

# Research Progress on Comprehensive Traditional Chinese Medicine Therapy for Lumbar Disc Herniation in the Past Decade

Yunqing Zhang, Xuefeng Cai, Xiaofeng Shen\*

Suzhou Hospital of TCM Affiliated to Nanjing University of Chinese Medicine, Suzhou 215003, Jiangsu, China

\*Correspondence Author

**Abstract:** *In recent years, with the acceleration of the pace of life, poor lifestyle habits have led to a gradual increase in the incidence of lumbar disc herniation (LDH), with a trend towards younger age groups, resulting in a significant social burden. However, conservative treatments face challenges such as considerable individual variability in efficacy and the need for repeated medical visits, which can lead to poor patient compliance. Traditional Chinese medicine (TCM) offers a variety of external therapies for LDH, including acupuncture, tuina (therapeutic massage), herbal plasters, fumigation, moxibustion, and their combinations. These therapies collectively contribute to reducing inflammatory factor levels, alleviating tissue adhesions, improving lumbar function, decreasing lumbar fibrosis, enhancing neuroelectrophysiological function, and lowering recurrence rates. In clinical practice, multiple TCM therapies are often combined to address both the symptoms and root causes of the disease. Through literature review, this paper summarizes the research progress on comprehensive TCM therapies for LDH over the past decade, aiming to provide references for current TCM treatment methods and research mechanisms related to LDH.*

**Keywords:** Lumbar Disc Herniation, Comprehensive TCM Therapies, Clinical Research, Mechanism of Action, Review.

## 1. Introduction

Lumbar disc herniation (LDH) is a clinically common degenerative disc syndrome, primarily characterized by symptoms arising from the herniation of the nucleus pulposus through a ruptured annulus fibrosus, which damages spinal nerve roots or the cauda equina. This leads to lower back and leg pain, intermittent claudication, and lower limb numbness, with physical examinations such as the straight leg raise test and the Braggard's test typically yielding positive results [1]. Studies suggest the domestic prevalence of this disease can reach 6%, with a higher incidence in middle-aged and elderly populations, and its prevalence gradually increases with age [2]. Current Western medical clinical treatments for LDH include conservative therapy and surgery. Surgical intervention is highly invasive, technically challenging, prone to recurrence, and often has poor patient acceptance. Sole conservative treatment, involving anti-inflammatory analgesics, neurotrophic agents, traction, and physiotherapy, often yields suboptimal results. Traditional Chinese Medicine (TCM) has a long history of exploring this condition domestically, and methods such as tuina (therapeutic massage), acupuncture, herbal medicine, and herbal patching have all been proven effective for treating LDH. This paper summarizes relevant literature from the past decade on comprehensive TCM therapies for LDH. By reviewing various combined therapies for LDH, it aims to provide multi-dimensional evidence for the efficacy of TCM in treating LDH, offering a basis for enhancing clinical effectiveness and advancing research standards.

## 2. TCM Etiology and Pathogenesis

LDH is commonly seen in clinical practice, though no precise record of this disease name exists in ancient TCM texts. Based on its clinical manifestations and symptomatic signs, it can be categorized under "lower back pain" or "impediment

syndrome" [3]. The core pathogenesis of this disease lies in "deficiency in origin and excess in manifestation", meaning that internal depletion of liver and kidney essence-blood serves as the foundation of the disease, while external contraction of wind-cold-dampness pathogens, trauma, overstrain, or obstruction by phlegm and stasis are key triggering factors. The liver governs tendons and the kidneys govern bones; insufficiency of the liver and kidneys leads to malnourishment of tendons and bones, resulting in spinal instability. In addition, invasion of wind-cold-dampness into the channels and collaterals, or qi stagnation and blood stasis due to strain, causes impeded flow of qi and blood — obstruction then produces pain. The progression of pathogenesis presents a dynamic process: the early stage is mostly dominated by pathogenic excess, while prolonged illness consumes qi and blood, transforming into a mixed deficiency-excess pattern that may even involve the extraordinary vessels, leading to a persistent, lingering condition. Treatment should be staged: the initial phase focuses on dispelling pathogens and unblocking the collaterals, whereas chronic cases require supplementing the liver and kidneys, resolving phlegm, and dispelling stasis, so as to address both the root and the branch.

