



Research Article

MURIVENNA TAILA IN THE MANAGEMENT OF POST-FRACTURE AND POST-POP (PLASTER OF PARIS) PAIN AND STIFFNESS: A RETROSPECTIVE OBSERVATIONAL STUDY WITH CLINICAL EVIDENCE REVIEW

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ABSTRACT

Murivenna Taila, a classical Ayurvedic medicated oil with established anti-inflammatory, analgesic, and tissue-regenerative properties, is widely used in Kerala and is referenced in Kerala-specific Ayurvedic texts for fracture management (*Bhagna Chikitsa*). **Objective:** To evaluate the clinical effectiveness of *Murivenna Taila* applied externally in reducing pain, edema, and joint stiffness in patients with post-fracture sequelae and post-POP cast removal syndrome, through retrospective observational analysis of OPD case records. **Methods:** Retrospective analysis of 30 OPD case records over a 16-month period (December 2024 to March 2026) was conducted. Patients who had received external application of *Murivenna Taila* as part of integrative Ayurvedic management for post-fracture pain or post-POP stiffness were included. Subjective parameters (Pain-VAS, joint stiffness, and Patient Global Impression of Change) and objective parameters (swelling/edema grade and restricted range of motion grade) were graded and assessed at baseline, day 7, and day 14. **Results:** Total number of patients 30 (mean age 37.4 ± 11.2 years; M:F = 19:11). 27 (90%) reported clinically meaningful pain reduction (VAS reduction ≥ 2 points) within 14 days of initiating *Murivenna Taila* application. Mean VAS at baseline was 7.13 ± 1.33 , reducing to 2.63 ± 0.78 at day 14 (paired $t=21.4$, $p<0.001$). Reduction in NJSS scores from baseline was observed in 29 out of 30 patients (96.7%) by day 14 (paired $t=17.8$, $p<0.001$). Grade-wise reduction was also observed for swelling/edema and restricted range of motion. Nevertheless, 2 patients reported no subjective overall improvement on PGIC assessment. **Conclusion:** External application of *Murivenna Taila* demonstrates promising analgesic and anti-stiffness effects in post-fracture and post-POP conditions. It offers a safe, accessible, and cost-effective adjunct to conventional rehabilitation. Prospective controlled studies are warranted.

INTRODUCTION

Musculoskeletal injuries, particularly fractures and their rehabilitative sequelae, constitute a major source of morbidity in the working-age population worldwide. In India, fractures constitute a major public health burden, with increasing incidence due to trauma, osteoporosis, and road traffic accidents, with a

disproportionate burden in rural and semi-urban populations [1].

Following conventional orthopaedic management, including fracture reduction and immobilization with Plaster of Paris (POP) casts, many patients continue to experience persistent post-fracture pain, localized edema, periarticular stiffness, and restricted range of motion after cast removal. These post-immobilization complications represent a clinically under-addressed aspect of fracture rehabilitation.

The conventional pharmacological approach typically involves NSAIDs, physiotherapy, and analgesics. However, prolonged NSAID use is

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associated with gastrointestinal, renal, and cardiovascular risks [2,3], and many patients in primary and rural settings have limited access to specialized therapies. In this context, Ayurvedic external therapies- particularly medicated oil applications (*Taila Abhyanga*)- offer a compelling complementary modality. Classical Ayurveda describes fracture management as *Bhagna Chikitsa*, with medicated oils central to the rehabilitation phase. Post-fracture sequelae are understood primarily as *Bhagna-janya Vata Vyadhi*- *Vata dosha* aggravation consequent to trauma and immobilisation- manifesting as pain (*Shoola*), stiffness (*Stambha*), and impaired circulation (*Vyana Vata dushti*) [4,5]. The therapeutic principle of *Snehana* (oleation) and *Abhyanga* (medicated massage) directly addresses these pathological processes through transdermal delivery of bioactive compounds, mechanical enhancement of lymphatic drainage, and restoration of *Srotas* (microchannel) integrity, thus reducing *Vata* aggravation, accelerating tissue regeneration, and restoring neuromuscular function.

