ORIGINAL ARTICLE

A clinical study on the effect of ayurveda panchakarma *Janudhara* with *Parijat Taila* and manual traction in *Janusandhigata Vata* (knee osteoarthritis)

Sandeep Kumar[1], Gyan Prakash Sharma[1], Meenakshi Sharma[2]

[1]Department of Panchkarma, PGIA, Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University, Jodhpur, India, [2]SMO AYUSH, All India Institute of Medical Sciences, Jodhpur, Rajasthan, India

Abstract

Introduction: Osteoarthritis (OA) knee joint is a degenerative joint disease affecting millions worldwide, particularly those over 50 and marked by the breakdown of cartilage, leading to joint pain, stiffness, and reduced mobility. Factors contributing to OA include age, obesity, genetics, and biomechanical stresses. **Materials and Methods:** A single-arm interventional study was conducted on 30 patients diagnosed with OA Knee joint confirmed with X-ray, for 30-days period, this interventional trial evaluated improvements in symptoms like joint pain, swelling, and range of motion, Visual Analog Scale (VAS), knee injury and Osteoarthritis outcome score (KOOS), and X-ray analysis. **Results:** The results indicated a significant reduction in pain and stiffness, with improved joint function and reduced VAS score, and improved KOOS score. **Discussion**: This study highlights the potential benefits of the Holistic approach of therapies (*Janudhara* with *Parijat Taila* and manual traction) in the treatment of knee OA. **Conclusion:** This study concludes that the combined approach of *Janudhara* with *Parijat Taila* and manual traction is effective and safe in the management of *Janusandhigata Vata* (knee OA).

Key words: Alternative medicine, *Ayurveda*, holistic approach, Indian system of medicine, *Janudhara*, knee osteoarthritis, *Panchkarma*, traction

INTRODUCTION

Janusandhigata Vata in *Ayurveda* aligns closely with knee osteoarthritis (OA) symptoms, such as Vatapurandritisparsh,[1] (swelling), Prasaranakunchana Vedana,[1] (pain on movement), Sandhi Shoola,[2] (pain in joint), and Atopa[3] (crepitation), which limits daily life activities, such as walking, standing, and personal care. Knee OA is a prevalent degenerative joint disease marked by the breakdown of cartilage, leading to joint pain, stiffness, and reduced mobility. Factors contributing to OA include age, obesity, genetics, and biomechanical stresses, affecting millions worldwide, particularly those over 50. While conventional treatments, such as non-steroidal anti-inflammatory drugs, corticosteroids, and knee replacements, are common, they often come with side effects and financial burdens, driving interest in alternative therapies.

Aims and Objectives

- To assess the efficacy of *Janudhara* with *Parijat Taila* and manual traction in managing *Janusandhigata Vata* (knee OA)
- To improve quality of life (QOL).

Address for correspondence:
Sandeep Kumar, Department of Panchkarma, PGIA, Dr. Sarvepalli Radhakrishnan Rajasthan Ayurved University, Jodhpur, India. Mobile: 919983668599.
E-mail: sandeepbams21@gmail.com

Received: 21-10-2024
Revised: 21-12-2024
Accepted: 30-12-2024

MATERIALS AND METHODS

Study Design

This open-label interventional study was conducted with 30 patients diagnosed with *Janusandhigata Vata*, with ages ranging from 20 to 70 years, at DSRRAU Jodhpur's *Panchakarma* outpatient department/inpatient department. The study duration was 30 days, with follow-ups on the 31st and 60th days post-treatment. Ethical clearance was obtained (IEC No. DSRRAU/PGIA/IEC/21-22/516), and the study was registered (CTRI/2023/10058616). The drug *Parijat Taila* was prepared in the pharmacy of DSRRAU, Jodhpur, Rajasthan.

Treatment Protocol

The procedure involved *Janudhara* with *Parijat Taila* (prepared with sesame oil and *Parijat Patra*) combined with manual traction.

1. Pre-treatment: Patients wore minimal clothing and were seated comfortably
2. Primary treatment: Warm *Parijat* oil was poured over the knee from a consistent height of 8–9 inches for 45 min, followed by a gentle knee massage. Manual traction was applied for 10 min per knee daily
3. Post-treatment: The knee area was wiped clean, covered, and protected from direct exposure for at least 30 min.

Inclusion Criteria

- Diagnosed cases of knee OA (grades 0 to 4 based on Kellgren-Lawrence criteria)
- Ages between 20 and 70, consenting to treatment.

Exclusion Criteria

- Patients with malignancy, cardiac or renal disease, traumatic knee injuries, or severe limitations were excluded.