## 3. Research Status of Comprehensive Traditional Chinese Medicine Therapies

### 3.1 Acupuncture Combined with Moxibustion Therapy

Acupuncture therapy serves as an important complementary and alternative treatment for various diseases, with LDH being one of the conditions well-suited for acupuncture treatment. Its application is based on TCM theory, with point selection determined according to the disease stage and affected meridians. Moxibustion therapy is an external treatment that involves burning moxa wool to generate a warming effect, acting directly or indirectly on specific

acupoints or body areas to warm and unblock the meridians, dispel cold and dampness, promote qi and blood circulation, and support yang to secure collapse, thereby achieving disease prevention and treatment. In a clinical study, Du Jiali [4] applied fire-dragon moxibustion combined with acupuncture to treat LDH. Main acupoints selected were Yaoyangguan (GV3), Mingmen (GV4), Taixi (KI3), and Shenshu (BL23), with Yanglingquan (GB34) as an adjuvant point, supplemented by additional points based on patient symptoms. Clinical observation and scale assessments revealed that the combined regimen effectively regulated serum factor levels in patients with cold-dampness pattern LDH and significantly improved their quality of life and biological indicators. In another clinical study, Wang Nan [5] used calabash moxibustion combined with acupuncture to treat LDH of the qi stagnation and blood stasis pattern. Selected acupoints included Shenshu (BL23), Dachangshu (BL25), and Ashi points, among others. Comparison of clinical efficacy showed that, compared to warm needle acupuncture, calabash moxibustion combined with acupuncture for LDH reduced the number of treatment sessions required and yielded more pronounced therapeutic effects. Thus, the combination of acupuncture, which stimulates qi and blood flow, and moxibustion, which warms and unblocks the meridians, can significantly enhance efficacy in the treatment of LDH characterized by qi stagnation and blood stasis.

### 3.2 Herbal Medicine Combined with Acupuncture Therapy

Herbal treatment, primarily utilizing decoctions and pills, constitutes a major therapeutic approach in Traditional Chinese Medicine. Through pattern differentiation and treatment based on a holistic perspective, it addresses both the root cause and symptoms. When combined with acupuncture, which regulates meridians and qi-blood, it achieves therapeutic goals. Hou Yuke [6] conducted a clinical efficacy observation of acupuncture combined with herbal decoction for LDH. Selected acupoints included lumbar Jiaji points, Shenshu (BL23), Zhibian (BL54), Huantiao (GB30), and Ciliao (BL32). The herbal formula employed medicinals for tonifying the liver and kidneys, activating blood circulation, and dispelling stasis. Comparisons of clinical efficacy, Visual Analogue Scale (VAS), and Japanese Orthopaedic Association (JOA) scores demonstrated that the combination of acupuncture and herbs integrates the dual advantages of internal and external TCM treatments, achieving a perfect union of holistic regulation and local therapy. It provided significant relief of pain symptoms and effectively improved patients' joint mobility. Hu Wei [7] applied red-hot needling (fanzhen jieci) combined with Sanhan Tongbi Decoction to treat LDH of the cold-dampness obstruction pattern and conducted a clinical study. Acupuncture points were selected based on patients' varying clinical symptoms and nerve compression points, focusing on myofascial trigger points. The herbal formula used warming-yang, blood-activating, dampness-removing, and collateral-dredging medicinals. Comprehensive evaluation through low back pain scores, lumbar function, back muscle strength, and laboratory indicators revealed that the combined acupuncture-herbal treatment yielded superior therapeutic efficacy and improvement in indicators compared to herbal treatment

alone.

