

# A Retrospective Clinical Comparative Study of Acupuncture Combined with Huolong Cupping Therapy for Low Back Pain of Qi Stagnation and Blood Stasis Pattern

Huali Gao<sup>1</sup>, Yinghan Chu<sup>2</sup>, Chang'e Kuang<sup>3,4\*</sup>

<sup>1</sup>Department of Pediatrics and Acupuncture, Second District, The Affiliated Traditional Chinese Medicine Hospital, Guangzhou Medical University, Guangzhou 510000, Guangdong, China

<sup>2</sup>Guangzhou Chunxuanmao Senior Living Services Co., Ltd., Guangzhou 510000, Guangdong, China

<sup>3</sup>Department of Spine Surgery, The Sixth Affiliated Hospital, Sun Yat-sen University, Guangzhou 510000, Guangdong, China

<sup>4</sup>Guangzhou (Huangpu) Zhongliu Biomedical Innovation Center, Guangzhou, 510000, Guangdong, China

\*Corresponding author: Chang'e Kuang, [kuangche@mail.sysu.edu.cn](mailto:kuangche@mail.sysu.edu.cn)

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**Abstract:** *Objective:* To observe the clinical efficacy of acupuncture combined with Huolong cupping therapy in alleviating pain in patients with degenerative lumbar diseases presenting a Qi stagnation and blood stasis pattern, so as to provide evidence for optimizing conservative treatment regimens in clinical practice. *Methods:* A total of 116 inpatients diagnosed with degenerative lumbar diseases of Qi stagnation and blood stasis pattern admitted to the Acupuncture Department of our hospital from January 2024 to January 2026 were retrospectively enrolled. According to different rehabilitation interventions, the patients were divided into the control group (40 cases, treated with acupuncture alone) and the observation group (76 cases, treated with acupuncture plus Huolong cupping therapy). Both groups received 10 treatment sessions as one therapeutic course. The Visual Analog Scale (VAS) was adopted to evaluate the degree of low back pain at 1 day before treatment, as well as on the 3rd, 6th, 9th, and 11th day after treatment. An independent-samples *t*-test was used for comparison of measurement data, and a chi-square test was applied for enumeration data. *Results:* There were no statistically significant differences in baseline data, including age, gender, height, weight, and body mass index (BMI), between the two groups ( $p > 0.05$ ), indicating comparability. No significant difference in VAS scores was observed between the two groups 1 day before treatment ( $p = 0.087$ ). On the 3rd day after treatment, the VAS scores of both groups increased compared with the baseline, with no significant inter-group difference ( $p = 0.494$ ). Starting from the 6th day after treatment, the VAS score of the observation group was significantly lower than that of the control group ( $4.24 \pm 0.09$  vs.  $4.58 \pm 0.13$ ,  $p = 0.036$ ). On the 9th day ( $1.95 \pm 0.07$  vs.  $2.85 \pm 0.14$ ,  $p < 0.0001$ ) and the 11th day ( $0.64 \pm 0.09$  vs.  $1.85 \pm 0.16$ ,  $p < 0.0001$ ), the VAS scores of the observation group remained markedly lower than those of the control group. *Conclusion:* Acupuncture combined with Huolong cupping therapy can significantly relieve low back pain from the middle stage (the 6th day of treatment) in patients with degenerative lumbar diseases of

Qi stagnation and blood stasis pattern. The pain degree nearly reaches the pain-free level on the 11th day of treatment, and the overall efficacy is superior to acupuncture monotherapy. This combined therapy is safe and worthy of clinical promotion in acupuncture departments.

**Keywords:** Degenerative lumbar diseases; Qi stagnation and blood stasis; Low back pain; Acupuncture; Huolong cupping therapy

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## 1. Introduction

Degenerative lumbar diseases are one of the most common causes of lumbocrural pain in middle-aged and older adults, mainly including lumbar intervertebral disc herniation and lumbar spinal stenosis. The main clinical manifestations include distending pain of the waist and limited lumbar movement, accompanied by radiating pain in the buttocks and lower limbs, which seriously affects patients' daily activities and quality of life. Modern epidemiological studies show that with the prevalence of sedentary work, decreased physical activity, and population aging, the incidence of this disease increases year by year and tends to affect younger populations, imposing a heavy medical burden on families and society <sup>[1]</sup>. From the perspective of pathology, degenerative intervertebral discs, hyperplastic articular processes, and thick ligaments lead to mechanical imbalance of the lumbar spine and compression of nerve roots. In traditional Chinese medicine (TCM), this disease is categorized as lumbago or bi syndrome, and the Qi stagnation and blood stasis pattern is the most common type. It is usually caused by strain, trauma, or emotional disturbance, which leads to stagnation of meridians and blood. The core pathogenesis is that stagnation causes pain <sup>[2]</sup>.