Murivenna Taila (also spelled *Murivenna*, *Murivena*, or *Murivenna Keram*) is a poly-herbal medicated oil preparation with a long history of use in Kerala Ayurvedic practice. It is specifically indicated for fractures (*Bhagna*), dislocations (*Sandhi muktha*), contusions (*Abhighata*), and associated pain and swelling. The formulation is referenced in the *Sahasrayogam*, a classical Kerala Ayurvedic

compendium, and in the Ayurvedic Formulary of India (AFI) [6].

Despite widespread traditional use, peer-reviewed clinical evidence for *Murivenna Taila* in post-fracture and post-POP applications is remarkably sparse- limited to a small number of case reports and case series [7,8]. The lack of published evidence creates a translational gap that limits its formal integration into integrative orthopaedic care protocols. This retrospective observational study aims to contribute clinical evidence by systematically analysing graded subjective and objective outcomes in OPD patients who received *Murivenna Taila* as part of their Ayurvedic care for post-fracture and post-POP pain and stiffness.

***Murivenna Taila*: Composition and Pharmacological Basis**

Classical Description and Reference

Murivenna Taila is documented in the *Sahasrayogam (Tailayoga Prakarana)* and is classified under *Bhagna-Sandhi Vishlesha Chikitsa* (treatment of fractures and joint dislocations). The *Ashtangahridayam Uttara Sthana* and *Sushruta Samhita Chikitsa Sthana* also provide broader context for external oleation therapy in traumatic conditions [4,5].

Key Ingredients and Their Therapeutic Significance

The formulation of *Murivenna Taila* varies slightly across pharmacopeial references; Table 1 presents the core composition as per AFI and *Sahasrayogam*.

Table 1: Key ingredients of *Murivenna Taila* and their therapeutic relevance to post-fracture and post-POP management

Ingredient	Botanical Name	Therapeutic Action Relevant to Fracture/POP Sequelae
<i>Karanja</i>	<i>Pongamia pinnata</i>	Anti-inflammatory, reduces swelling, <i>Shothahara</i> , <i>Vata-Kapha shamana</i>
<i>Nagavalli</i>	<i>Piper betle</i>	Antiseptic and anti-inflammatory, relieves pain, swelling and inflammation, <i>Vata-Kapha shamana</i>
<i>Kumari</i>	<i>Aloe vera</i>	Anti-inflammatory, analgesic and wound healing; cooling effect with tissue regeneration, <i>Vata-Pitta shamana</i>
<i>Palandu</i>	<i>Allium cepa</i>	Anti-inflammatory and antimicrobial, reduces localized pain & swelling, <i>Vata Shamana</i>
<i>Shigru</i>	<i>Moringa oleifera</i>	Analgesic, anti-inflammatory, reduces pain and inflammation in muscles and joints, <i>Sothaghna</i>
<i>Buka</i>	<i>Spermacoce hispida</i>	Analgesic, anti-inflammatory, traditionally used in fracture management
<i>Paribadra</i>	<i>Erythrina indica</i>	Potent anti-inflammatory and analgesic, reduces joint stiffness, <i>Shothahara</i>
<i>Tandulambu</i>	Sour rice water (<i>Oryza sativa</i>)	Cooling and soothing, nourishes bone and joints, <i>Pitta shamana</i>
<i>Shatavari</i>	<i>Asparagus racemosus</i>	Soothing and analgesic; aids damaged tissue repair, <i>Vata-Pitta shamana</i>

<i>Kera Taila</i>	<i>Cocos nucifera</i> oil	Deep penetration; nourishes and strengthens tissue; Pitta shamana
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Figure 1. Piper betle (*Nagavalli*) Figure 2. *Allium cepa* (*Palandu*) Figure 3. Aloe vera (*Kumari*)

Topical Pharmacological Overview of Key Ingredients

Murivenna Taila ingredients provide pharmacological support for topical external use in pain relief, fracture management, and bone/muscle issues through anti-inflammatory, analgesic, vasodilatory, and tissue-strengthening mechanisms.

