

The Efficacy of Acupuncture in Treating Chronic Low Back Pain and its Impact on Patients' Quality of Life

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Abstract: *Objective:* To analyze the efficacy of acupuncture treatment for chronic low back pain, especially the impact on patients' quality of life. *Methods:* 60 patients with chronic low back pain were selected from our hospital from January to December 2024 for data research. They were divided into groups using the random number table method, with 30 patients in each group. The research group was treated with acupuncture, and the control group was treated with conventional drugs. The data differences between the groups were compared. *Results:* Compared with the control group, the VAS score of the study group after treatment was significantly lower, the ODI score after treatment was significantly lower, and the quality-of-life scores were all significantly higher, $p < 0.05$; comparing the VAS scores, ODI scores, and quality of life scores of the two groups before treatment, $p > 0.05$. *Conclusion:* The efficacy of acupuncture treatment for chronic low back pain is ideal, especially the patient's quality of life is significantly improved.

Keywords: Acupuncture treatment; Chronic low back pain; Efficacy; Quality of life

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1. Introduction

Chronic low back pain is common clinically, and middle-aged and elderly people are prone to this disease. In recent years, its incidence has increased year by year and has become younger. The core symptoms of patients are repeated waist pain and limited activity^[1]. If the patient has pain for 12 weeks, it will significantly reduce the patient's daily life and work ability. The patient is prone to anxiety, depression, sleep disorders, etc., and the quality of life is seriously reduced. Currently, non-steroidal anti-inflammatory drugs, muscle relaxants and other drugs are mainly used clinically to treat chronic low back pain. Short-term use can relieve patients' pain symptoms, but long-term use can cause adverse reactions in patients. Patients are prone to disease recurrence after stopping the drug, and the overall treatment effect is not ideal^[2]. The traditional external treatment methods of traditional Chinese medicine include acupuncture. The core theoretical advantage is "unblocking the meridians, activating the meridians, promoting Qi and relieving pain". It can be used to treat chronic painful diseases. After stimulating specific acupoints, the movement of Qi and blood in the meridians is regulated, and the blood circulation and nerve function of the patient's diseased parts are significantly improved^[3]. Moreover, using

acupuncture for patients is simple to operate, has high application safety, and patients are not prone to adverse reactions. At present, there are not many clinical studies on the efficacy of acupuncture treatment for chronic low back pain. Therefore, this study was conducted to analyze the efficacy of acupuncture treatment for chronic low back pain, especially the impact on patients' quality of life.

2. Materials and methods

2.1. Information

60 patients with chronic low back pain were selected from our hospital from January to December 2024 for data research. They were divided into groups using the random number table method, with 30 patients in each group. The study group was 16/14 men and women, aged 21–68 (45.28 ± 6.35) years old, and the control group was 17/13 men and women, aged 22–67 (45.25 ± 6.31) years old. Comparison of the two sets of data resulted in $p > 0.05$.

2.1.1. Inclusion criteria

Diagnosis according to IASP standards, persistent low back pain for more than 3 months; Agree to participate and sign an informed agreement; No history of cognitive dysfunction or mental illness.

2.1.2. Exclusion criteria

Induced by infection, tumor, fracture or spinal structural disease; using anticoagulants or bleeding disorders; lactating or pregnant; having contraindications to acupuncture or a history of allergies; having undergone other treatments within the past 3 months, such as massage, physical therapy, etc.; having a history of severe drug allergies.

2.2. Method

The control group was treated with conventional drugs, including ibuprofen sustained-release capsules, 400 mg/time, 2 times/d, orally administered after meals for 12 weeks. The research group applied acupuncture treatment, choosing Zusanli, Weizhong, Shenshu and Mingmen, using disposable sterile acupuncture needles (needle length 25–40 mm, diameter 0.20–0.30 mm) to stimulate acupoints, comfortable posture, local skin disinfection, rapid needle insertion to a depth of 1–2 cm, leaving the needle for half an hour, lifting, inserting, twisting, etc. every 10 minutes, 3 times/week, with an interval of more than 1 day each time, and treatment for 12 weeks.

2.3. Observation indicators

- (1) Compare the VAS scores and ODI scores of the two groups. Measured using visual analog scale and Oswestry Disability Index questionnaire.
- (2) Compare the quality-of-life scores of the two groups. Measured using the Brief Health Questionnaire.

2.4. Statistics

Data calculation was completed with statistical SPSS 28.0 software. Measurement data were described with $\bar{x} \pm s$, t test, count data was described with %, χ^2 test, $p < 0.05$, statistically significant.

