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The impact of mud therapy on chronic low back pain

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Abstract

Chronic low back pain (CLBP) remains one of the most prevalent and disabling musculoskeletal conditions affecting millions globally. Conventional pharmacological interventions often provide temporary relief and are associated with potential side effects, including gastrointestinal complications, dependency, and tolerance. Ayurveda, an ancient Indian system of medicine, emphasizes holistic approaches that address the root cause of diseases through natural means. Among these, Mud Therapy (Mrid Lepa Chikitsa) is a significant intervention for managing musculoskeletal disorders like CLBP. This article presents a critical review of mud therapy, its mechanisms, procedure, clinical efficacy, and supporting data to establish its role as an effective, complementary approach for managing chronic low back pain.

Keywords: Chronic low back pain, Ayurveda, mud therapy, MRID Lepa, Panchabhautik Chikitsa, vata Vyadhi, pain management, holistic healing

Introduction

Chronic low back pain (CLBP), typically defined as pain persisting for more than 12 weeks, is one of the most prevalent musculoskeletal conditions worldwide. It affects approximately 23% of the global adult population at any given time, with a lifetime prevalence estimated to be between 60% and 70%. CLBP not only impairs physical functioning but also contributes significantly to the reduction of work productivity, increased absenteeism, and an overall deterioration in quality of life. The social and economic burden of chronic low back pain is substantial, as it frequently leads to long-term disability, loss of earnings, and higher healthcare costs. The underlying causes of CLBP are multifactorial, often involving a combination of structural, biomechanical, and psychosocial factors. Common etiologies include degenerative disc disease, lumbar spondylosis, intervertebral disc herniation, postural abnormalities, muscular imbalances, and sedentary lifestyle habits. These causative factors frequently result in chronic inflammation, muscular spasms, nerve impingement, and restricted mobility, perpetuating a cycle of pain and disability. According to Ayurvedic principles, CLBP is closely associated with the vitiation of Vata dosha, the biological energy responsible for movement and nervous system regulation. Aggravation of Vata can lead to tissue degeneration (dhatu kshaya), dryness, stiffness, and pain, particularly in the asthi dhatu (bone tissue) and majja dhatu (marrow and nervous tissue). The modern medical approach to CLBP management typically includes pharmacological interventions such as non-steroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, analgesics, corticosteroid injections, and, in some cases, surgical interventions like discectomy, spinal fusion, or laminectomy. Physiotherapy modalities, including exercises for core strengthening, postural correction, and transcutaneous electrical nerve stimulation (TENS), are also widely employed. While these treatments offer symptomatic relief, they often fail to address the underlying pathophysiological imbalances or provide sustainable outcomes. Furthermore, long-term use of NSAIDs and other analgesics is associated with adverse effects, including gastrointestinal disturbances, renal impairment, and cardiovascular risks. Surgical interventions carry their own risks and do not guarantee permanent relief. In this context, there is a growing interest in complementary and alternative medicine (CAM) modalities that focus on holistic and integrative approaches to CLBP management. Ayurveda, the ancient Indian system of medicine, offers time-tested therapeutic strategies aimed at restoring doshic balance, nourishing degenerated tissues, and improving overall vitality.

