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## ***Jalouka Avacharana (Leech Application) in Symptomatic Management of Acute Rheumatoid arthritis - A Case report***

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### **ABSTRACT**

Rheumatoid Arthritis (RA) is a chronic, inflammatory, migratory polyarthritis presenting with pain, stiffness and swelling. During acute episodes the pain and stiffness can be crippling. Providing symptomatic relief becomes an urgent need. Current modern biomedical drugs, though effective, have serious adverse effects in the long term. Ayurveda, India's traditional healthcare system, prescribes numerous organic internal and external medicines as well as therapies for pain relief. All medicines and therapies are derived from naturally available resources. Among them is *Jalouka-avacharana*, Leech Application, where leeches are applied at the area of maximum pain, allowed to suck blood, and then removed. The procedure is totally painless and highly economical. Indications for leech application have been listed in classical Ayurvedic literature. The current case study employed *Jalouka-avacharana* in a patient of Acute-on-chronic Rheumatoid Arthritis affecting mainly knee joints. Two parameters were used to assess the outcome, namely measurement of joint circumference with measuring tape for swelling, and Visual Analogue Scale for pain. *Jalouka-avacharana* in Acute RA showed significant reduction in swelling and pain in the affected knee joints. No adverse effects were observed during the study.

### **KEYWORDS**

*Rheumatoid Arthritis, Symptomatic relief, Ayurveda, Jaloukaavacharana, Visual Analogue Scale*



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## INTRODUCTION

In its acute phase, Rheumatoid Arthritis (RA) can be crippling due to severe pain, swelling and stiffness of multiple joints<sup>1</sup>. These clinical features can be so severe that they directly interfere with even simple day to day routine activities of the patient like standing, sitting, walking, bending and so on. In such situations, providing symptomatic relief in the most-affected joints becomes a primary treatment objective. Modern treatment involves NSAIDs as well as steroids administration, both of which have limitations and serious Adverse Drug Reactions (ADR) in the long term<sup>2</sup>.

Ayurveda, India's traditional Healthcare System which originated at least 2000 years ago provides numerous organic, safe and effective medicines and therapies to reduce symptoms of pain, swelling and stiffness of joints. One of the therapies, unique to Ayurveda, is *JaloukaAvacharana* (JA) or Leech Application, which was chosen for this case study. Leeches painlessly suck out blood. *Sushruta Samhitha*, one of the primary Literary Resources of Ayurveda, prescribes use of JA. *Sushruta* mentioned localized swelling as one of the indications for blood letting<sup>3</sup>. According to *Chakradatta*, another ancient book, in severe inflammation with pain which does

not subside by the application of medicinal poultice (paste), sudation/fomentation therapy or irrigation with medicinal decoctions, bloodletting should be done<sup>4</sup>. In swelling of recent onset, bloodletting can mitigate pain<sup>5</sup>. In swellings of toxic origin, for instance stings and bites, bloodletting should be done either by leeches or by incising with lancet to mitigate pain<sup>6</sup>.

Literature indicates that JA should be fruitful in reducing pain and swelling. This study has by design a limited scope, as it is novel and interdisciplinary. The objectives are to assess short term symptomatic management of RA-affected joints in acute phase, as an alternative to oral drugs. This report may be characterized as an exploration for a simple and safe drugless, painless, anti-inflammatory, analgesic intervention for immediate symptomatic relief, based on the alternate principles of Ayurveda.

## CASE REPORT

A 65 year old female with OPD No:336745 visited *Shalya Tantra* OPD of SDMCA Hospital Udupi on 01/07/19 with complaints of severe pain, swelling and restricted movements of bilateral knee joints, associated with pain and mild swelling in bilateral wrist joints since 2 months. Three years ago, patient took



allopathic treatment for similar complaints for about 1 year. She first presented in our OPD with similar complaints about 9 months ago, in October 2018. On Investigation ESR was 120mm/hr, RA Factor-200 IU/ML (Positive), CRP-71.4mg/L (Positive), ASO Titre-Negative and she was diagnosed as suffering from Rheumatoid arthritis. She was under our treatment for 10 days, got partial relief and was fairly asymptomatic for about seven months. Two months back there was an exacerbation, with severe pain and swelling in knee joints restricting routine movements, with difficulty in standing and walking. Pain was more in early morning hours. For this she consulted our OPD for a second time, on 01/07/19.

There was no positive family history for RA. Patient, known case of Hypertension and Diabetes mellitus, and is on Tab. CLIBIT 10mg 1-0-0 and Tab CUMET SR 1-0-1/2 since 2 years.

**Clinical Findings (at admission):** Patient was afebrile; Pulse was 78/min, Respiratory rate-18/min, BP-150/90mm of Hg. Vitals were stable throughout stay at Hospital. No

abnormality was noticed in the functioning of Respiratory, Circulatory, Digestive and Central nervous system.