Outcome Measures

- Primary measures: *Sandhishoola* (Joint pain through Visual Analog Scale (VAS) graded 0–10).
- *Sandhishotha (*swelling), crepitation (*Sandhiatopa),* and *Prasarana Aakunchanayo Pravruttischavedana* (range of motion [ROM]) on a graded scale (0–3).
- Secondary measures: Knee injury and OA outcome score (KOOS) score evaluating pain, function in daily living, and QOL.
- Radiographic analysis: X-ray findings pre- and post-treatment.

RESULTS

Demographics

- The majority of patients were female (60%), aged between 40 and 70 years.
- Most were middle-class (86.67%), with a high prevalence of vegetarians (73.33%).

Efficacy of Treatment

- VAS for pain: Pain scores reduced from 7.90 to 4.83 post-treatment, showing a significant 38.82% improvement ($P < 0.05$)
- Swelling: The average swelling score reduced by 58.33%, indicating a significant reduction ($P < 0.05$)
- Crepitus: Improved by 54.29%, as shown by decreased crackling sensations
- ROM: ROM improved by 36.62%, indicating less stiffness and enhanced movement
- KOOS score: Improved by 44.16%, showing enhanced knee function and QOL
- Radiographic findings: Minor radiographic changes in the knee joint were observed, with X-ray scores showing a 5.06% change.

DISCUSSION

Discussion on Results with Probable Mode of Therapy

The general line of treatment for the *Sandhigata Vata* is "*Sneha upnaha agnikarma bandhana unmardanani cha*".[4]

The effect of therapy on the signs and symptoms of 30 patients of *Janusandhigata Vata* are as follows:

Effect of Therapy on *Sandhishoola* (Joint Pain-VAS)

The mean score before treatment was 7.90 which decreased to 4.83 after treatment, with standard deviation (SD) ± 0.27 giving a relief of 38.82% which was significant ($P < 0.05$). *Janudhara* process was an act of both *Snehana* and *Swedana* worth mentioning, as *Snehana* was said to be *Mardavakara* and *Swedana* was said to be *Shulaghna*. Pharmacologically had been proven analgesic, anti-nociceptive effects, and as per *Ayurveda* classics oil has the *Vedana Sthapana* effect. Vitiation of *Vata* has an important role in the arising of *Janusandhigata Vata*. Manual traction also reduces pain by reducing pressure on joint surfaces, relaxing muscles and tissues, by increasing blood supply and fluid exchange. After completion of therapy, the VAS score was also reduced which was noted by the facial expression of patients, before and after the treatment. It means the efficacy of therapy in *Sandhishoola* is statistically significant.

Parameters	Mean		Median		SD		Wilcoxon W	*P*-value	% effect	Result
	BT	AT	BT	AT	BT	AT				
KOOS	31.40	45.27	31.00	45.00	13.65	14.09	−4.784[b]	0.0000017	44.16	Sig
VAS (Sandhishoola)	7.90	4.83	8.00	5.00	0.99	1.26	−4.844[b]	0.0012750	38.82	Sig
Sandhishotha	2.00	0.83	2.00	1.00	0.98	0.75	−4.532[b]	0.0058471	58.33	Sig
Sandhiatopa	2.33	1.07	3.00	1.00	0.92	0.78	−4.602[b]	0.0041941	54.29	Sig
Prasarana Aakunchanayo Pravruttischavedana	2.37	1.50	3.00	2.00	0.81	0.68	−4.735[b]	0.0021891	36.62	Sig
X-ray (KL system grading)	2.63	2.50	3.00	2.00	0.67	0.63	−2.000[b]	0.0455003	5.06	Sig

[b]data of second observation

Effect of Therapy on *Sandhisotha* (Swelling over Joints)

The mean score before treatment was 2.0 which decreased to 0.83 after treatment, with SD ± 0.23 giving a relief of 58.33% which was significant ($P < 0.05$) *Janudhara* being success to relief the symptoms because it have *Snehana* and *Swedana* effects simultaneously, due to its *Snehana Guna Vata* is getting pacifying and *Swedana* cause relief of *Stabdhata*, *Gaurava* and *Sheeta* due to its inherent qualities. On the other hand, due to *Ushna Virya*, *Vedana Shamaka,* and *Vata Kapha Shamaka* properties. The warmth from the oil helped in increased circulation, encouraging the drainage of excess fluid (edema) from the swollen tissues. Traction also reduces swelling by reducing joint compression, which results as excess fluid that can more easily leave the area. As traction relieves joint pressure and increases space in the joint, it reduces irritation of the soft tissues and cartilage that could be contributing to inflammation. Less inflammation often leads to less fluid accumulation, thereby reducing swelling.