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Ayurvedic treatments for CLBP emphasize Vata pacification through Snehana (oleation), Swedana (sudation), Basti (medicated enema), and other external therapies like Kati Basti and Abhyanga. Kati Basti is a localized form of Snehana-Swedana therapy that involves retaining warm medicated oil over the lower back region within a ring made of dough. This procedure provides deep tissue oleation, alleviates Vata-induced pain, reduces muscle stiffness, and enhances circulation in the affected area. The warmth and medicinal properties of the oil penetrate the deeper tissues, promoting lubrication of the joints, nourishment of the intervertebral discs, and relaxation of the paraspinal muscles. Kati Basti is traditionally indicated for conditions such as lumbar spondylosis, degenerative disc disease, sciatica, and chronic musculoskeletal pain syndromes. Mud therapy, recognized in naturopathy and under the concept of Panchabhautik Chikitsa in Ayurveda, utilizes the therapeutic properties of mud to detoxify, soothe, and heal the affected tissues. Mud is considered to embody the Prithvi (earth) and Jala (water) Mahabhutas, and its cool, heavy, and absorbent qualities make it effective in balancing Vata and Pitta doshas. The application of therapeutic mud packs over the lumbar region helps to reduce localized inflammation, improve circulation, relieve muscular tension, and absorb accumulated toxins. Mud therapy is also believed to have a grounding effect on the body and mind, reducing psychological stress, which is often a contributing factor in chronic pain conditions. Modern scientific studies have corroborated the effectiveness of mud therapy in the management of various musculoskeletal disorders, including osteoarthritis, rheumatoid arthritis, and chronic low back pain. Clinical trials have demonstrated significant reductions in pain intensity, improvements in functional status, and enhanced quality of life following mud therapy interventions. Abhyanga, the therapeutic oil massage in Ayurveda, forms an integral part of the holistic approach to CLBP. It involves the systematic application of warm medicated oils over the body, followed by gentle and rhythmic massage techniques. Abhyanga helps in the relaxation of tense muscles, enhancement of blood and lymphatic circulation, nourishment of tissues, and alleviation of Vata dosha. The oils used in Abhyanga are often infused with herbs that possess anti-inflammatory, analgesic, and rejuvenating properties. Regular Abhyanga therapy improves spinal flexibility, reduces muscle spasms, and promotes overall well-being. Furthermore, the calming and soothing effects of Abhyanga extend beyond the physical body, helping to reduce stress and anxiety, which are often associated with chronic pain syndromes. Integrating Kati Basti, Mud Therapy, and Abhyanga offers a comprehensive and synergistic approach to the management of CLBP. While Kati Basti and Abhyanga focus on nourishing, strengthening, and lubricating the spine and paraspinal tissues, Mud Therapy provides a cooling and detoxifying effect. Together, these therapies address the multifactorial etiology of CLBP by alleviating pain, reducing inflammation, improving mobility, and correcting Vata

imbalances. Unlike conventional treatments that focus primarily on symptomatic relief, these integrative therapies work on restoring the structural and functional integrity of the lumbar spine while promoting holistic health. This paper aims to explore the integrative application of Kati Basti, Mud Therapy, and Abhyanga in the management of Chronic Low Back Pain. It discusses their traditional theoretical foundations, therapeutic mechanisms, methods of administration, clinical outcomes, and the potential role of these therapies as complementary treatments in modern pain management strategies. In an era where there is an increased demand for non-pharmacological and non-invasive treatment options, these ancient therapeutic modalities offer promising alternatives that are safe, effective, and holistic.

The Ayurvedic Perspective on Chronic Low Back Pain

According to Ayurveda, CLBP is classified under Kati Shoola or Gridhrasi when associated with radiating pain. The condition is predominantly Vata Vyadhi, resulting from the vitiation of Vata dosha that governs all movements in the body, including nerve conduction and joint articulation.

Pathogenesis (Samprapti)

- 1. Nidana (Etiological Factors):** Improper posture, excessive travel, prolonged sitting, emotional stress, and aging.
- 2. Dosha Involvement:** Primarily Vata, with possible secondary involvement of Kapha (causing stiffness) or Pitta (causing inflammation).
- 3. Dushya (Affected Tissues):** Asthi (bone), Majja (bone marrow), and Snayu (ligaments).
- 4. Adhithana (Location):** Kati Pradesh (lumbar region).

Mud therapy helps pacify aggravated Vata dosha, detoxify tissues, and promote rejuvenation of affected structures.

Concept and Mechanism of Mud Therapy (Mrid Lepa Chikitsa)

Properties of Therapeutic Mud

- **Shita Virya (Cooling potency):** Alleviates inflammation.
- **Vishada Guna (Absorptive nature):** Absorbs toxins and metabolic wastes.
- **Mridu and Snigdha (Soft and unctuous nature):** Soothes and nourishes tissues.

Mechanism of Action

- 1. Anti-inflammatory Action:** Reduces swelling by constricting blood vessels, limiting inflammatory exudate accumulation.
- 2. Analgesic Effect:** Provides localized cooling that reduces nerve sensitivity.
- 3. Detoxification:** Binds and absorbs impurities and toxins from skin and tissues.
- 4. Improved Circulation:** Alternating hot-cold applications improve microcirculation and lymphatic drainage.