Anti-Inflammatory action: *Moringa oleifera* and Aloe vera polysaccharides reduce post-fracture edema and sprain inflammation via COX-2 inhibition and cytokine downregulation, ideal for topical application in stiffness^[9]. *Pongamia pinnata* leaves offer anti-edema effects, strengthening ligaments during recovery^[10].

Analgesic pain relief: Piper betle phenols and *Allium cepa* organosulfur compounds deliver local analgesia for muscle spasms, gout, and POP removal pain when massaged, with vasodilatory action easing nerve compression^[11,12].

Bone and muscle healing: *Erythrina variegata* flavonoids promote collagen synthesis and bone nourishment for fractures/sprains^[13]; *Asparagus racemosus* enhances tissue repair and muscle strength in external applications. The coconut oil base aids penetration for faster relief in arthritis and soft tissue trauma^[14].

The poly-herbal combination in *Murivenna Taila* targets the Ayurvedic pathophysiology of post-fracture pain: aggravated *Vata* causing pain and neuromuscular dysfunction, residual *Ama* causing stiffness, and vitiated *Pitta* and *Rakta* causing local inflammation^[15].

The Problem: Post-POP and Post-Fracture Sequelae – A Clinician's Perspective

The removal of a POP cast after fracture immobilization frequently unveils a constellation of

distressing symptoms for the patient: persistent aching pain, limb stiffness with markedly reduced range of motion, skin changes (dryness, scaling, hypopigmentation), and psychomotor anxiety about weight-bearing. These symptoms may persist for weeks to months. In resource-limited settings—particularly semi-urban and rural Northeast India where specialist physiotherapy is often inaccessible—patients frequently report inadequate guidance on post-cast management.

From an Ayurvedic pathophysiological perspective, prolonged immobilization leads to: aggravation of *Vyana Vata* (impaired circulation and neuromuscular coordination); *Asthi* and *Mamsa Dhatu kshaya* (atrophy of bone and muscle tissue); accumulation of *Ama* (metabolic waste) in local tissues causing stiffness and heaviness; and *Srotas dushti* (obstruction of microchannels) leading to reduced local healing.

Murivenna Taila Abhyanga counters this pathophysiology effectively: Its lipophilic coconut base facilitates transdermal penetration to deeper tissues, anti-inflammatory phytochemicals (e.g., from *Moringa oleifera* and aloe vera) suppress prostaglandin-mediated pain, while massage enhances lymphatic drainage, resolving edema and restoring perfusion for mobility^[16].

METHODOLOGY

Study Design

This is a retrospective, single-centre, observational study based on analysis of OPD case records maintained at the I.A. Ayurvedic Medical College OPD, Ri Bhoi, Meghalaya. The study period covered December 2024 to March 2026. The present study was based on retrospective review of de-identified patient records without any prospective

modification of patient management. Written informed consent for use of anonymized clinical data was obtained from all participants. The study adhered to the ethical principles of the Declaration of Helsinki.

Inclusion and Exclusion Criteria

Inclusion Criteria: Patients presenting to the OPD with post-fracture pain and/or post-POP cast removal stiffness; age 18–65 years; fractures confirmed by radiological evidence (X-ray report); patients who received *Murivenna Taila* external application as part of their Ayurvedic management; minimum follow-up of 14 days documented in case records.

Exclusion Criteria: Open fractures or post-surgical wound sites (contraindication for direct oil application); known allergy to any component of *Murivenna Taila*; co-existing systemic conditions (diabetes mellitus with peripheral neuropathy, active infections at site, malignancy); incomplete case records; patients on concurrent systemic corticosteroids.

