



Review Article

SYNERGISTIC EFFICACY OF *KATI BASTI* AND PHYSIOTHERAPEUTIC TRACTION IN LUMBOSACRAL PAIN VIA CONCURRENT APPLICATION: A NOVEL CLINICAL INSIGHT

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ABSTRACT

Lumbosacral pain (*Katigraha*) is a major contributor to global disability and healthcare burden. It often hampers daily functioning and quality of life. Despite the wide availability of modern treatments, chronic low back pain often requires a multimodal approach. In Ayurveda, *Kati Basti* is a localized therapy using warm medicated oil that provides analgesic, anti-inflammatory, and *Vata*-pacifying effects. Physiotherapeutic lumbar traction, a standard modern treatment, offers mechanical decompression to reduce nerve root irritation and improve spinal alignment. This review article explores the theoretical and practical basis of combining these two therapeutic systems and highlights clinical evidence supporting their integrative use, examining their mechanisms of action and therapeutic synergy in managing lumbosacral pain. The synergy of Ayurvedic and physiotherapeutic principles may offer enhanced pain relief, functional recovery, and reduced dependency on pharmacological or invasive interventions.

INTRODUCTION

Lumbosacral pain, commonly referred to as low back pain (LBP), affects up to 80% of individuals at some point in their life. It is the leading cause of disability worldwide, affecting both young and elderly populations [1]. It stems from various etiologies, including muscular strain, intervertebral disc degeneration, or lumbar spondylosis [1]. The majority of cases are categorized as nonspecific or chronic low back pain. Conventional treatments include NSAIDs, muscle relaxants, physiotherapy, and sometimes surgery. However, due to side effects and limitations of long-term medication, many patients and clinicians are seeking integrative and holistic approaches. Ayurveda, the traditional system of Indian medicine, offers several therapies for low back pain, notably *Kati Basti* [2,3]. Integrating traditional and modern approaches has shown promising outcomes in musculoskeletal care.

Kati Basti, a localized Ayurvedic therapy that utilizes warm, medicated oils, and traction therapy, a biomechanical method employed in physiotherapy, can be effectively combined for improved pain management and functional restoration [3,4].

Understanding Lumbosacral Pain: A Dual Perspective

Modern Medicine Perspective


Lumbosacral pain may arise due to lumbar disc herniation, muscle spasm or ligament strain, facet joint dysfunction and degenerative disc disease [5]. Treatment Goals in modern medicine include pain relief, functional improvement and prevention of recurrence [6].

Ayurvedic Perspective

In Ayurveda, low back pain corresponds to conditions like *Katigraha* – localized stiffness and pain in the *Kati pradesha* (lumbo-sacral region), *Gridhrasi* (sciatica). These are primarily *Vata*-dominant disorders, with symptoms like pain, dryness, stiffness, and restricted movement [2,7].

***Kati Basti*: The Ayurvedic Therapy Procedure**

Kati Basti, a specialized Ayurvedic therapy is a type of *Snigdha Sweda* therapy used for treating

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lumbosacral (lower back) pain. It involves localized retention of warm medicated oil over the lumbosacral area (*Kati Pradesh*) within a dough ring made of black gram dough for 30-45 minutes, depending on the severity and chronicity of the condition. Oils like *Sahacharadi Taila*, *Mahavishgarbh taila*, *Moorveena taila*, *Ksheerabala Taila*, *Dhanwantaram Taila*, *Mahanarayana Taila*, *Kottamchukkadi Taila* etc. are commonly used. *Kati Basti* is followed by gentle massage or *Swedana* (fomentation) [3,8]. Here's a detailed explanation of its mode of action:

Mechanism of Action [Table 1]

1. Snehana (Oleation) Effect

Oleation (*Snehana*) softens tissues and reduces *Vata*-induced dryness. The warm medicated oil penetrates the skin and deeper tissues. It softens and lubricates the muscles, ligaments, and tendons, relieving stiffness and enhancing flexibility [9].