At present, conservative treatment is the first choice for degenerative lumbar diseases, especially for patients without severe nerve compression or surgical indications. The basic therapeutic principles are activating blood circulation to dissipate stasis, regulating Qi to relieve pain, and dredging meridians. As a classic external TCM therapy, acupuncture can relax meridians, harmonize Qi and blood, and relieve muscle spasm by stimulating acupoints such as lumbosacral Jiaji points and Shenshu points. It has definite curative effects on low back pain and has been recommended as a basic intervention by multiple clinical guidelines <sup>[3]</sup>. However, clinical practice reveals that acupuncture alone has limited effects on releasing adhesion of deep soft tissues and relieving myofascial tension. Some patients experience slow pain relief and long treatment courses, which fail to meet the demand for rapid rehabilitation <sup>[4]</sup>.

Huolong cupping therapy is a combined external TCM technique that integrates moxibustion for warming and unblocking meridians, negative-pressure cupping and tuina for tendon regulation. Combined thermal stimulation and mechanical compression effects enable this therapy to warm meridians, dispel cold, activate blood circulation and remove stasis, as well as release tendon nodules. It is especially suitable for pain disorders caused by Qi stagnation, blood stasis, and cold-damp retention <sup>[5]</sup>. Operated along the Governor Vessel and Bladder Meridian, it can stimulate meridian Qi, improve local microcirculation, and accelerate the metabolism of pain-causing substances. Combined with acupuncture, the two therapies complement each other with respective advantages <sup>[6]</sup>. Nevertheless, comparative studies on acupuncture combined with Huolong cupping therapy for degenerative lumbar diseases of Qi stagnation and blood stasis pattern are still insufficient. The intervention timing, efficacy characteristics, and clinical value of this combined regimen

require further verification.

In this study, 116 patients with degenerative lumbar diseases of Qi stagnation and blood stasis pattern were enrolled retrospectively and treated with acupuncture alone or acupuncture combined with Huolong cupping therapy, respectively. The VAS score was taken as the main observation indicator. We dynamically compared pain changes at 1 day before treatment and on the 3rd, 6th, 9th, and 11th day after treatment, so as to explore the clinical advantages of the combined therapy and provide objective evidence for optimizing conservative treatment and rehabilitation schemes for degenerative lumbar diseases.

## 2. Materials and methods

### 2.1. General data

A total of 116 inpatients with degenerative lumbar diseases admitted to the Acupuncture Department of our hospital from January 2024 to January 2026 were retrospectively enrolled. The patients were divided into the control group (n = 40) and the observation group (n = 76) according to different rehabilitation interventions.

#### 2.1.1. Inclusion criteria

- (1) Aged over 18 years old;
- (2) Diagnosed with degenerative lumbar diseases (lumbar intervertebral disc herniation, lumbar spinal stenosis, etc.) via MRI or CT examination, with consistent clinical manifestations and imaging results;
- (3) Compliant with the diagnostic criteria for lumbar intervertebral disc herniation specified in *Criteria for Diagnosis and Therapeutic Effect of TCM Diseases*: persistent distending pain in the waist with obvious tenderness, or distending pain in the buttocks and lower limbs, accompanied by limited lumbar movement to varying degrees<sup>[7]</sup>;
- (4) Differentiated as Qi stagnation and blood stasis pattern based on TCM syndrome differentiation;
- (5) Follow-up duration no less than 12 months with complete clinical and imaging data.