### 3.3 Herbal Medicine Combined with Tuina Therapy

Tuina therapy is a physical treatment guided by TCM theory, applying manual techniques to specific body areas or acupoints to achieve therapeutic aims such as dredging meridians, promoting qi and blood circulation, regulating sinews and restoring alignment, and adjusting visceral functions. Liu Yadong [8] treated lumbar disc herniation patients with Yaobi Shu Decoction combined with TCM tuina therapy. The tuina techniques included rolling manipulation combined with thumb pressing, plucking, and hollow-fist percussion. Comparison and statistical analysis of clinical efficacy, lumbar joint mobility, pain levels before and after treatment, lumbar function, and serum factor levels between the control and observation groups showed that post-treatment LDH and CK levels in the observation group were lower than those in the control group, indicating that Yaobi Shu Decoction combined with tuina therapy can alleviate pain and promote the recovery of lumbar muscle function. In a clinical observation, Chen Dongjun [9] applied external herbal application combined with TCM orthopedic tuina to treat lumbar disc herniation, observing its effects on symptoms, signs, and pain levels in LDH patients. The herbal treatment involved external application of medicinals for activating blood circulation, dispelling stasis, and unblocking collaterals. The tuina method employed different postures for rolling, pushing, and rotation-repositioning manipulations. Based on the clinical efficacy, improvement in lumbar function, and degree of low back and leg pain in the two patient groups, it was concluded that the observation group showed significantly better results than the control group in terms of total clinical effective rate, JOA score, VAS score, ODI score, and clinical symptoms. In summary, the combination of herbal medicine and tuina techniques can regulate yin and yang internally and regulate the skin, flesh, sinews, and bones externally, addressing both the root and the branch to exert a comprehensive therapeutic effect.

### 3.4 Herbal Medicine Combined with Acupoint Application Therapy

Acupoint application therapy is a TCM external treatment that involves applying herbal preparations to specific acupoints. It exerts a dual effect through continuous transdermal absorption of the medicinals and stimulation of the acupoints, aiming to dredge meridians, regulate qi and blood, and prevent or treat diseases. In a study on the application of TCM in treating LDH, Liu Zhiqun [10] employed herbal medicated stick therapy combined with acupoint application to treat and observe the efficacy in LDH patients. The control group received herbal medicated stick therapy, primarily using medicinals for activating blood circulation, dispelling stasis, and unblocking collaterals. The observation group, in addition to this, received acupoint application at points such as Yaoyangguan (GV3), Mingmen (GV4), Yanglingquan (GB34), Chengshan (BL57), and Ashi points. Data on lumbar function, pain levels, and patient satisfaction were collected and analyzed. Comparison of ODI and VAS scores led to the conclusion that the synergistic action of herbal medicated stick massage and acupoint application can directly target painful areas, promote blood circulation, improve the

metabolism and nutrient supply of local tissues, thereby further alleviating pain and promoting the improvement of lumbar function. In another study, Song Zepu [11] used Shentong Zhuyu Decoction combined with acupoint application to treat LDH. Selected acupoints included bilateral Dachangshu (BL25) and Shenshu (BL23), and the decoction was modified based on Shentong Zhuyu Decoction. Pairwise comparisons of the outcome groups revealed that clinical efficacy ranked as follows: combined treatment group > herbal decoction group > acupoint application group, which fully confirms the therapeutic advantage of the combined approach.

#### 4. Mechanism of Action of Comprehensive Traditional Chinese Medicine Therapies in Treating LDH

Modern research on the mechanisms of TCM in treating lumbar disc herniation has evolved into a scientific research system characterized by multiple targets and pathways. Regarding analgesia and anti-inflammatory effects, studies indicate that electroacupuncture can significantly reduce the level of the pro-inflammatory cytokine IL-6 and increase the content of the anti-inflammatory cytokine IL-10 in the serum and local tissues of model rats by modulating the NF- $\kappa$ B signaling pathway [12]. Moxibustion, on the other hand, can upregulate the expression of  $\beta$ -endorphin in the dorsal root ganglion while downregulating pain mediators such as Substance P and prostaglandin E2, exerting effects through both anti-inflammatory and analgesic pathways [13]. Addressing local microcirculation disorders and nerve root edema, fumigation with herbs for activating blood circulation and resolving stasis can correct the metabolic balance between thromboxane B2 and prostacyclin, improving the hemorheological state [14]. Meanwhile, tuina manipulations, particularly traction and stretching, can instantaneously increase intervertebral space and intervertebral foramen volume through biomechanical effects, altering the relative position between the herniation and the nerve root, thereby creating physical space for edema resolution [15]. Concerning the fundamental pathological link of nerve compression by the herniated disc, liver- and kidney-tonifying herbs, such as those in Tongdu Huoxue Decoction, can alleviate inflammatory damage to the lumbar nerve roots and soft tissues and promote the repair of damaged nerves and muscles/soft tissues [16]. Acupuncture may regulate cellular autophagy by activating the PI3K/Akt/mTOR pathway, reducing apoptosis of nucleus pulposus cells. In terms of restoring spinal mechanical balance [17], needle-knife therapy achieves precise release of high-tension points in pathological soft tissues, relieving muscle spasms and reducing intradiscal pressure. Its mechanisms involve mechanical release and reduction of aseptic inflammation [18]. Collectively, these studies demonstrate that TCM treatment for lumbar disc herniation is grounded in a scientific basis formed through the synergistic effects of multiple dimensions, including anti-inflammation and analgesia, improvement of circulation, delay of degeneration, and restoration of mechanical balance.