2. Swedana (Sudation) Effect

Heat therapy (*Swedana*) improves blood flow and reduces stiffness. Penetration of herbs provides anti-inflammatory, muscle-relaxant effects. It also calms the nervous system and relaxes local musculature. The heat of the oil induces mild sweating, which removes *Avarana* (obstructions) of *Vata*, cause Local

vasodilation increases blood flow to affected tissues, reduces inflammation and relieves pain [9]. And relaxes the musculature of the lumbosacral spine.

3. Vata-pacifying Action:

As per Ayurveda, the lumbosacral pain is mostly due to *Vata* vitiation (*Apana Vata*), warm oil used in *Kati Basti* directly pacifies localized *Vata dosha*. It restores the normal flow of *Vata*, thereby reducing symptoms like pain, tingling, or stiffness [9].

4. Nerve Nourishment and Healing

The oils used are enriched with herbal extracts that have neuroprotective and analgesic properties. These herbs nourish intervertebral discs, spinal nerves, and help heal degenerated tissues in conditions like Lumbar spondylosis, Sciatica, Intervertebral disc prolapse (IVDP) and Lumbago.

5. Musculoskeletal Relaxation

Warmth and medicated oil help in relieving muscle spasms, tension, and trigger points. Improves range of motion and functional recovery in chronic cases.

6. Psychosomatic Relief

The soothing nature of warm oil promotes mental relaxation, reducing stress-related muscle tension and improving sleep quality.

Table 1: Mechanism of Action of Kati Basti

S.No.	Therapeutic Action	Physiological Effect
1.	<i>Snehana</i>	Lubricates joints, improves flexibility
2.	<i>Swedana</i>	Increases circulation, reduces stiffness
3.	<i>Vata Shamana</i>	Relieves pain, corrects Vata imbalance
4.	Nerve nourishment	Heals nerves and connective tissues
5.	Muscle relaxation	Eases spasms and tension
6.	Psychological calming	Reduces stress, promotes well-being

Clinical Evidence

Several clinical studies have shown *Kati Basti* is effective in *Katigraha*, *Gridhrasi*, and low back pain, often reducing VAS and Oswestry scores significantly [3].

Physiotherapeutic Lumbar Traction

Traction therapy involves the application of a mechanical or manual force to decompress spinal structures. It can be manual traction or mechanical (sustained or intermittent) traction [4,6].

Traction in Lumbosacral Pain - Mode of Action [Table 2]

Lumbar traction is used to relieve compression in the lumbar spine. It is commonly used in the management of lumbar spondylosis, disc herniation, sciatica, and chronic low back pain. Spinal traction stretches spinal muscles and ligaments. It increases disc space, reducing pressure on nerve roots. Thereby improves

mobility and alignment of spinal segments [6,10]. It's mode of action can be summarized as-

1. Decompression of Intervertebral Discs- Traction creates a pulling force along the axis of the spine, which reduces pressure on intervertebral discs, helps retract or reduce herniated disc material and alleviates compression on nerve roots (like in sciatica).

2. Widening of Intervertebral Foramen- Traction increases the intervertebral space. This reduces nerve impingement and eases radicular pain, numbness, or tingling radiating down the legs.

3. Reduction of Muscle Spasm - The gentle stretching helps to relax paraspinal muscles, reduce muscle guarding and tension and break the pain-spasm-pain cycle.

4. Improvement in Blood Circulation - By reducing pressure and stretching soft tissues it improves local

blood flow, enhances delivery of oxygen and nutrients to affected tissues and accelerates healing and waste removal from inflamed areas [10].

5. Realignment of Spinal Structures - In some cases, traction can help in minor repositioning of vertebrae releasing facet joint fixations and improving posture and alignment.

6. Central Pain Modulation - Traction stimulates mechanoreceptors and inhibits nociceptors (pain receptors). This leads to neuromodulation of pain pathways and induces a relaxing effect on the central nervous system, contributing to pain relief.