Intervention Protocol

Murivenna Taila, prepared as per AFI/Sahasrayogam standard, was applied externally to the affected region. Application protocol as documented: (1) *Taila* applied at body-warm temperature to the affected limb and adjacent joints; (2) Gentle circular and stroking massage (*Abhyanga*) performed by a trained attendant or self-applied by the patient post-instruction, 15–20 minutes per session; (3) Frequency- twice daily; (4) Duration- Minimum 14 days (some patients continued for 28–42 days); (5) Concurrent treatment- Mild hot fomentation (Nadi Sweda) in selected cases, with dietary advice per Ayurvedic principles.

Outcome Measures and Gradation of Subjective and Objective Parameters

To allow uniform documentation and statistical comparison, both subjective (patient-reported) and objective (clinician-assessed) parameters were graded

on structured ordinal scales, as detailed below and summarised in Table 2.

(A) Subjective Parameters

- Pain – Visual Analogue Scale (VAS, 0–10): assessed at baseline (day 0), day 7, and day 14. For categorical analysis, VAS scores were graded as: Grade 0 – No pain (score 0); Grade 1– Mild pain (score 1–3); Grade 2– Moderate pain (score 4–6); Grade 3– Severe pain (score 7–10).
- Joint/Limb Stiffness– Numerical Joint Stiffness Score (NJSS, 0–10), patient-reported global stiffness rating, graded identically: Grade 0 – No stiffness (0); Grade 1 – Mild (1–3); Grade 2 – Moderate (4–6); Grade 3 – Severe (7–10).
- Patient Global Impression of Change (PGIC) at Day 14 – 5-point Likert scale: Much worse / Slightly worse / No change/ Slightly improved/ Much improved (analysed in the present cohort as four observed categories: No change, minimally improved, Much improved, very much improved).

(B) Objective Parameters

- Local swelling/Edema– Graded by clinical (circumferential/visual) assessment at the fracture/joint site: Grade 0 – No edema; Grade 1 – Mild, palpable peri-articular fullness without visible swelling; Grade 2– Moderate, visible swelling with mild pitting, limb circumference difference <2cm vs. contralateral side; Grade 3– Severe, gross visible swelling, pitting edema, circumference difference ≥2cm.
- Restricted Range of Motion (ROM) of the affected joint – graded relative to expected normal ROM for the joint: Grade 0– Full/near-normal ROM (>90% of normal); Grade 1– Mild restriction (75–90% of normal); Grade 2– Moderate restriction (50–75% of normal); Grade 3– Severe restriction (<50% of normal).

Adverse events: any cutaneous or systemic adverse reactions were documented at each visit.

Table 2: Gradation scales used for subjective and objective parameters

Parameter	Type	Grading Criteria (Grade 0 – Grade 3)
Pain (VAS)	Subjective	Grade 0: None (0) Grade 1: Mild (1–3) Grade 2: Moderate (4–6) Grade 3: Severe (7–10)
Joint Stiffness (NJSS)	Subjective	Grade 0: None (0) Grade 1: Mild (1–3) Grade 2: Moderate (4–6) Grade 3: Severe (7–10)
PGIC (Day 14)	Subjective	No change Minimally improved Much improved Very much improved
Swelling / Edema	Objective	Grade 0: None Grade 1: Mild (palpable fullness) Grade 2: Moderate (visible, <2 cm difference) Grade 3: Severe (gross, ≥2 cm difference)
Restricted ROM	Objective	Grade 0: >90% of normal Grade 1: 75–90% Grade 2: 50–75% Grade 3: <50% of normal



Figure 4. X- ray showing left distal radial fracture



Figure 5. X- ray showing a Comminuted intra-articular distal radius fracture

Statistical Analysis

Descriptive statistics (mean $\pm$ SD) were used for continuous variables, and frequencies/percentages for categorical (grade-wise) variables. Paired t-test was applied to compare VAS and NJSS scores between baseline, day 7, and day 14. Wilcoxon signed-rank test was used to compare grade-wise (ordinal) distributions of swelling/edema and restricted ROM across time points. Chi-square test was used for categorical variables. $p < 0.05$ was considered statistically significant. Statistical analysis was performed using SPSS v25.0.