#### 5. Issues, Challenges and Future Prospects

Current clinical research on traditional Chinese medicine therapies for lumbar disc herniation commonly faces issues such as small sample sizes, short follow-up periods, difficulties in implementing blinding, and a lack of high-quality multicenter randomized controlled trials. Secondly, there is considerable variability in the combinations, dosages, and treatment courses of comprehensive therapy protocols, with unclear modifications of herbal formulas and a lack of optimized, standardized plans based on evidence-based medicine and expert consensus. In terms of efficacy evaluation in clinical observation, assessment indicators are not yet unified, and there is a shortage of internationally recognized outcome measures and evaluation standards that reflect the characteristics of traditional Chinese medicine. In experimental research, most mechanistic studies remain at the level of describing phenomena and detecting partial indicators, with insufficient exploration of holistic regulatory networks and key targets, as well as a lack of high-quality research using disease-syndrome combination animal models. In subsequent related studies, rigorously designed, large-sample, long-term follow-up pragmatic randomized controlled trials or real-world studies can be conducted. The exploration of personalized comprehensive treatment plans based on clinical subtypes/TCM syndrome types should be pursued. Multi-disciplinary methods such as omics technologies, molecular imaging, and biomechanics should be employed to systematically reveal the multi-target, multi-pathway action networks of comprehensive therapies. Research on the biomechanical and neurophysiological mechanisms of non-pharmacological therapies such as manual techniques and exercise therapies should be strengthened. The development and promotion of clinical practice guidelines or expert consensus based on high-level evidence are needed. Artificial intelligence and data mining technologies should be utilized to analyze and optimize the patterns of therapy combinations. Through more rigorous research design, deeper elucidation of mechanisms, and more standardized application of protocols, the clinical service capacity and scientific value can be further enhanced.

#### References

- [1] ZHOU Xin, ZHAO Xiong, CAO Ben, et al. Dynamic Characteristics of Patients with Lumbar Disc Herniation in Sitting and Standing Process [J]. *Journal of Medical Biomechanics*, 2024, 39(02):258-264.
- [2] XU Bo, HUANG Zeling, ZHANG Long, et al. Prevalence rate of lumbar disc herniation in the Chinese population: a meta-analysis [J]. *The Journal of Traditional Chinese Orthopedics and Traumatology*, 2023, 35(09):17-23.
- [3] Yue Peng; Zhou Changzheng. On the Prevention and Treatment of Lumbar Disc Herniation Based on the Theory of "Kidney Governing Bone" [J]. *Journal of Emergency in Traditional Chinese Medicine*, 2022, 31(07): 1193-1194+1198.
- [4] DU Jiali, LI Zhili, LI Feng. Clinical Study of Fire-Dragon Moxibustion Combined with Acupuncture in Treatment of LDH of Cold-Dampness Pattern [J]. *Journal of Clinical Acupuncture and Moxibustion*, 2025, 41(05):22-27.
- [5] Wang Nan, Pan Shaoying, Huang Dandan, et al. Hulu Moxibustion Combined with Acupuncture for the