3. Results

3.1. Compare the VAS scores and ODI scores of the two groups

Compared with the control group, the VAS score of the study group was significantly lower after treatment, and the ODI score after treatment was significantly lower, $p < 0.05$; comparing the VAS scores and ODI scores of the two groups before

treatment, $p > 0.05$. **Table 1.**

Table 1. Comparison of VAS scores and ODI scores (points) between the two groups

Group	VAS score		ODI score	
	Before treatment	After treatment	Before treatment	After treatment
Research group (n = 30)	7.4 ± 1.2	3.3 ± 1.2	45.1 ± 10.2	22.4 ± 8.5
Control group (n = 30)	7.5 ± 1.1	5.2 ± 1.4	46.2 ± 9.7	35.1 ± 11.5
<i>t</i>	0.3365	5.6438	0.4280	4.8643
<i>p</i>	> 0.05	< 0.05	> 0.05	< 0.05

3.2. Compare the quality-of-life scores of the two groups

Compared with the control group, the quality-of-life scores of the research group were significantly improved, $p < 0.05$; comparing the quality-of-life scores of the two groups before treatment, $p > 0.05$. **Table 2 and 3.**

Table 2. Comparison of various quality of life scores between the two groups (points)

Group	Physiological function		Physiological functions		Vitality		Mental health	
	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Research group (n = 30)	40.4 ± 12.2	75.2 ± 14.1	45.24 ± 5.21	72.05 ± 8.32	50.24 ± 5.14	75.21 ± 8.32	48.01 ± 2.54	73.51 ± 6.95
Control group (n = 30)	40.5 ± 12.8	52.36 ± 7.65	45.14 ± 4.29	57.07 ± 8.15	50.78 ± 4.11	60.25 ± 6.04	48.36 ± 3.25	51.47 ± 7.11
<i>t</i>	0.0310	7.7985	0.0812	7.0448	0.4494	7.9698	0.4648	12.1415
<i>p</i>	> 0.05	< 0.05	> 0.05	< 0.05	> 0.05	< 0.05	> 0.05	< 0.05

Table 3. Comparison of various quality of life scores between the two groups (points)

Group	Emotional function		Somatic pain		Social function		General health	
	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Research group (n = 30)	51.24 ± 1.25	73.58 ± 5.25	45.14 ± 2.63	72.54 ± 7.01	52.37 ± 4.11	79.15 ± 6.85	51.27 ± 2.65	72.25 ± 7.79
Control group (n = 30)	51.27 ± 2.54	61.25 ± 7.72	45.32 ± 2.54	54.95 ± 7.12	52.39 ± 5.21	67.24 ± 6.38	51.41 ± 2.54	58.25 ± 8.21
<i>t</i>	0.0580	7.2337	0.2696	9.6424	0.0165	6.9687	0.2089	6.7754
<i>p</i>	> 0.05	< 0.05	> 0.05	< 0.05	> 0.05	< 0.05	> 0.05	< 0.05

4. Discussion

Patients with chronic low back pain have long-term recurring pain and progressive dysfunction, which affects the patient's mental state, social participation, and overall quality of life. There are many problems in clinical research on the effect of conventional drugs in treating patients with chronic low back pain^[4]. Therefore, it is clinically proposed to use

acupuncture, a traditional external therapy method of traditional Chinese medicine, to use syndrome differentiation and overall adjustment to achieve significant pain relief in patients with chronic low back pain. The clinical practice of this article has confirmed that acupuncture treatment for chronic low back pain has ideal effects, especially the patient's quality of life has been significantly improved. The results of this article can support this.