Table 2: Mechanism of Action of Traction

S.No.	Therapeutic Action	Physiological Effect
1.	Disc decompression	Reduces nerve root compression Reduces intradiscal pressure and herniation.
2.	Foramen widening	Relieves radiculopathy/sciatica
3.	Muscle stretching	Reduces spasm and stiffness. Relieves paraspinal muscle tightness and improves range of motion.
4.	Neurological relief	Alleviates nerve root compression, reducing radicular pain.
5.	Enhanced circulation	Promotes healing
6.	Spinal alignment	Improves biomechanics and posture
7.	Pain modulation	Lowers pain perception

Limitations

Physiotherapeutic lumbar traction may not offer lasting results as a standalone therapy. Passive modality is it lacks tissue nourishment or deep healing

Rationale for Combined Use

Combining *Kati Basti* and physiotherapeutic traction in common sitting provides both Mechanical relief by traction and tissue nourishment, anti-inflammatory effects, and Vata pacification through *Kati Basti* [11,12].

Treatment Methodology [Figure 1]

Traction

A) Positioning (*Makarasana* or Crocodile pose)

- Shift the patient to the physiotherapy table in the prone position.
- Arms bent with hands placed one over the other under the forehead, or chin.
- Legs extended and straight, the body should be in a relaxed position.

B) Traction

- Use lumbar/ pelvic traction belt wrapped around hips to hold the spine, traction is given according to weight of patient, attach the traction rope to D-ring or loop.
- Connecting to the traction machine with traction rope or cable
- Check alignment to ensure straight pull along the body axis.
- Set the traction machine force, hold and rest time.

Kati Basti

- Now along with traction expose lumbar region (lower back).

- Dough ring (*lepa*) made up from black gram flour (*urad dal*) shaped in leaked proof circular wall about 4 to 5 inches in diameter or use plastic *Kati basti* ring leaked proof with black gram flour (*urad dal*).
- Oil up to 500 to 600 ml used in *Kati basti*, may be *Mahalarayan tail*, *Dhanwantar tail*, *Prasarni tail*, *Sahcharadi tail*, *Mahamasha tail* or *Mahavishgarbh tail* single or mixed combination can be use.
- Oil temperature should be maintained from 38°C to 40°C ensure patient to be comfortable with temperature.

Start traction with Kati Basti

- Start traction machine as format earlier. Intermittent traction is given, use force up to 1/3rd of body weight for traction, rest time up to 5 sec. and hold time up to 20 sec.
- Traction time may be from 15 to 20 min. according to patient.
- Retain *Kati Basti* 35 to 55 min. with continuous maintain temperature of oil by the therapist.

Stop Traction

- As per protocol after 15 to 20 min, stop giving traction.

Removal of Kati Basti

- Poured out oil from *Kati Basti* with help of absorbent pads, remove *Kati Basti* ring, apply a hot towel compress or mild *Sweden* (fomentation) to remove stickiness and stiffness.



Figure 1: Simultaneous Therapy with Traction and Kati Basti

Benefits

Traction targets structural decompression. Soft tissues get relaxed. Enhanced effect of *Kati basti* by enhancing pliability, increasing circulation, and reducing stiffness [13]. Simultaneous Use of Traction and *Kati Basti* can Improve patient compliance due to rapid symptomatic relief. It can enhance disc hydration

post-oil therapy thereby improving traction efficiency. Pain reduction will be faster because of dual neuromuscular and mechanical action. *Kati Basti* along with traction will also reduce side effects of traction such as post-therapy soreness.