- Treatment of 25 Cases of Lumbar Disc Herniation with Qi Stagnation and Blood Stasis Pattern [J]. *Zhejiang Journal of Traditional Chinese Medicine*, 2025, 60(01): 55-56.
- [6] Hou Yuke, Tian Zhihong, Xu Bing, et al. Clinical Observation on the Efficacy of Combined Acupuncture and Oral Chinese Herbal Decoction in Treating Lumbar Disc Herniation [J]. *Heilongjiang Medicine and Pharmacy*, 2025, 48(03):106-108.
- [7] HU Wei; WANG Cheng; CHEN Dan. Clinical observation of Fanzhen Jieci acupuncture combined with Sanhan Tongbi Decoction on lumbar disc herniation (Hanshi Bizu syndrome) [J]. *Tianjin Journal of Traditional Chinese Medicine*, 2023, 40(04):478-483.
- [8] Liu Yadong, Wang Qingding, Guo Jian. Observation of 112 Cases of Patients with Stable Lumbar Disc Herniation Treated with Waibishu Decoction Combined with Traditional Chinese Medicine Massage [J]. *Zhejiang Journal of Traditional Chinese Medicine*, 2024, 59(02):151-152.
- [9] Chen Dongjun, Li Mingming. The Effect of Combined External Application of Traditional Chinese Medicines and Traditional Chinese Orthopedic Massage on Symptoms, Signs, and Pain Severity in Patients with Lumbar Disc Herniation [J]. *Practical Journal of Cardiac Cerebral Pneumal and Vascular Disease*, 2021, 29(S2): 84-86.
- [10] Liu Zhiqun. Research on Application of Acupoint Application Combined with Traditional Chinese Medicine Stick Massage in Patients with Lumbar Disc Herniation [J]. *JOURNAL OF CHINESE AND FOREIGN MEDICINE AND PHARMACY RESEARCH*, 2025, 4(20):76-78.
- [11] Song Zepu. Clinical Study on the Combined Use of Modified Blood-Stasis-Resolving Decoction and Acupoint Plasters for Patients with Lumbar Disc Herniation of Qi-Stagnation and Blood-Stasis Pattern [D]. *Shandong University of Traditional Chinese Medicine*, 2023.
- [12] Cai Huiqian, Su Shengyong. Mechanism Study of Electroacupuncture's Anti-inflammatory and Analgesic Effects in LDH Rats Based on the miRNA27a / TLR4-NF- $\kappa$ B Signaling Pathway [J]. *Lishizhen Medicine and Materia Medica Research*, 2025, 36(05): 971-975.
- [13] Wan Junyu. Study on the Aftereffects of Moxibustion on CFA-Induced Chronic Inflammatory Pain and the Involvement of P2X7 in the Spinal Dorsal Root Ganglion [D]. *Chengdu University of Traditional Chinese Medicine*, 2024.
- [14] ZHANG Liying, TANG Yi, ZHANG Jian, et al. Effects of Ulnar-Tibial Acupuncture Plus EA Combined with Gubi Decoction Fumigation on Improvements of Lower Extremity Sensory Disturbance, Nerve Conduction Velocity and Serum TLR4 Signaling Pathway in Treating LDH [J/OL]. *Journal of Clinical Acupuncture and Moxibustion*, 2023, (07):25-30 [2025-12-08]. <https://doi.org/10.19917/j.cnki.1005-0779.023131>.
- [15] Li Huannan, Wang Jingui, Cong Deyu, et al. Multi-centered, Randomized Controlled Trial of Chinese Medicine Integrated Scheme in Treating Protrusion of Lumbar Intervertebral Disc [J]. *Journal of Traditional Chinese Medicine*, 2015, 56(21):1840-1844.
- [16] Chen Shunxi, Liu Feifei, Liu Xiaoping. Clinical Efficacy of Warm Acupuncture Combined with Tongdu Huoxue Decoction in Treating Lumbar Disc Herniation with Kidney Deficiency and Blood Stasis Pattern [J/OL]. *Chinese Archives of Traditional Chinese Medicine*, 1-10 [2025-12-09].
- [17] WANG Min, ZAHNG Yan-lin, ZOU Jing, et al. Effect of electroacupuncture of "Jiaji" (EX-B2) on autophagy and apoptosis of nucleus pulposus cells in degenerative intervertebral disc rabbits based on PI3K/AKT/mTOR pathway [J]. *Acupuncture Research*, 2025, 50(04): 411-418.
- [18] Zhang Hang. Effects of Small-Needle Knife Therapy on Sterile Inflammation and Joint Function in Patients with Radicular Cervical Spondylosis [J]. *Chinese Journal of Convalescent Medicine*, 2022, 31(04): 377-380.