#### 2.1.2. Exclusion criteria

- (1) Grade II or above lumbar spondylolisthesis, severe scoliosis or kyphosis;
- (2) History of lumbar surgery, spinal infection, spinal tumor, spinal tuberculosis and other related diseases;
- (3) Combined with severe dysfunction of heart, lung, liver, kidney and other vital organs, unable to tolerate treatment;
- (4) Coagulopathy, mental disorders and other conditions affecting treatment and follow-up.

### 2.2. Treatment methods

A fixed team of experienced acupuncturists and nurses performed all treatments. Physicians performed acupuncture, while nurses operated Huolong cupping devices. Relevant examinations were completed before treatment to confirm the lesion segments and ranges.

#### 2.2.1. Control group

Treated with acupuncture alone.

- (1) Main acupoints  
Ashi points (tenderness points), Mingmen (GV4), Shenshu (BL23), Lumbosacral Jiaji points,

Yaoyangguan (GV3), Weizhong (BL40), Chengfu (BL36), Fengshi (GB31), Xuanzhong (GB39).

(2) Adjunct acupoints

Were selected according to symptoms, including Zhibian (BL54), Baliao points, Huantiao (GB30), Yanglingquan (GB34), Yinlingquan (SP9), and Kunlun (BL60).

Acupuncture once daily. One course consisted of 10 days' acupuncture, and all patients received one course of treatment.

### 2.2.2. Observation group

Received Huolong cupping therapy on the basis of the same acupuncture regimen as the control group.

Patients took the prone position to expose the lumbar region fully. Appropriate Huolong cups were selected. After moxa cones were ignited inside the cups, the cups were moved along the Governor Vessel, Bladder Meridian, and painful areas of the waist. Manipulations included tapping, shaking, pressing, rolling, pushing, kneading, plucking, rubbing, ironing, and rolling. The treatment was terminated when local skin became flushed and warm without burning pain. Each session lasted for 30 minutes, once every other day, 5 sessions for one course, and all patients received one course of treatment. Routine treatment and nursing of the control group were also provided.

## 2.3. Observation indicators

### 2.3.1. Baseline data

Age, gender, height, weight, and BMI of all patients.

### 2.3.2. Therapeutic indicator

VAS score for low back pain. The score ranges from 0 (painless) to 10 (severe pain). Scores were recorded 1 day before treatment and on the 3rd, 6th, 9th, and 11th days after treatment, respectively.

## 2.4. Statistical methods

SPSS 22.0 statistical software was used for data analysis. Measurement data were expressed as mean  $\pm$  standard deviation ( $\bar{x} \pm s$ ), and compared by independent-samples *t*-test. Enumeration data were compared by a chi-square test. A *P* value less than 0.05 was considered statistically significant.

## 3. Results

### 3.1. Comparison of baseline data between two groups

(1) In the observation group

32 males and 44 females; mean age ( $59.05 \pm 2.10$ ) years old; mean height ( $161.4 \pm 0.91$ ) cm, mean weight ( $63.35 \pm 1.37$ ) kg, BMI range 17.67–34.53 kg/m<sup>2</sup>, mean BMI ( $24.24 \pm 0.44$ ) kg/m<sup>2</sup>.

(2) In the control group

23 males and 17 females; mean age ( $59.05 \pm 2.10$ ) years old; mean height ( $164.3 \pm 1.25$ ) cm, mean weight ( $64.68 \pm 1.61$ ) kg, BMI range 17.43–32.53 kg/m<sup>2</sup>, mean BMI ( $23.95 \pm 0.53$ ) kg/m<sup>2</sup>.

There were no statistically significant differences in age, gender, height, weight, and BMI between the

two groups ( $p > 0.05$ ), which indicated the two groups were comparable. (See **Table 1**)

**Table 1.** Comparison of baseline data between the two groups

| Index                    | Control group (n = 40) | Observation group (n = 76) | $t/\chi^2$ | p value |
|--------------------------|------------------------|----------------------------|------------|---------|
| Age (years old)          | 59.05 ± 2.10           | 57.57 ± 1.65               | 0.54       | 0.589   |
| Gender (Male)            | 23                     | 32                         | 2.49       | 0.115   |
| Gender (Female)          | 17                     | 44                         | -          | -       |
| Height (cm)              | 164.3 ± 1.25           | 161.4 ± 0.91               | 1.86       | 0.065   |
| Weight (kg)              | 64.68 ± 1.61           | 63.35 ± 1.37               | 0.60       | 0.550   |
| BMI (kg/m <sup>2</sup> ) | 23.95 ± 0.53           | 24.24 ± 0.44               | 0.41       | 0.682   |

### 3.2. Comparison of VAS scores before and after treatment

One day before treatment: VAS score of the observation group was  $3.46 \pm 0.07$ , and that of the control group was  $3.65 \pm 0.07$ , with no significant difference between the two groups ( $t = 1.73$ ,  $p = 0.087$ ).