RESULTS

Demographic Profile

A total of 35 case records were initially identified. Five records were excluded due to incomplete follow-up documentation, yielding a final analytical sample of 30 patients. Demographic and clinical characteristics are summarised in Table 3.

Table 3: Demographic and clinical profile of study participants (n = 30)

Variable	Value / Distribution
Total patients (n)	30
Mean age (years)	37.4 $\pm$ 11.2 (range: 18–62)
Sex ratio (M:F)	19:11
Primary diagnosis – Post-fracture pain (actively healing/healed)	17 (56.7%)
Primary diagnosis – Post-POP cast removal stiffness and pain	13 (43.3%)
Fracture site – Distal radius / wrist	12 (40%)
Fracture site – Ankle / distal fibula	9 (30%)
Fracture site – Tibial shaft	4 (13.3%)
Fracture site – Clavicle	2 (6.7%)
Fracture site – Other (metacarpal, phalanges, 5th metatarsal)	3 (10%)
Mean duration of POP immobilization	4.9 $\pm$ 1.24 weeks
Mean baseline VAS score	7.13 $\pm$ 1.33
Mean baseline NJSS score	6.4 $\pm$ 1.47
Concurrent physiotherapy (yes)	8 (26.7%)



Figure: 6 Application of Murivenna taila over the right wrist

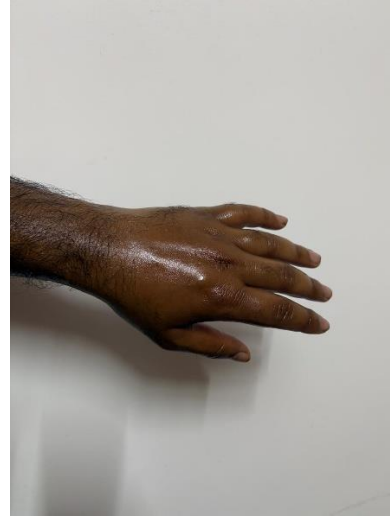


Figure: 7 Application of Murivenna taila over the left wrist



Figure: 7 Application of Murivenna taila over the foot



Figure: 8 Post treatment appearance demonstrating reduction in swelling

Symptom-wise Observation of Patients (Grade-wise Distribution)

Table 4 presents the symptom-wise (grade-wise) distribution of patients for each subjective and objective parameter at baseline, day 7, and day 14.

Table 4: Symptom-wise (grade-wise) observation of patients at baseline, day 7 and day 14 (n = 30)

Symptom / Parameter	Grade	Baseline n (%)	Day 7 n (%)	Day 14 n (%)
Pain (VAS-based grade)	Grade 0 – None	0 (0%)	0 (0%)	7 (23.3%)
	Grade 1 – Mild	0 (0%)	5 (16.7%)	20 (66.7%)
	Grade 2 – Moderate	8 (26.7%)	20 (66.7%)	3 (10%)
	Grade 3 – Severe	22 (73.3%)	5 (16.7%)	0 (0%)
Joint stiffness (NJSS-based grade)	Grade 0 – None	0 (0%)	0 (0%)	10 (33.3%)
	Grade 1 – Mild	0 (0%)	8 (26.7%)	18 (60%)
	Grade 2 – Moderate	15 (50%)	20 (66.7%)	2 (6.7%)
	Grade 3 – Severe	15 (50%)	2 (6.7%)	0 (0%)
Swelling / Edema	Grade 0 – None	0 (0%)	5 (16.7%)	25 (83.3%)
	Grade 1 – Mild	7 (23.3%)	15 (50%)	5 (16.7%)
	Grade 2 – Moderate	18 (60%)	10 (33.3%)	0 (0%)