**Examination of knee joints revealed:**

Swelling present in the B/L knee joints, more on left side. Swelling was of non-pitting type.

Tenderness was present in both knee joints along with rise in temperature.

Effusion test was positive in the bilateral knee joints.

All movements of knee joints were restricted bilaterally

**TREATMENT**

Oral Anti-Hypertensive and Anti-Diabetic drugs were continued. The RA was treated with Ayurvedic internal medicines like Cap Lasuna 6-6-6, Gokshuradi Guggulu DS 2-2-2, Yogendra Rasa 1-0-1 and Therapies like Rasnadi Upanaha(Poultice) and Dhanyamladhara aimed at systemic and local relief. After 4 days, JA was planned for both knees as they were most affected, as internal medicines and poultices were not providing symptomatic relief, especially to knee joints.

**Table 1** JaloukaAvacharana Logistics

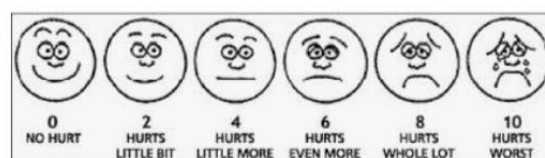
Sl No:	Date of JA	No: of <i>Jalouka</i> (Leeches)	Time of Attachment	Time of Detachment	Amount of blood drained
1	05/07/2019 Therapy 1	2 <i>Jaloukas</i> -Right Knee 2 <i>Jaloukas</i> -Left Knee	1pm	1.45pm	15ml
2	07/07/19 Therapy 2	2 <i>Jaloukas</i> -Right Knee 2 <i>Jaloukas</i> -Left Knee	10.30am	11.15am	35ml
3	10/07/19 Therapy 3	2 <i>Jaloukas</i> -Right Knee 2 <i>Jaloukas</i> -Left Knee	6.45pm	7.30pm	30ml



Two *jaloukas* were applied to each knee joint, at spots of maximum tenderness. Each session lasted for about 45min. Three therapy session were administered, with the gap of 1 day between the 1st and 2nd therapy, and a gap of 2 days between 2<sup>nd</sup> and 3<sup>rd</sup> therapy (**Table 1**). The gap was increased due to minimal pain with oedema at bite sites, which resolved on the 2<sup>nd</sup> rest day. Post-therapy, there was minimal sero-sanguinous oozing from bite sites for about 30 minutes, which was managed by sterile gauze pack. There were no local or systemic adverse reactions of any manner. Patient compliance was excellent. Outcome assessment was aimed specifically at knee joints since that was the

patient's main complaint. Also, outcome assessment was purely aimed at symptomatic relief. Criteria used were:

1. Circumference of swollen joints with measuring tape at the point of maximum swelling.
2. Visual Analogue Scale (VAS) for pain (**FIGURE A**).



Assessment by Criteria 1 & 2 was done Before Treatment (BT) on Therapy 1, after 24 hours and After Treatment (AT) after all three therapy sessions (**Table 2**).

**Table 2** Assessment Criteria Before and After Treatment

<b>Criteria 1</b> Circumference (in cm) of knee joints				<b>Criteria 2</b> VAS score of knee joints			
Sl No:	Therapy/JA	BT in cms	AT(24hrs) in cms	Sl No:	Therapy/JA	BT	AT (after 24 hours)
1	Therapy 1 Date:05/07/19	<b>43cms-Left</b> <b>40.5 cms-Right</b>	42.5cms-Left 40.5cms-Right	1	Therapy 1 Date:05/07/19	<b>8</b>	8
2	Therapy 2 Date:07/07/19	41 cms-Left 40.5cms-Right	40.5cms-Left 39.5cms-Right	2	Therapy 2 Date:07/07/19	6	6
3	Therapy 3 Date:10/07/19	40.5cms-Left 39.5cm-Right	<b>40.5cm-Left</b> <b>39.5cm-Right</b>	3	Therapy 3 Date:10/07/19	4	<b>Between 2 and 4</b>

However, discussion and conclusion have been carried out based on TWO readings BT (Therapy 1) and AT (Therapy 3) henceforth BT and AT.

## RESULTS

### Criteria 1:

Circumference of swelling of right knee joint was 40.5cm BT and 39.5cm AT.

Circumference of swelling of left knee joint was 43cm BT and 40.5cm AT. (**Figures 1 - 4, Table 2**).

**Criteria 2:** VAS reading revealed a score of 8 BT and score between 2 and 4 AT in both knee joints (**Table 2**).



Patient came for follow up after 2 weeks, and found significant change in pain and swelling.