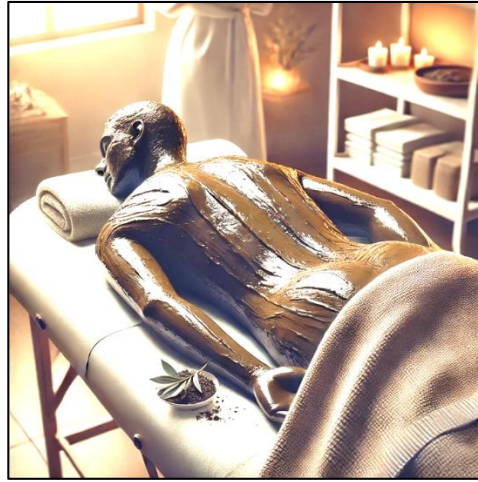


Diagram 1: Mud Therapy Application on Lower Back

Types of Mud and Their Applications

Table 1: Different Types of Mud Used in Ayurvedic Mud Therapy

Type of Mud	Properties	Uses
Black Mud	Rich in humic acid and minerals	Anti-inflammatory, detoxification
Moor Mud	Peat-based, high organic content	Joint stiffness, chronic pain
Clay Mud	Silica-rich, fine particulate	Skin disorders, localized pain relief

Procedure of Mud Therapy for Chronic Low Back Pain

1. **Patient Assessment:** Identification of prakriti (constitution), vikriti (dosha imbalance), and chronicity of condition.
2. **Preparation of Mud:** Sterilization, sieving to remove debris, mixing with lukewarm water for homogenous consistency.
3. **Application**
 - **Thickness:** 1.5 to 2 cm
 - **Area:** Lumbosacral region covering 5-7 cm above and below the painful site.
 - **Duration:** 30 to 40 minutes (based on dosha involvement)
4. **Post-Therapy Care:** Gentle cleaning with lukewarm water followed by application of medicated oil such as Mahanarayana Taila.

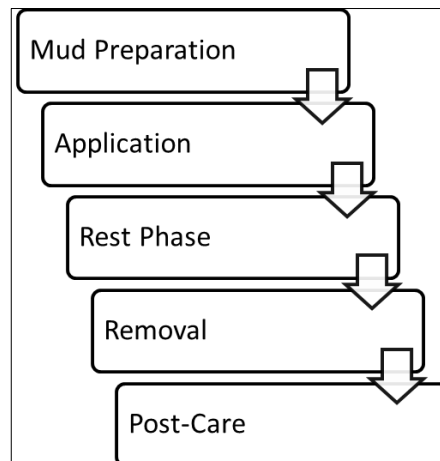


Diagram 2: Step-by-Step Mud Therapy Process

Clinical Evidence and Scientific Validation

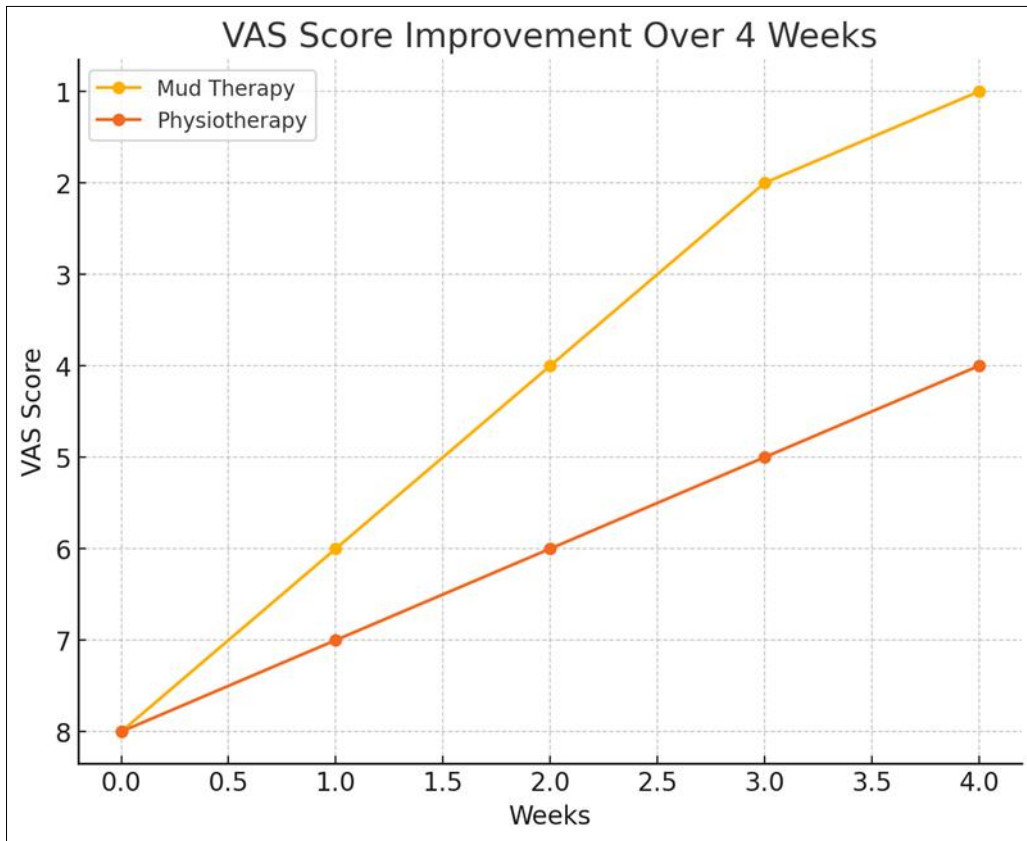
Study 1: Mud Therapy versus Conventional Physiotherapy