	Grade 3 – Severe	5 (16.7%)	0 (0%)	0 (0%)
Restricted Range of Motion (ROM)	Grade 0 – None	0 (0%)	3 (10%)	22 (73.3%)
	Grade 1 – Mild	5 (16.7%)	15 (50%)	8 (26.7%)
	Grade 2 – Moderate	15 (50%)	12 (40%)	0 (0%)
	Grade 3 – Severe	10 (33.3%)	0 (0%)	0 (0%)

RESULTS

Subjective and Objective Parameter-wise Comparison

Table 5 summarises the mean scores of each subjective and objective parameter at the three assessment points, along with the percentage change from baseline to day 14.

Table 5: Subjective and objective parameter-wise results (mean $\pm$ SD; n = 30)

Parameter Type	Parameter	Baseline (Day 0)	Day 7	Day 14	% Change (Day 0–Day 14)
Subjective	Pain (VAS, 0–10)	7.13 $\pm$ 1.33	5.27 $\pm$ 0.94	2.63 $\pm$ 0.78	–63.1%
Subjective	Joint stiffness (NJSS, 0–10)	6.40 $\pm$ 1.47	4.30 $\pm$ 1.08	2.13 $\pm$ 0.83	–66.7%
Objective	Swelling/edema (Grade 0–3)	1.93 $\pm$ 0.69	1.17 $\pm$ 0.70	0.17 $\pm$ 0.38	–91.2%
Objective	Restricted ROM (Grade 0–3)	2.17 $\pm$ 0.79	1.30 $\pm$ 0.66	0.27 $\pm$ 0.45	–87.6%

Statistical Tables of Results

Table 6 presents the paired-comparison statistics (Baseline vs. Day 7 and Baseline vs. Day 14) for all subjective and objective parameters.

Table 6: Statistical comparison of subjective and objective parameters across time points (paired t-test / Wilcoxon signed-rank test, n = 30)

Parameter	Comparison	Mean Difference	SD of Difference	t-value (or z-value)	p-value
Pain (VAS)	Baseline vs Day 7	1.86	0.91	t = 11.2	<0.001
	Baseline vs Day 14	4.50	1.15	t = 21.4	<0.001
Joint stiffness (NJSS)	Baseline vs Day 7	2.10	1.02	t = 11.3	<0.001
	Baseline vs Day 14	4.27	1.31	t = 17.8	<0.001
Swelling / edema (Grade)	Baseline vs Day 14	1.76	–	z = 5.1	<0.001
Restricted ROM (Grade)	Baseline vs Day 14	1.90	–	z = 5.2	<0.001

Patient Global Impression of Change (PGIC) at Day 14

Table 7: Distribution of Patient Global Impression of Change (PGIC) at day 14 (n = 30)

PGIC Category	n	%
Very much improved	14	46.7%
Much improved	10	33.3%
Minimally improved	4	13.3%
No change	2	6.7%
Total	30	100%

Overall clinical response, defined as a reduction of ≥ 2 points in VAS score at day 14, was observed in 27 out of 30 patients (90%), indicating a high rate of clinically meaningful improvement. Patients with concurrent physiotherapy (n=8) showed a marginally better improvement in objective ROM and swelling grades, though the difference did not reach statistical significance in this sample size ($p > 0.05$ on chi-square comparison), suggesting a possible complementary benefit that warrants evaluation in a larger cohort.

Adverse Events

No serious adverse events were recorded. No patient reported systemic reactions, burns, or skin breakdown. The safety profile was excellent across all 30 patients.