On the 3rd day after treatment: VAS score of the observation group was  $4.61 \pm 0.06$ , control group  $4.68 \pm 0.08$ , with no significant difference ( $t = 0.69$ ,  $p = 0.494$ ).

On the 6th day after treatment: VAS score of the observation group was  $4.24 \pm 0.09$ , significantly lower than  $4.58 \pm 0.13$  of the control group ( $t = 2.13$ ,  $p = 0.036$ ).

On the 9th day after treatment: VAS score of the observation group was  $1.95 \pm 0.07$ , obviously lower than  $2.85 \pm 0.14$  of the control group ( $t = 6.66$ ,  $p < 0.0001$ ).

On the 11th day after treatment: VAS score of the observation group was  $0.64 \pm 0.09$ , markedly lower than  $1.85 \pm 0.16$  of the control group ( $t = 6.93$ ,  $p < 0.0001$ ). (See **Table 2**)

**Table 2.** Comparison of VAS scores at different time points before and after treatment

| Time point               | Control group | Observation group | t value | p value  |
|--------------------------|---------------|-------------------|---------|----------|
| 1 day before treatment   | 3.65 ± 0.08   | 3.46 ± 0.07       | 1.73    | 0.087    |
| 3rd day after treatment  | 4.68 ± 0.08   | 4.61 ± 0.06       | 0.69    | 0.494    |
| 6th day after treatment  | 4.58 ± 0.13   | 4.24 ± 0.09       | 2.13    | 0.036    |
| 9th day after treatment  | 2.85 ± 0.14   | 1.95 ± 0.07       | 6.66    | < 0.0001 |
| 11th day after treatment | 1.85 ± 0.16   | 0.64 ± 0.09       | 6.93    | < 0.0001 |

## 4. Discussion

Degenerative lumbar disease is a common chronic painful disorder in acupuncture departments. Patients with Qi stagnation and blood stasis pattern mainly present with lumbocrural distending pain and limited movement caused by blocked meridians and poor blood circulation. The core therapeutic principles are dredging meridians, activating blood circulation, regulating Qi, and relieving pain [2]. The 116 enrolled patients had balanced baseline data and similar preoperative pain levels, which guaranteed the reliability of efficacy comparison. The results proved that acupuncture combined with Huolong cupping therapy was superior to acupuncture alone in alleviating low back pain, providing evidence-based support for the rehabilitation of patients with degenerative lumbar diseases of Qi stagnation and blood stasis pattern.

Acupuncture has formed a mature acupoint selection scheme for this disease. Needling Ashi points, Mingmen, Shenshu, and lumbosacral Jiaji points can directly act on the lesion areas, dredge lumbar meridians

and Qi-blood, and regulate local nerve and muscle tension. It is a basic external therapy for low back pain<sup>[3]</sup>. The VAS scores of the control group decreased gradually after single acupuncture treatment, which confirmed the definite curative effect of acupuncture on degenerative lumbar pain. However, acupuncture has limited effects on improving local microcirculation, releasing fascia, and eliminating inflammation. There is room for improvement in pain relief speed and long-term control effect.

The observation group adopted combined therapy, which embodied the advantages of integrating multiple external TCM therapies. Integrating moxibustion warming effect, negative-pressure cupping, and Tuina manipulation, Huolong cupping therapy is operated along the Governor Vessel and Bladder Meridian to warm and unblock meridians, activate blood circulation and remove stasis, and relieve myofascial spasm. From the perspective of modern medicine, its thermal effect can increase local blood flow and accelerate the metabolism of pain-causing substances. Negative pressure and manual manipulation can inhibit pain signal transmission and promote the release of endogenous opioid peptides, so as to achieve sustained analgesia<sup>[8]</sup>. In this study, the VAS scores of the two groups showed no difference on the 3rd day, indicating a similar early stress response. From the 6th day onwards, the VAS score of the observation group decreased significantly, and the difference was more prominent on the 9th and 11th days. This suggested that the combined therapy could enter the rapid pain relief stage earlier with a longer-lasting analgesic effect.