Effect of Therapy on *Sandhi Atopa*

The mean score before treatment was 2.33 which decreased to 1.07 after treatment, with SD ± 0.14 giving a relief of 54.29% which was significant ($P < 0.05$). *Jaudhara* and traction can help to reduce knee crepitation by following factors:

Reducing joint compression

Crepitation often occurs due to the rubbing of rough surfaces inside the knee joint, like cartilage damage or bone spurs. *Janudhara* and traction pull the knee joint surfaces slightly apart, reducing direct contact between irregular surfaces. This separation can decrease the friction that causes the cracking or grinding sound.

Improving joint lubrication

Janudhara and traction promote the movement of synovial fluid, the natural lubricant in the joint. By creating space and encouraging fluid movement, it helps ensure better lubrication between joint surfaces, reducing the likelihood of crepitation.

Aligning joint surfaces[5]

Traction helps to restore proper alignment between the bones in the knee joint. Misalignment which is common in OA, can increase friction and grinding sound. By promoting better joint alignment, traction can reduce irregular contact between joint surfaces of the femur and tibia, leading to less crepitation.

Effect of Therapy on *Prasarana Aakunchanayo Pravruttischa Vedana* (ROM)

The mean score before treatment was 2.37 which decreased to 1.50 after treatment, with SD ± 0.13 giving a relief of 36.62% which was significant ($P < 0.05$). *Jaudhara* and traction can help to improve ROM. ROM was decreased due to pain and stiffness. Medicated warm oil *Dhara* with massage can relieve stiffness by relaxing surrounding tissues of muscles, tendons, and ligaments of the knee joint. Reduced inflammation and stiffness promote painless improved movement of knee joints.

Effect of Therapy on KOOS Index Score Grading

The mean score before treatment was 31.40 which increased to 45.27 after treatment, with SD ± 0.44 giving a relief of 44.16% which was statistically highly significant ($P < 0.001$). The KOOS is a knee-specific instrument, developed to assess the patients' opinions about their knee and associated problems. The KOOS evaluates both short-term and long-term consequences of knee injury. It holds 42 items in 5 separately scored subscales; pain, other symptoms, function in activities of daily living (ADL), function in sport and recreation (sport/rec), and knee-related QOL.

The Five Patient-Relevant Subscales of KOOS are Scored Separately

In KOOS Score Pain (nine items); symptoms (seven items); ADL function (17 items); sport and recreation function (five items); QOL (four items) are included . A Likert scale is used and all items have five possible answer options scored from 0 (no problems) to 4 (extreme problems) and each of the five scores is calculated as the sum of the items included. Scores

are transformed to a 0–100 scale, with zero representing extreme knee problems and 100 representing no knee problems as common in orthopedic assessment scales and generic measures. Scores between 0 and 100 represent the percentage of the total possible score achieved. An aggregate score is calculated.

Pain (*Ruka*) is due to *Vata Prakopa* and continued warm oil *Dhara* is very effective in symptoms. *Janudhara* and traction improve the health of muscles, bones as well as ligaments and joints. Hence, improvement in all parameters of the KOOS Score is seen as significant.

Radiological Finding Discussion

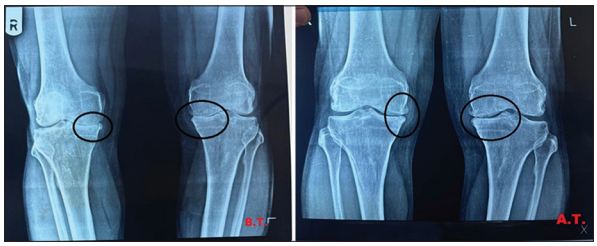
Effect of therapy on X-ray: In this Group the mean score before treatment was 2.63 which decreased to 2.50 after treatment, with SD ± 0.04 giving change in X-ray of 5.06% of patients which was significant.

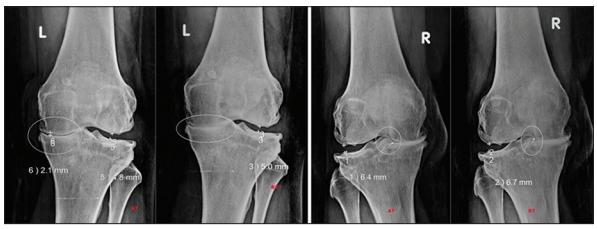
There is often a poor link between changes visible on an X-ray and symptoms of OA: Minimal changes can be associated with a lot of pain, or modest structural changes to joints can occur with minimal accompanying symptoms.[6] Hence, it proves the dissimilarity between the clinical and radiological findings.

Following are the X-ray images showing changes after treatment.