- **Sample Size:** 100 patients
- **Duration:** 4 weeks

- **Intervention:** Mud pack therapy (once daily for 30 minutes) versus conventional physiotherapy
- **Outcome Measures:** Visual Analog Scale (VAS), Oswestry Disability Index (ODI)

Table 2: Comparative Analysis of Mud Therapy and Physiotherapy in CLBP Patients

Parameter	Pre-Treatment Score	Post-Treatment Score (Mud Therapy)	Post-Treatment Score (Physiotherapy)
VAS	7.2±1.1	3.1±0.8	4.5±1.0
ODI	42%	19%	26%



Graph 1: VAS Score Improvement Over 4 Weeks

Study 2: Combined Ayurvedic Panchakarma with Mud Therapy

- **Patients:** 60 diagnosed cases of chronic low back pain

- **Procedure:** Mrid Lepa with **Kati Basti** and **Abhyanga** for 14 days

- **Findings:** 85% patients reported significant pain relief and improved mobility.

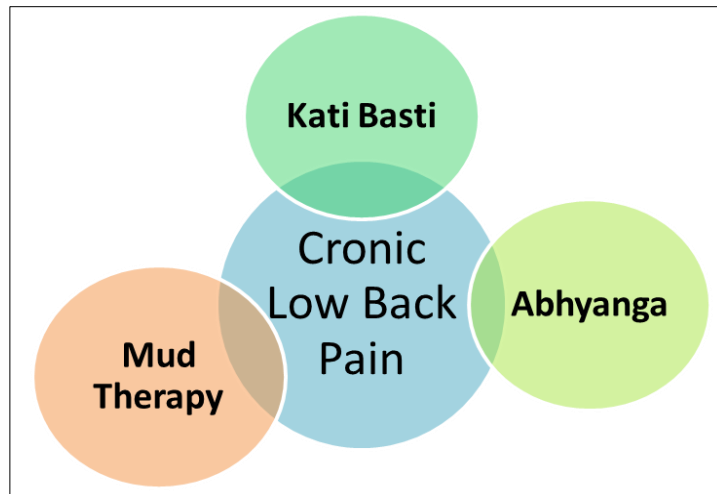


Diagram 3: Integrative Approach to CLBP (Kati Basti + Mud Therapy + Abhyanga)

Critical Analysis

Advantages

- **Non-invasive and Safe:** Minimal to no side effects compared to NSAIDs and corticosteroids.
- **Cost-effective:** Easily available material, making it economical for long-term use.
- **Holistic Relief:** Addresses root cause by balancing doshas rather than symptomatic relief.
- **Enhanced Detoxification:** Synergistic effects when

combined with Panchakarma.

Limitations

- **Patient Compliance:** Requires multiple sessions, which may be time-consuming.
- **Hygiene Maintenance:** Mud must be thoroughly purified to avoid infections.
- **Contraindications:** Not suitable for patients with skin diseases, infections, or cold intolerance.

Conclusion

Mud therapy is an ancient yet scientifically validated intervention for managing chronic low back pain. By pacifying aggravated Vata, reducing inflammation, and promoting detoxification, mud therapy offers a natural, cost-effective alternative to conventional treatments. When integrated with Panchakarma procedures like Kati Basti and Abhyanga, it provides holistic relief and improves the patient's quality of life. Future large-scale studies and standardized protocols will further strengthen its role in integrative pain management.

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