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"AYURVEDIC AND PANCHAKARMA-BASED MANAGEMENT OF SANDHIGATA VATA (KNEE OSTEOARTHRITIS): A REVIEW OF RANDOMIZED EVIDENCE"

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ABSTRACT:
Background: Sandhigata Vata is the Ayurvedic counterpart of osteoarthritis (OA), and knee OA is a frequent reason for the use of Ayurvedic treatment. **Objective:** To review randomized and related evidence on Ayurvedic treatment, including Panchakarma-type procedures, in knee OA. **Methods:** Narrative review based on a PubMed search and classical texts. **Findings:** A multicentre randomized trial in Germany (n = 151) found that a multimodal Ayurvedic treatment produced a larger improvement in WOMAC index at 12 weeks than conventional care, with sustained effects at 6 and 12 months. A systematic review and meta-analysis found large effects for the compound Rumalaya and some evidence for Shunti-Guduchi, whereas for massage, steam therapy and enema no evidence of significant effects was shown against potential bias. A randomized trial of leech therapy (n = 51) showed greater short-term pain relief than topical diclofenac. An equivalence trial (n = 440) showed that two Ayurvedic formulations were equivalent to glucosamine and celecoxib, with asymptomatic SGPT elevation requiring further safety assessment. **Conclusion:** Randomized evidence supports the benefit of some Ayurvedic interventions in knee OA, but it concerns mainly multimodal care and oral formulations rather than classical Panchakarma. Trials of Basti-based regimens are in progress.

KEYWORDS: Sandhigata Vata, Knee osteoarthritis, Basti, Leech therapy, WOMAC, Ayurveda

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INTRODUCTION:

Osteoarthritis (OA) of the knee is a common cause of pain and disability, and Ayurvedic therapies are widely used for its management in South Asia.[1] In Ayurveda the condition is described as Sandhigata Vata, in which vitiated Vata localises in the joints. Ayurvedic strategies include manual therapies, lifestyle and nutritional advice, dietary supplements, medicines, yoga and purification techniques.[2]

In clinical practice, regional procedures such as Janu Basti and Abhyanga, systemic procedures such as Basti, and Raktamokshana are commonly used. This review summarises evidence from randomized and related studies and, where possible, distinguishes classical Panchakarma-type procedures from oral formulations and multimodal packages.

MATERIALS AND METHODS:

This narrative review was prepared using a structured but non-systematic literature search. PubMed was searched on 6 November 2026 using combinations of the terms Sandhigata Vata, knee osteoarthritis, Ayurveda, Panchakarma, Basti, leech therapy and WOMAC. Records were screened by title and abstract, and articles were retained when they described the procedure or condition, its classical rationale, its safety, or clinical outcomes. Classical Ayurvedic texts (Charaka Samhita, Sushruta Samhita and Ashtanga Hridaya) were consulted for conceptual and procedural descriptions. The included studies were heterogeneous (case reports, uncontrolled pilot studies, randomized trials, reviews and trial protocols), so no formal risk-of-bias assessment or meta-analysis was undertaken and the findings are synthesised narratively. The review does not claim exhaustive coverage of the literature.

OBSERVATION AND RESULTS:

1. Multimodal Ayurvedic Treatment: the German Randomized Trial

The most rigorous trial to date is a multicentre, randomized, open-label trial carried out in two hospital clinics and two private outpatient clinics in Germany.[1] The trial design had been published in advance and described a complex Ayurvedic intervention including tailored combinations of manual treatments, massages, dietary and lifestyle advice, selected foods, nutritional supplements and yoga posture advice, compared with conventional care that included self-care advice, pain medication, weight-loss advice and physiotherapy.[2] A total of 151 participants (Ayurveda n = 77; conventional care n = 74) received 15 treatments over 12 weeks.[1] The mean change in the WOMAC index at 12 weeks was 61.0 (95% CI 52.4 to 69.6) in the Ayurveda group and 32.0 (95% CI 21.4 to 42.6) in the conventional group ($p < 0.001$; Cohen's d 0.68), with effects sustained at 6 and 12 months.[1] The authors concluded that results suggest a benefit of Ayurvedic treatment and called for studies to clarify the roles of the different components and non-specific effects.[1]

This trial evaluates a package adapted to a Western clinical setting, and it should not be equated with a classical Panchakarma programme.

2. Systematic Review of Ayurvedic Interventions

A systematic review and meta-analysis included 19 randomized and 14 non-randomized controlled trials involving 2,952 patients.[3] Large and apparently unbiased effects beyond placebo for pain and global improvement were found for the compound preparation Rumalaya, and there was some evidence that Shunti-Guduchi was comparable to glucosamine; several other preparations showed positive effects in single trials.[3] For non-pharmacological interventions such as Ayurvedic massage, steam therapy and enema, the review found no evidence of significant effects against potential methodological bias, and no severe adverse events were observed in the included trials.[3] The review emphasised that well-planned, well-conducted and well-published trials were warranted.[3]

3. Oral Formulations and Safety

In a randomized, double-blind, four-arm equivalence trial lasting 24 weeks, 440 patients with symptomatic knee OA received two standardised Ayurvedic formulations, glucosamine sulphate or celecoxib.[4] Differences between arms in the primary efficacy variables remained within the pre-specified equivalence ranges, and the authors concluded that the Ayurvedic formulations were equivalent to glucosamine and celecoxib.[4] Twenty-six patients developed asymptomatic increases in SGPT, seven of whom (Ayurvedic arms) were withdrawn and recovered after stopping the drug, and the authors stated that this unexpected finding required further safety assessment.[4] The trial concerned oral formulations and therefore illustrates the need for liver safety monitoring in studies of Ayurvedic interventions generally.

4. Leech Therapy and Basti-based Regimens

In a randomized trial of 51 patients with knee OA, a single application of four to six leeches reduced pain at day 7 from 53.5 to 19.3, compared with a reduction from 51.5 to 42.4 after 28 days of topical diclofenac; function, stiffness and total symptom scores remained in favour of leech therapy until the end of the study.[5] This is the strongest randomized evidence found for a Raktamokshana-type procedure in knee OA, although the trial was small.

A trial protocol from India describes an open-label randomized trial in 150 participants aged 40-70 years, comparing a multimodal Ayurveda regimen with standard care for 180 days, with WOMAC as the primary outcome and with secondary outcomes including pain, range of motion, inflammatory markers, imaging and safety laboratory parameters.[6] According to its keywords, the regimen includes Matra Basti and Janu Basti.[6] Results are awaited and will help clarify the role of Basti-based regimens in knee OA.

DISCUSSION:

The randomized literature reviewed supports the view that some Ayurvedic interventions can reduce symptoms of knee OA, but caveats are important. First, the strongest evidence concerns multimodal care in a Western setting and oral formulations rather than classical Panchakarma.[1,3,4] Second, open-label designs and subjective outcomes are vulnerable to bias, which the systematic review specifically considered.[3] Third, safety reporting should include liver function, given the SGPT findings.[4]

Future trials of Panchakarma-based regimens should describe each procedure precisely, include appropriate comparators such as standard care or exercise, use patient-reported and objective outcomes (including imaging and inflammatory markers as planned in the Indian trial), and report adverse events systematically.[6] Limitations of this review include its narrative design and single-database search.

CONCLUSION:

Randomized trials suggest that Ayurvedic treatment is beneficial in knee OA, with the strongest signals for multimodal care, certain oral formulations and leech therapy. Direct evidence for classical Panchakarma procedures such as Basti is still awaited from ongoing trials, and the safety of oral formulations should be monitored.

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