Case 1

Case 2





Case 3

Probable Mode of Action of *Parijat* and Manual Traction

Anti-inflammatory activity

The water-soluble portion of alcoholic extract of the leaves showed significant inflammatory activity against tacute, acute, subad subacute, and chronic models of inflammation in rats It also reduced the inflammatory swelling in the knee joint of rats induced by the intrasynovial injection of turpentine oil The formaldehyde-induced arthritis and inflammation produced by immunological methods,[7,8]

Janudhara is a procedure that evolved from *Parisheka*. It is a kind of *Bahya Snehana* and *Swedana* procedure. *Snehana* mainly acts against the *Ruksha Guna* caused by *Vata* and *Swedana* mainly acts against the *Sheeta Guna*. It also reduces the *Stambha* and *Gauravata*.

The *Janudhara* technique, integrating *Snehana* and *Swedana*, demonstrated analgesic and anti-inflammatory properties consistent with *Ayurvedic* principles. The combination of oil application and manual traction likely facilitated improved joint lubrication, alignment, and reduced joint compression, contributing to reduced pain and stiffness. *Parijat Taila's* properties, including anti-inflammatory and *Vata*-pacifying actions, likely enhanced the therapy's overall efficacy.

Manual physical therapy is a part of conservative management and is effective in managing pain, joint restriction, and disability, while applied in combination with therapeutic exercises.[9] Cervical traction combined with exercise therapy has the additional effect in reducing pain conservatively by manual physical therapy.[10]

Manual traction may aid in reducing joint compression, aligning joint surfaces, and facilitating synovial fluid movement, which likely contributed to reduced crepitus and increased ROM.

CONCLUSION

The study concludes that *Janudhara* with *Parijat Taila* and manual traction is effective in managing knee OA,

significantly improving pain, swelling, and functional ability. *Ayurvedic* treatment may provide a promising alternative or complementary approach for patients seeking non-invasive management options for knee OA. Future studies with larger sample sizes and longer follow-up periods are recommended to validate these findings. The efficacy of a Holistic approach combining *Janudhara* with *Parijat Taila* and manual traction in managing *Janusandhigata Vata* (knee OA).

REFERENCES

1. Shastri K. Gorkhnath Chaturdvedi Vidyotani Hindi Commentatory Charak Samhita Chikitsa Sathana. Ch. 28., Shlok no. 37. Gopal Mandir Lane, Varanasi: Chukhamba Surbharati Prakashan K; 1990.
2. Shastri AD. Sushruta Samhita of Sushruta with Ayurveda tatva Sandipika Hindi Commentatory, Nidan Sathana. Ch. 1., Shlok no. 28. Gopal Mandir Lane. Varanasi: Chukhamba Surbharati Prakashan K; 2013.
3. Upadhaya Y, editor. Madhav Nidana. Part 1., 30th ed., Ch. 22., Shalok no. 21. Varanasi: Chukhmba Sanskrit Bhavan; 2000. p. 418.
4. Shastri AD. Sushruta Samhita of Sushruta with Ayurveda Tatva Sandipika Hindi Commentatory, Chiktsa Sathana. Ch. 4., Shlok no. 8. Varanasi, Gopal Mandir Lane: Chukhamba Surbharati Prakashan K; 2013.
5. Ramesh AM, Swamy VK, Goud KM. A comparative clinical study to evaluate the efficacy of janubasti followed by patrapinda sweda and janubasti followed by atasi upanaha sweda in janu sandhigata vata w.s.r to osteoarthritis of knee joint. Int J Ayurveda Pharma Res 2018;6:17-21.
6. National Institute for Health and Care Excellence. Osteoarthritis: The Care and Management of Osteoarthritis in adults. United Kingdom: National Institute for Health and Care Excellence; 2014.
7. Saxena RS, Gupta G, Saxena KK, Singh RC, Prasad DM. Study of anti-inflammatory activity in the leaves of Nyctanthes arbor-tristis Linn.--an Indian medicinal plant. J Ethnopharmacol 1984;11:319..
8. Parekh S, Soni A. Nyctanthes arbor-tristis: Comprehensive review on its pharmacological, antioxidant, and anticancer activities. J Appl Biol Biotechnol 2020;8:95-104.
9. Boyles R, Toy P, Mellon J Jr., Hayes M, Hammer B. Effectiveness of manual physical therapy in the treatment of cervical radiculopathy: A systematic review. J Manual Manipulative Ther 2011;19:135-42.
10. Fritz JM, Thackeray A, Brennan GP, Childs JD. Exercise only, exercise with mechanical traction, or exercise with over-door traction for patients with cervical radiculopathy, with or without consideration of status on a previously described subgrouping rule: A randomized clinical trial. J Orthoepy Sports Phys Ther 2014;44:45-57.

Source of Support: Nil. **Conflicts of Interest:** None declared.