Figure 1 On 5/7/19



Figure 2 On 5/7/19 BT and AT



Figure 3 On 8/7/19



Figure 4 On 11/7/19

## DISCUSSION

Rheumatoid Arthritis is a chronic, inflammatory, migratory polyarthritis characterized by stiffness, pain and swelling<sup>7</sup>. Its aetiology has an autoimmune component<sup>8</sup>, and though it mostly affects small joints, it can affect larger joints of the body. In its acute phases, the early morning stiffness, swelling and pain can be extremely severe, and can impair even routine movements like walking, sitting, standing and bending. In such presentations, providing symptomatic relief in the affected joints becomes a primary treatment objective. RA is diagnosed as per the American Rheumatology Association (ARA) criteria, and it can present with or without detectable blood/serum markers<sup>9</sup>. The present case was Sero-positive. Treatment in **allopathic** medicine involves NSAIDS and steroids, which carry their own collateral burden of Adverse Drug Reactions in the long term<sup>2</sup>.

Ayurveda, India's traditional system of Healthcare is at least two thousand years old in its origins. It has a wide pharmacopeia deriving from natural and organic sources including plants, minerals, mineral salts, marine salts, and importantly, a living organism, the leech. The *Sushruta Samhita*, a primary literary source of Ayurveda, lists twelve species of leeches



and their morphological features for identification. Six are toxic, and six non-toxic or medicinal, which may be used in therapy<sup>10</sup>. Localised bloodletting using leeches or other prescribed methods is indicated in localized swelling, inflammation with pain, swellings of recent origin and swellings of toxic origin<sup>3, 4, 5, 6</sup>.

This Case Report concerns a female patient who was suffering from pain and swelling in knee joints and wrists since 3 years. The patient received treatment from us twice, and this report presents the recent 2<sup>nd</sup> hospitalization. Earlier, we had diagnosed her as suffering from RA (ESR -120mm/hr, RA Factor-200 IU/ML (Positive), CRP-71.4mg/L (Positive), ASO Titre-Negative). Knee joints were maximum affected in this episode. When local poultice did not help, we decided on JA as per textual reference.<sup>4</sup> JA was done using 2 leeches on each knee joint, in three sessions with 1 day and 2 days gap (**Table 1**). Patient compliance was excellent since the unique features of JA are that it is simple to administer, without need for any elaborate pre- intra- or post-therapy measures, painless and safe. Even though it is interventional, patient found it extremely convenient.

Assessment criteria were set for symptomatic relief. The two criteria were Knee circumference at area of maximum swelling, and Visual Analogue Scale for

pain. Left Knee circumference reduced from 43 cms(BT Therapy 1) to 40.5 cm (AT Therapy 3); whereas Right Knee circumference reduced from 40.5cm (BT Therapy 1) to 39.5 cm (AT Therapy 3). VAS (both knees) reduced from 8 BT (Therapy 1) to between 2 and 4 AT (Therapy 3) (**Table 2**).

Reduction in swelling and VAS Pain Scores was highly encouraging. The mode of action can be proposed as per Ayurvedic texts. Ayurveda ascribes a peculiar attribute to *Jaloukas*, namely the ability to suck out 'diseased' or 'unhealthy' blood. The implication is that when applied, medicinal leeches suck out 'unhealthy' blood from the inflamed tissues; in a manner, decongesting the affected area of blood in which mediators and products of inflammation have accumulated ('unhealthy' blood). Leech saliva contains bioactive substances which are having several actions like anticoagulant, vasodilating, antithrombotic and anti-inflammatory substance like eglin, this possibly scales down the inflammatory process, because the accumulated triggers of inflammation have been removed. This toning down of the inflammatory process reduces swelling and pain.

A second valuable mention in Ayurveda is the extent of the *jalouka's* sucking zone: it is specified as the area of a human palm around the bite site. This could explain the



reduction in circumference, showing that the decongestion extended well beyond the bite site.

## CONCLUSION

*Jalouka Avacharana* provided significant symptomatic relief in acutely inflamed RA knee joints by reducing swelling and pain, thereby achieving primary treatment objectives within the limited design of this study. The positive outcome means that JA can be earnestly explored and employed further. Relief in small joints could be much higher. There was enough evidence that extended JA therapies would provide highly significant relief. Literature does not set any upper limit to the number of JA therapy sessions, since it is only ‘unhealthy’ blood that is being sucked out. Number and frequency of therapy sessions are as per Consultant’s clinical discretion. JA is an organic, painless and safe intervention, which can be used in patients of any age, gender and emotional profile, especially the anxious and hypochondriac. Beyond the clinical setting, biochemical analysis of the sucked blood could provide some insight into Ayurveda’s description of ‘unhealthy’ blood.

### Declaration of Patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the

form the patient has given consent for her images and other clinical information to be reported in the journal

### Source of Support

Nil

### Conflicts of interest

There are no conflicts of interest





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