement) ayurvedic treatment.
- Patients having pain in either of knee joint were selected.

EXCLUSION CRITERIA:
- Patient who is under anti-coagulant treatment, suffering from hemophilia or having bleeding tendencies.
- Patients having increased prothrombin time than normal.
- Patient having Hemoglobin less than 10gm%.
- Patients having uncontrolled diabetes mellitus.

INVESTIGATIONS:
Hemoglobin, Erythrocyte Sedimentation Rate, Blood Sugar (Post prandial), Bleeding Time, Clotting Time, Prothrombin Time, Serum Uric acid
Urine routine and microscopic

WASHOUT PERIOD:
One week washout period was kept for the patients taking any conventional medicine for relief of pain. All types of medicaments were stopped before 1 week.

JALAUHKAVACARANA (Figure 1)
PURVA KARMA:

MATERIALS
Cotton, gauze piece, gloves, turmeric, water, Jalauka (leech) and bandage.

Preparation of Jalauka:
Jalaukawas taken from the pot and then kept in turmeric water for 5-10 minutes. It was then kept in normal water for 5 to 10 min and then applied on the affected part.

Preparation of the patient:
Examination and preparation of patient for Jalaukavacarana including identification of most painful point at knee joint. All the procedure were fully explained to the patients in their local language. The patient was instructed not to use any ointment before and after treatment on that part.

Pradhana karma:
Jalauka was applied on the most painful point of the affected knee joint. The Jalauka was observed whether it was sucking properly or not. The Jalauka was kept on the affected area till it detaches itself but if the patient feels any discomfort in the form of itching burning etc on that area Jalauka were detached by sprinkling the turmeric powder over its mouth.

Paschat karma:
Haridra(Turmeric) powder has used for local application to stop bleeding after removal of Jalauka. Bandage has applied to the site of Jalaukavacarana. Vamana of the Jalauka has done after its removal.

CRITERIA FOR ASSESSMENT:
Assessment of pain before and after of Jalaukavacarana with the help of visual analogue scale from 0 to 10. 0 has considered no pain and 10 has considered for the maximum severity of the pain.

Visual analogue scale grade score of pain.
(Table 1). OBSERVATIONS (Table 2)

<table>
<thead>
<tr>
<th>Intensity of pain</th>
<th>Grade score</th>
</tr>
</thead>
<tbody>
<tr>
<td>No pain</td>
<td>0-1</td>
</tr>
<tr>
<td>Mild pain</td>
<td>2-3</td>
</tr>
<tr>
<td>Uncomfortable</td>
<td>4-5</td>
</tr>
<tr>
<td>Distressing</td>
<td>6-7</td>
</tr>
<tr>
<td>Intense</td>
<td>8-9</td>
</tr>
<tr>
<td>Worst pain</td>
<td>10</td>
</tr>
</tbody>
</table>

Table 1 Visual Analogue Scale

Table 2 Observations

<table>
<thead>
<tr>
<th>S.no.</th>
<th>Observations</th>
<th>No. of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Diagnosed as</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Osteoarthritis</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Rheumatoid arthritis</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Onset of Pain</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gradual</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Insidious</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>Time of onset</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Less than 1 year</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1-3 years</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>More than 3 years</td>
<td>1</td>
</tr>
</tbody>
</table>

Fig 2 Graph Showing mean score improvement in pain

RESULTS
Improvement in pain was assessed before and after using paired ‘t’ test (Table
Highly significant reduction in pain was found after one time application of Jalauka.

**Mean Score Improvement in pain (VAS score) (Figure 2)**

**DISCUSSION**
Reduction in pain after Jalaukavacharana is highly significant. This suggests that in various painful joint diseases, Jalauka reduces pain satisfactorily. This study shows a highly significant decrease in joint pain by Jalaukavacharana. improvement in pain might be due to the main pathology in knee joint disorders is inflammation. As per Ayurveda this inflammation is because of vitiation of vata and (pitta) rakta dusti. Therefore, by applying jalauka there is reduction of inflammation as it is well versed that leeches first suck the vitiated blood resulting in reduction in vitiated rakta and also there is removal of srotoavrodha of vata dosha. This both changes reduced the pain and inflammation.

According to modern view, Leech saliva having anti-phlogistic actions. This removes local obstruction of the blood and prevention from inflammation. (Indian Materica Medica). Hirudin has anti-thrombine activity, Calin, another constituent of leech saliva prevents the blood coagulation, analgesic effect when leech sucks, pain killer chemical releases in blood which stops patient from feeling of bite. The salivary glands also produce Cornucopia of other pharmacologically active substance including an antihistamine, protease and antibiotic.

**CONCLUSION**
Jalaukavacharana can be an ideal therapy for pain management in inflammatory painful joint disorders commonly due to RA, Gout and osteoarthritis, as it helps not only in reducing pain but also swelling and redness without any side effects. More clinical studies on large samples with long follow-up period as well as multiple application of Jalauka are required.

<table>
<thead>
<tr>
<th>Clinical test</th>
<th>Mean score</th>
<th>Paired ‘t’ test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BT</td>
<td>AT</td>
</tr>
<tr>
<td>Pain</td>
<td>5.8</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2.8</td>
<td>51.6%</td>
</tr>
<tr>
<td></td>
<td>1.99</td>
<td>0.601</td>
</tr>
<tr>
<td></td>
<td>P&lt;0.001</td>
<td></td>
</tr>
</tbody>
</table>
REFERENCES

1. Agnivesh, Charak, Dr. Idbala, Charaksamhita, Chikitsasthana, adhyaya 28/12, edited by Vaidya Yadavji Trikamji Acharya. 2nd Ed. Varanasi Chaukhamba Sanskrit sansthan; 1990.

