

Acupuncture-movement therapy for acute lumbar sprain: a randomized controlled clinical trial

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Abstract

OBJECTIVE: Several studies have reported that acupuncture is effective for treatment of acute lumbar sprain, but they neglected to consider that acupuncture cannot remarkably improve lumbar activity. We performed a randomized controlled trial to evaluate the effect of acupuncture-movement therapy versus conventional acupuncture in the treatment of acute lumbar sprain.

METHODS: Sixty patients were randomized into four groups: the acupuncture-movement (AM) group, sham acupuncture-movement (SAM) group, conventional acupuncture (CA) group, and physical

therapy (PT) group. Patients in the AM group were treated with acupuncture at Yintang (EX-HN 3) and exercise of the lumbar region during acupuncture. Patients in the SAM group were treated with sham acupuncture at Yintang (EX-HN 3) and exercise of the lumbar region during sham acupuncture. Conventional acupuncture was performed in the CA group, and physical therapy was applied in the PT group. Each treatment lasted for 20 min. Patients were assessed before and after treatment using a visual analogue scale (VAS) and the Roland Morris Questionnaire (RMQ).

RESULTS: The VAS and RMQ scores in the AM group were significantly lower after than before treatment ($P < 0.01$). The AM group reported lower RMQ scores in after-treatment and 24 h after treatment and lower VAS score in 24 h after treatment in comparison with those of the CA, SAM, and PT groups ($P < 0.05$).

CONCLUSION: Acupuncture-movement therapy is effective for treating acute lumbar sprain with a persistent pain-relief and remarkable improvement of lumbar activity. Movement, that is, lumbar exercise during acupuncture, enhances the effect of acupuncture.

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Key words: Acupuncture; Movement; Exercise; Lumbar sprain; Randomized controlled trial

INTRODUCTION

Acute lumbar sprain refers to an acute injury of the lumbar muscles, fasciae, ligaments, or intervertebral

facet joints caused by overburden, improper posture and movement, or insufficient preparation before exercise.¹ It leads to severe lower back pain and limitation of spinal activities. Statistics show that acute lumbar sprain affects 60% to 80% of the general adult population, especially young adults and manual workers.² This common health problem greatly decreases patients' quality of life.³

Nonsteroidal anti-inflammatory drugs and physical therapy are commonly used to treat acute lumbar sprain, but some drugs should be avoided because of their various side effects.⁴ Affected patients often seek help through complementary therapy. Acupuncture is usually adopted for treatment in such cases. The ability of acupuncture to effectively relieve pain has been confirmed by a considerable amount of research to date.⁵ Unfortunately, the long-term effects of acupuncture in relieving pain and improving lumbar activity are relatively poor. However, acupuncture-movement therapy solves this problem in many cases.⁶

Acupuncture-movement therapy is a new treatment technique for some locomotor and nervous system diseases. Acupuncture and movement promote and influence each other in the course of treatment. The doctor usually punctures acupoints distal to the lumbar region, and the patient is asked to exercise his or her waist while retaining the needles.⁷ The immediate analgesic effect of the acupuncture lays the foundation for lumbar exercise, while the exercise enhances the long-term effect of the acupuncture in relieving pain and improving lumbar activity. We performed a randomized controlled trial to evaluate the effect of acupuncture-movement therapy for treatment of acute lumbar sprain.

METHODS

Study design

This randomized, single-assessor-blinded clinical trial was carried out in the General Hospital of Ningxia Medical University in China from May 2012 to January 2014. In total, 60 patients were observed. A computer-generated random number table was used. The 60 patients were randomized into 4 groups: the acupuncture-movement (AM) group, sham acupuncture-movement (SAM) group, conventional acupuncture (CA) group, and physical therapy (PT) group. The trial statistician, who was not involved in the treatment administration or outcome collection, generated the schedule for the random allocation sequence, which was held in a secure cabinet only accessible to himself. To investigate whether the treatment preference had any influence on outcomes, each patient was asked which treatment he or she would prefer to receive before randomization. Due to the nature of the interventions, it was not possible to blind the doctor who provided the treatments. This study was approved by the

Ethics Committee of the General Hospital of Ningxia Medical University.

Patients

Patients received information about the study from newspapers and posters at the General Hospital of Ningxia Medical University and from the Internet in their communities. The treatment process was explained to each patient to ensure an understanding of the study. After signing a consent form, the patients were enrolled in the trial. The criteria for diagnosis and therapeutic effects for Traditional Chinese Medicine (TCM) diseases and syndromes issued by the State Administration of TCM were adopted for treatment and evaluation in this trial.⁸

Inclusion criteria

The inclusion criteria were as follows: age of 20 to 60 years, ≤ 3 -day course of acute lumbar sprain, visual analog scale (VAS) score of ≥ 4 (moderate to severe pain), no spinal surgery, no acupuncture treatment for acute lumbar sprain in the previous month, and no treatment since the onset of the acute lumbar sprain.

Exclusion criteria

The exclusion criteria were as follows: infectious diseases, tuberculosis, and rheumatic diseases; other serious diseases such as mental disorders, cancer, stroke, and myocardial infarction as well as cardiac pacemaker implantation; radicular pain indicative of nerve root compression; diagnosis of severe spinal canal stenosis, spondylolisthesis, or fibromyalgia; pregnancy; and physical or laboratory examination findings indicative of unsuitability for our study.

Patients were instructed to undergo acupuncture and physical therapy for pain control. The use of nonsteroidal anti-inflammatory drugs and other therapies were monitored and recorded by the researchers, and these patients were analyzed separately.

Interventions

Acupuncture therapy and sham acupuncture therapy
Acupuncture and sham acupuncture were carried out by certified acupuncture doctors with ≥ 5 years of clinical experience in the General Hospital of Ningxia Medical University. Yintang (EX-HN 3) was selected for treatment in the AM, CA and SAM groups.

In the AM and CA group, the acupuncture point was routinely disinfected and a disposable stainless steel needle (0.30 \times 25 mm; Huatuo Acupuncture, Suzhou, China) was inserted horizontally. The needle was retained for 20 min after arrival of *Qi* and then removed.

In the SAM group, the acupuncture point was routinely disinfected and pressed with a semi-blunt needle fitted within a guide tube. The tube containing the needle was fixed onto the forehead with adhesive plaster. After 20 min, the tube and needle were removed.

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