The results of this study show that after 12 weeks of treatment, all indicators of the two groups were improved compared with before treatment, and the improvement rate of the research group was significantly better than that of the control group ($p < 0.05$). The results fully confirmed that the effect of acupuncture treatment on patients was good. From the perspective of pain relief, the VAS score of the research group dropped to (3.3 ± 1.2) points after treatment, while that of the control group was (5.2 ± 1.4) points. The ibuprofen sustained-release capsules used in the control group can inhibit the synthesis of prostaglandins and help patients with symptomatic analgesia. However, this drug cannot help patients solve the underlying cause. The research group uses acupuncture treatment. Based on the traditional Chinese medicine theory of "drug meridians, activate meridians, circulate Qi and relieve pain", specific acupoints are stimulated, and the movement of Qi and blood in the patient's meridians is regulated, so as to treat the disease^[5]. Because the patient's disease state has been significantly improved, Zusanli, Weizhong, Shenshu, and Mingmen are selected during the operation, which can effectively treat the patient's back pain. Shenshu acupuncture can help the patient nourish the kidneys, strengthen the waist, and nourish the tendons, and Weizhong acupuncture can help the patient unblock the patient's back pain. Meridians, relieve muscle spasm, nerve compression pain, acupuncture at Zusanli can help patients replenish Qi and nourish blood, and promote the repair of diseased tissues. Acupuncture at Mingmen can help patients warm the kidneys and dispel cold. This method is suitable for treating patients with Yang deficiency and cold coagulation syndrome. Modern medicine has confirmed that acupuncture treatment can regulate the patient's nerves and body fluids and help patients achieve effective analgesia^[6]. After the application of this method, it can inhibit the release of pain-causing substances such as substance P, promote the synthesis of endorphins and other analgesic substances, and can help patients block the upload of pain signals. The local blood circulation in the patient's waist is significantly improved, and the patient's inflammatory factor infiltration and tissue edema are significantly reduced. After the patient's treatment, pain triggers are eliminated from multiple levels^[7]. The results of this study show that in terms of functional impairment improvement, the ODI score of the study group dropped to (22.4 ± 8.5) points after treatment, and that of the control group dropped to (35.1 ± 11.5) points. The results fully confirmed that acupuncture treatment can effectively restore lumbar function and reduce the patient's disability. Although the conventional drug treatment used in the control group can partially relieve the patient's pain, the patient deliberately reduced waist activity because of fear of disease recurrence, making it difficult for the patient to fundamentally improve the function. The research group used acupuncture treatment, which can adjust the innervation function of the patient's lumbar muscles, relieve spasm, and restore the patient's muscle tension^[8]. When the pain is relieved, the patient's confidence in activities increases and he actively participates in daily activities, which can effectively prevent the patient from disuse atrophy and effectively reduce the patient's ODI score.

The results of this study show that the SF-36 scale was used to evaluate patients' quality of life. The results showed that the scores of each dimension in the research group after treatment were significantly higher than those in the control group. The results of the study confirmed that acupuncture treatment for patients can comprehensively improve the overall health of the patients. In physiological related dimensions, the study group's physiological function, physiological function, and body pain scores increased from (40.4 ± 12.2) points, (45.24 ± 5.21) points, and (45.14 ± 2.63) points to (75.2 ± 14.1) points, (72.05 ± 8.32) points, and (72.54 ± 7.01) points. This is because after acupuncture treatment, the patient relieves pain and effectively restores function.

The patient expands the range of waist movement, significantly reduces the degree of pain that interferes with life, and can independently complete daily movements, resume work and housework. In addition, in terms of psychological and spiritual dimensions, the research group's mental health, vitality, and emotional function scores increased from (48.01 ± 2.54) points, (50.24 ± 5.14) points, (51.24 ± 1.25) points to (73.51 ± 6.95) points, (75.21 ± 8.32) points, and (73.58 ± 5.25) points. The results confirmed that acupuncture treatment for patients can significantly improve their quality of life,

including psychological and spiritual dimensions. For patients with chronic low back pain, they have negative emotions, lower pain thresholds, and increased perception.

The two interact with each other. Pain can also cause sleep disorders, mental energy consumption, decreased vitality, and depressed mood. The use of acupuncture treatment for patients can significantly improve the patient's mental state. On the one hand, the application of this method can significantly relieve the patient's pain and eliminate the core triggers of negative emotions. On the other hand, it regulates the balance of the patient's central neurotransmitters, alleviates the patient's tendency to anxiety and depression, and with functional recovery, the patient's sense of self-identity is enhanced, and the mood and vitality are further improved. In the dimension of social function and overall health, the social function and overall health scores of the study group increased from (52.37 ± 4.11) points and (51.27 ± 2.65) points to (79.15 ± 6.85) points and (72.25 ± 7.79) score, the analysis reason is that the patient suffered from limited activities, pain, and social function decline after the illness. After acupuncture treatment, the patient's pain was relieved, his functions recovered, and he could participate in social and recreational activities normally. The patient's social function was significantly improved. Analysis of the improvement in the overall health scores of the patients in this study group is a comprehensive reflection of multi-dimensional improvement in physical, psychological, and social functions, confirming that the patients' quality of life has been significantly improved.

In summary, acupuncture treatment for chronic low back pain has ideal effects, especially the patient's quality of life has been significantly improved, the patient's VAS score was significantly lower after treatment, and the ODI score was significantly lower after treatment, which is worthy of clinical promotion and use.

About the author

Li Ang (1986.11—), female, Han, from Suqian, Jiangsu, undergraduate, deputy chief TCM physician in the community, research direction is the clinical efficacy of acupuncture in the treatment of painful diseases.

Disclosure statement

The authors declare no conflict of interest.

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