DISCUSSION

The findings of this retrospective observational study demonstrate a clinically meaningful and statistically significant reduction in post-fracture and post-POP pain and stiffness following external application of *Murivenna Taila*, across both subjective parameters (pain, stiffness, PGIC) and objective parameters (swelling/edema, restricted ROM). A 90% response rate- defined as VAS reduction of ≥ 2 points- within 14 days represents a clinically relevant outcome in this population.

From an Ayurvedic perspective, the therapeutic rationale is well-founded. Post-fracture pain can be understood as *Bhagna-janya Vata Vyadhi*, wherein *Vata Dosha* is aggravated due to trauma and immobilization, marked by *Vyana Vata* aggravation impairing circulation and neuromuscular coordination. *Murivenna Taila's Vata-shamana* effects stem from its lipophilic coconut base for transdermal delivery, anti-inflammatory botanicals (e.g., *Moringa oleifera* COX inhibition, *Aloe vera* cytokine suppression), and massage-enhanced lymphatic drainage. Topical application bypasses first-pass metabolism, delivering analgesics like *Piper betle* phenols directly to musculoskeletal tissues via vasodilation from warmth, outperforming systemic NSAIDs in safety for comorbid patients.

A notable clinical finding in this study is the marked improvement in post-immobilization joint stiffness, as reflected by the progressive reduction in NJSS scores and the parallel grade-wise resolution of swelling and restricted ROM (Table 4). Prolonged POP immobilization is known to cause peri-articular fibrosis, synovial thickening, and muscle stiffness. The *Snigdha* (unctuous) and *Sukshma* (penetrative) properties of the *Taila*, along with the mechanical effect of massage, may help reverse these changes by

improving local circulation, tissue flexibility, and lymphatic drainage.

The concurrent use of physiotherapy in 26.7% of patients reflects a real-world integrative clinical approach. Although patients receiving physiotherapy showed a trend towards better improvement in joint stiffness and ROM, the difference was not statistically significant ($p > 0.05$). This may be attributed to the limited sample size, and future studies with larger cohorts are warranted to evaluate the additive or synergistic effects of combined therapy.

study has several limitations. The observational design without a control group limits the ability to attribute outcomes solely to *Murivenna Taila*. There is a possibility of selection bias, as patients opting for Ayurvedic treatment may differ in health-seeking behaviour from the general orthopedic population. Additionally, application protocol could not be uniformly ensured across all cases, and the grade-wise objective assessments (swelling, ROM), while structured, retained an element of clinician judgment. These factors highlight the need for well-designed prospective randomized controlled trials to establish stronger causal evidence.

Nonetheless, this study contributes to the evidence base in a meaningful way. For the practicing clinician- particularly in Northeast India, where Ayurvedic practitioners serve as primary care providers for a significant proportion of the population- *Murivenna Taila* represents a safe, accessible, affordable, and evidence-congruent option for post-fracture rehabilitative support.

CONCLUSION

External application of *Murivenna Taila* demonstrates clinically meaningful and statistically significant analgesic and anti-stiffness effects in patients with post-fracture pain and post-POP cast removal syndrome, with consistent improvement across both subjective (pain, stiffness, PGIC) and objective (swelling, ROM) graded parameters. Its excellent safety profile, affordability, and accessibility- especially in the Northeast Indian context- make it a valuable adjunct to conventional orthopedic rehabilitation. The poly-herbal synergy of its ingredients aligns with both classical Ayurvedic principles of *Bhagna Chikitsa* and emerging phytopharmacological evidence.

This observational evidence provides a clinically grounded rationale for integrating *Murivenna Taila* into standard post-fracture care protocols in Ayurvedic clinical practice. We recommend prospective, adequately powered, randomized controlled trials with standardized *Taila* preparations,

structured subjective/objective grading, and blinded outcome assessment to further validate these findings.