It is noteworthy that the VAS scores of both groups increased on the 3rd day compared with baseline (control group: from 3.65 to 4.68; observation group: from 3.46 to 4.61). This phenomenon may be attributed to slight tissue irritation caused by acupuncture, a normal inflammatory response during Deqi (needle sensation), as well as patients' psychological expectation and tension<sup>[9]</sup>. Besides, the long-term pathological state of patients was broken in the early stage of treatment, leading to rapid changes in local blood circulation and metabolism, which may also cause transient aggravation of pain<sup>[10]</sup>. Although the increase range of VAS score in the observation group was slightly lower than the control group (+ 1.03 vs. + 1.15), the difference had no statistical significance, which meant both regimens experienced a similar short-term reaction period in the early treatment stage.

The pain relief advantage of the observation group gradually emerged from the 6th day. On the 11th day, the VAS score of the observation group dropped to  $0.64 \pm 0.09$ , close to the pain-free level, while the control group still scored  $1.85 \pm 0.16$ . Such time-dependent efficacy differences reflected the synergistic effect of Huolong cupping combined with acupuncture<sup>[11]</sup>. Various manipulations, including tapping, rolling, and pressing of Huolong cups, can mechanically release adhered fascia and muscles, reduce local muscle tension, and cut off the vicious cycle of pain-spasm-ischemia-pain<sup>[12]</sup>. Thermal stimulation can up-regulate the release of endogenous opioids such as beta-endorphin, and enhance the regulatory effect of descending inhibitory pathways on pain signals<sup>[13]</sup>. Compared with single acupuncture, Huolong cupping delivers deeper and longer-lasting physical stimulation. Since inflammation elimination and tissue repair require time for accumulation, its advantages become prominent in the middle and late treatment stages (after the 6th day).

From the perspective of TCM theory, all enrolled patients were diagnosed with a Qi stagnation and blood stasis pattern. Acupuncture at Ashi points, Shenshu, and Weizhong can activate blood circulation and relieve pain. On the basis of acupuncture, Huolong cupping adds warming and rubbing effects. As the old TCM saying goes: Blood flows smoothly when warmed and stagnates when chilled. Thermal power promotes blood circulation, and rubbing manipulations disperse blood stasis. The combination perfectly matches the pathogenesis of Qi stagnation and blood stasis. Meanwhile, rolling, plucking, and other manipulations of

Huolong cupping simulate Tuina therapy to further release deep lumbar soft tissues and improve lumbar mobility. Acupuncture focuses on regulating Qi via acupoints, while Huolong cupping emphasizes warming meridians and removing stasis. The combination works together to relieve Qi stagnation and blood stasis, and improve patients' activity and comfort more efficiently.

This study is a retrospective research with a limited sample size, which may lead to selection bias and recall bias. Indicators such as lumbar function and quality of life were not included, and the follow-up only lasted until the 11th day after treatment. Long-term follow-up data (1 month, 3 months) were lacking, so the long-term efficacy and recurrence rate could not be evaluated. VAS is a subjective scale, easily affected by patients' mental state, educational background, and trust in TCM treatment. Parallel detection of objective inflammatory indicators such as C-reactive protein and tumor necrosis factor- $\alpha$ , as well as mechanism exploration, were not conducted. All the above are limitations of this research. In the future, prospective, multi-center, and large-sample randomized controlled trials shall be carried out with extended follow-up duration. Combined with inflammatory factors, hemodynamic detection, imaging, and laboratory indicators, comprehensive evaluation will be conducted further to verify the efficacy and mechanism of this combined therapy.

## 5. Conclusion

In conclusion, acupuncture combined with Huolong cupping therapy can rapidly and significantly relieve low back pain in patients with degenerative lumbar diseases of Qi stagnation and blood stasis pattern, with reliable safety. It is worthy of wide application in clinical acupuncture departments.

## Disclosure statement

The authors declare no conflict of interest.

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