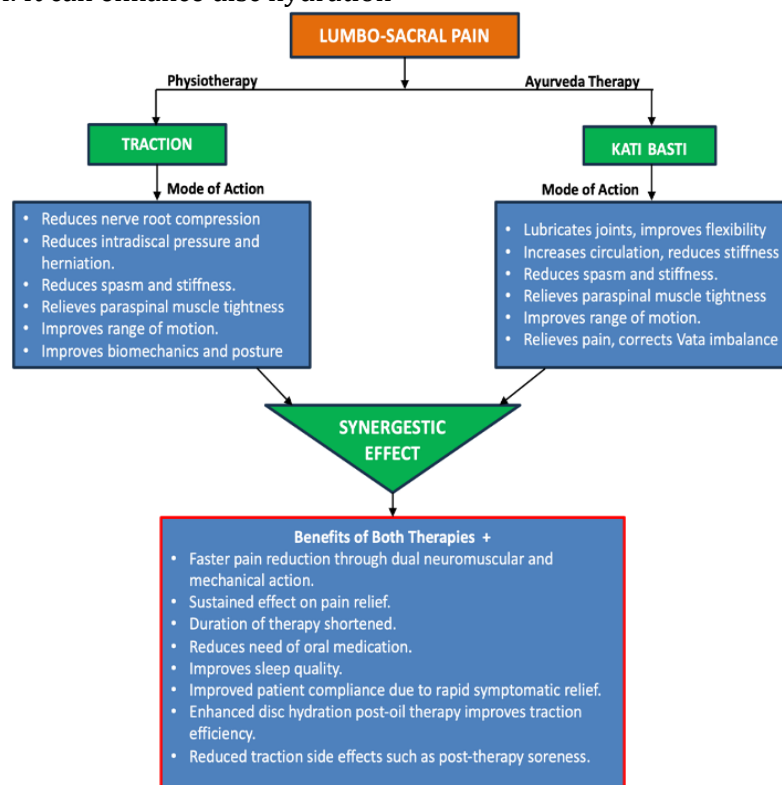


Figure 2: Synergistic Mechanism of Combined Therapy

Indication and Contraindications

The simultaneous therapy can be indicated in lumbar spondylosis, prolapsed intervertebral disc (PIVD), lumbar strain and spasms and sciatica (*Gridharisi*). Contraindications on the therapy include active infection, severe osteoporosis, malignancy and recent spinal surgery

Safety and Tolerability

Both *Kati Basti* and traction are non-invasive therapies and generally safe when performed in expert

supervision. Contraindications are spinal instability, infections, open wounds, pregnancy etc. Mild skin irritation may occur with *Basti* if oil temperature is not controlled or patient allergic with some ingredients of the oil. Skin test should be done prior to the therapy

DISCUSSION

The integrative use of *Kati Basti* and physiotherapeutic traction represents a promising non-pharmacological approach in managing lumbosacral pain[14]. The thermal, pharmacological,

and mechanical synergy achieved through this combination can offer a more holistic and effective treatment strategy. [Figure 2] This cannot only reduce pain intensity but can also improve functional mobility. Studies have shown both treatments independently improve outcomes like Visual Analog Scale (VAS) for pain and Oswestry Disability Index (ODI) for function. A few clinical studies and post-graduate dissertations in India suggest that the combination of *Kati Basti* and traction on separate sittings provides faster and sustained relief as compared to either therapy alone. A comparative clinical trial by Patel et al., 2018 on 60 patients showed that a combined group (*Kati Basti* and traction) reported significantly higher improvement in VAS (Visual Analogue Scale) and ODI (Oswestry Disability Index) scores compared to single modality [15]. Sharma & Bhalerao, 2020 has also reported that simultaneous administration of Ayurvedic and physiotherapeutic interventions led to quicker mobility recovery and lesser recurrence within 3 months [16]. There is no single study reported on the simultaneous use of the two therapies. However, high-quality multicentric clinical trials and more evidence is needed to establish protocol standardization.

Future Scope

As chronic low back pain continues to burden populations globally, such integrative therapies should be explored further in research and clinical practice. Randomized clinical trials with larger sample sizes should be done. Objective imaging (MRI) should be done before and after treatment to assess structural changes. This can open door to a cost-effective novel approach in the management of Lumbosacral Pain.

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