REFERENCES

1. Joshipura MK, Shah HS, Patel PR, et al. Trauma care systems in India. *Injury*. 2003; 34(9): 686-692.
2. Al-Saeed A. Gastrointestinal and cardiovascular risk of nonsteroidal anti-inflammatory drugs. *Oman Med J*. 2011; 26(6): 385-391. doi:10.5001/omj.2011.101.
3. Davies NM, Reynolds JK, Undeberg MR, Gates BJ, Ohgami Y, Vega-Villa KR. Minimizing risks of NSAIDs: cardiovascular, gastrointestinal and renal. *Expert Opin Drug Saf*. 2007; 6(11): 1643-1655. doi:10.1586/14737175.6.11.1643.
4. Tripathi B, editor. *Ashtanga Hridayam of Srimad Vagbhata, Uttara Sthana, Chapter 27: Bhanga Pratishedha*. Delhi: Chaukhamba Sanskrit Pratishthan; 2013. [A.H.Ut. 27]
5. Shastri KA. *Sushruta Samhita, Chikitsa Sthana, Chapter 3: Bhagna Cikitsita*. Varanasi: Chaukhambha Sanskrit Sansthan; 2015. [Su.Chi. 3]
6. Government of India, Ministry of Health and Family Welfare. *The Ayurvedic Formulary of India, Part III*. 1st ed. New Delhi: Dept. of AYUSH; 2011.
7. Koriya H, Dudhamal TS. Management of post fracture stiffness by Murivenna Taila Parisheka with rehabilitation exercise: a case report. *Int J AYUSH Case Rep*. 2022; 6(3): 285-289.
8. Benny GA, Varghese T, Vijayakumar S, Robin DT. Effective management of Colles fracture using Murivenna and Abha Guggulu: a case report. *J Ayurveda Integr Med*. 2023; 14(4): 100786. doi:10.1016/j.jaim.2023.100786.
9. Adedapo AA, Falayi OO, Oyagbemi AA. Evaluation of the analgesic, anti-inflammatory, anti-oxidant, phytochemical and toxicological properties of the methanolic leaf extract of commercially processed *Moringa oleifera* in some laboratory animals. *J Basic Clin Physiol Pharmacol*. 2015; 26(5): 491-499.
10. Srinivasan K, Muruganandan S, Lal J, Chandra S, Tandan SK, Prakash VR. Evaluation of anti-inflammatory activity of *Pongamia pinnata* leaves in rats. *J Ethnopharmacol*. 2001; 78(2-3): 151-157. doi:10.1016/S0378-8741(01)00333-6.
11. Alam B, Akter F, Parvin N, Pia RS, Akter S, Chowdhury J, et al. Antioxidant, analgesic and anti-inflammatory activities of the methanolic extract of *Piper betle* leaves. *Avicenna J Phytomed*. 2013; 3(2): 112-125.
12. Meegada PP, Pathapati RM, Rayam S, Nallabothula RK. Evaluation of analgesic and anti-inflammatory properties of the *Allium cepa* extract in rats. *Int J Basic Clin Pharmacol*. 2021; 10(7): 789-794.
13. Zhang Y, Li Q, Li X, Wan HY, Wong MS. *Erythrina variegata* extract exerts osteoprotective effects by suppression of the process of bone resorption. *Br J Nutr*. 2010; 104(7): 965-971. doi:10.1017/S0007114510001610.
14. Kappally S, Shirwaikar A, Shirwaikar A. Coconut oil – a review of potential applications. *Hygeia J D Med*. 2015; 7: 34-41. doi:10.15254/H.J.D.Med.7.2015.149.
15. Prasad MRP, et al. A comparative study to evaluate the efficacy of splinted bandage with Murivenna and plaster of Paris in the management of Colles fracture. *Int Ayurvedic Med J*. 2015; 3(2): 594-600.
16. Mahesh S, Praveen Kumar KS. A comprehensive review of Murivenna, an Ayurveda formulation. *Eur Chem Bull*. 2023; 12(5): 5527-5534. doi:10.31838/ecb/2023.12.5.426.

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