

SYSTEMATIC REVIEW

Effect of miniscalpel-needle on relieving the pain of myofascial pain syndrome: a systematic review

Liu Tong, Peng Yuanyuan, Zhu Shipeng, Chen Huan, Li Fuyun, Hong Peixin, Cao Bingyan, Peng Bo, Fan Yifan, Chen Yupei, Zhang Li

Liu Tong, Peng Yuanyuan, Zhu Shipeng, Chen Huan, Li Fuyun, Hong Peixin, Cao Bingyan, Peng Bo, Fan Yifan, Chen Yupei, Zhang Li, Department of Acupuncture-Moxibustion and Tuina, Beijing University of Chinese Medicine, Beijing 100029, China

Correspondence to: Prof. Zhang Li, Department of Acupuncture-Moxibustion and Tuina, Beijing University of Chinese Medicine, Beijing 100029, China. zhangli1572@sina.com

Supported by Grants from the National Natural Science Foundation of China (Effect of Electroacupuncture at Weizhong (BL 40) Acupoint for Skeletal Muscle Satellite Cells and Inflammatory Reaction during the Repairment Of Rabbit Lumbar Muscle Injury, No. 81141120), and the Specialized Research Fund for the Doctoral Program of Higher Education of Ministry of Education of China (Effect of Acupuncture on Mechanical Characteristics of Myofascial Pain Syndrome of Rabbits, No. 20100013110014)

Telephone: +86-10-64286703; +86-18810958123

Accepted: March 19, 2015

potential benefit of MSN as a strategy for MPS and the superiority compared to the controls, however, randomized methods applied in most of the trials could be criticized for their high or unclear risk of bias. Further research is also needed to clarify questions around the appropriate frequency and number of treatment sessions of MSN.

CONCLUSION: This review shows that MSN might have the effect on MPS, even though there were some limitations in the studies included in the review. Studies with robust methodology are warranted to further test its pain-relieving effect on MPS.

© 2015 JTCM. All rights reserved.

Key words: Myofascial pain syndromes; Miniscalpel-needle; Treatment outcome; Review

Abstract

OBJECTIVE: To evaluate the effect and safety of miniscalpel-needle (MSN) on reducing the pain of myofascial pain syndrome (MPS).

METHODS: We reviewed the available literatures inception up to February 2014 using Pubmed, EMBASE, Cochrane Library, Chinese National Knowledge Infrastructure Database, Chinese Biomedical Database and Wanfang Database.

RESULTS: Eight randomized controlled trials were finally identified. The main controls involved acupuncture, medications, injection, massage and cupping. We found that all of the studies agreed on the

INTRODUCTION

Myofascial pain syndrome (MPS), is characterized by the existence of trigger points within muscles, it could be defined as a regional muscular pain syndrome. The myofascial trigger points (MTpPs), as Simons and Travell¹ described, are highly localized hyperirritable spots in a palpable, taut band of skeletal muscle fibers. MPS may be the most common causes of persistent musculoskeletal pains,^{2,3} and it may cause many functional and psychiatric complications such as anxiety, depression, and loss of functional capacity.⁴

There are many treatment therapies proposed for this disease, including pharmacological and nonpharmacological interventions. Pharmacological treatments consist of anti-inflammatory, analgesic and narcotic medications which is been used for symptom control.⁵ For non-pharmacological treatment we have ultrasound

therapy,⁶ electrotherapy,⁷ stretching exercise,⁸ dry needling,⁹ acupuncture,¹⁰ local injection of botulinum toxin.¹¹ However, all the aforementioned methods just perform a function of inactivation of MTrPs, and they will recur frequently if the underlying etiological lesion is not completely removed.^{12,13}

Miniscalpel-needle, a new kind of needle with a sharp edge, was invented by a Chinese doctor named Zhu Hanzhang in 1976. It is rooted in traditional channel tendon theory,¹⁴ and its release technique combines the therapeutic role of acupuncture and microinvasive operation.⁸ It causes not only a stimulation to the acupoint but also a release of the taut band in MPS.¹⁵ Thus, it may provide successful relief of pain for a significantly long period for its release of adhesive soft tissues between the tendon sheath and the periosteum.¹⁶ To date, there are not any systematic reviews investigating the effect of MSN for MPS. The primary objective of this systematic review is to determine the evidence base for the potential therapeutic effect of MSN on MPS.

MATERIALS AND METHODS

Reference search

To review the existed evidence base for the effect of MSN on MPS, a systematic computerized search of electronic databases inception up until February 2014 was performed sequentially in PubMed, EMBASE, Cochrane Library, Chinese National Knowledge Infrastructure (CNKI), Chinese Biomedical Database (CBM) and Wanfang Med Online. The keywords searched were "Miniscalpel-needle", "needle knife", "small needle scalpel" or "acupotomy" combined with "myofascial pain syndrome", "fasciitis" or "trigger points".

Inclusion criteria

Randomized controlled clinical trials that assessed the efficacy or effectiveness of miniscalpel-needle for MPS were included. MSN combined with other interventions and compared with other interventions alone were also included. Main outcomes were pain intensity measured by VAS, effective rate measured by number of patients with improved symptoms, and range of motion (ROM).

Exclusion criteria

Animal studies, and duplication of published papers were excluded. Studies concentrated on comments were also excluded. Our initial aim was to appraise the immediate effect of MSN on MPS, so studies that looked at MSN combined with another therapy, such as cupping, compared with no treatment or other therapies were also excluded.

Data extraction and quality assessment

Study selection was screened independently by two re-

viewers based on the predetermined inclusion and exclusion criteria with disagreement resolved by discussion and adjudication. The following key information was extracted from each study: first author, publication year, study design, sample size, characteristics of participants, main acupoints/sites selected, duration and sessions of treatment, outcome measures, results reported, and adverse events.

A risk of bias assessment was conducted using the Cochrane Collaborations tool for assessing risk of bias,¹⁷ which included six aspects, namely, adequate sequence generation, allocation concealment, blinding, incomplete data, selective reporting, and other forms of bias. Two authors (Liu and Peng) completed the risk of bias assessment for each study independently, with any divergence resolved through discussion. Three levels naming low/unclear/high risk of bias were determined for each study according to Cochrane Handbook.¹⁷

Data analysis

Binary outcomes were summarized using risk ratio (RR) with 95% confidence intervals (CI) while continuous outcomes using mean difference (MD) with 95% CI. RevMan 5.0.20 software was used for data analysis. Meta-analysis was used for the trials with good homogeneity, which was assessed by examining I^2 on study design, participants, interventions, control, and outcome measures.

RESULTS

After screening and scrutinising, 8 clinical studies^{8,18-24} meet the inclusion criteria. Of the 8 studies reviewed, 6 studies¹⁹⁻²⁴ were published in Chinese and 2 studies^{8,18} in English. Data collection process was shown in Figure 1. All of the studies were parallel design. Six trials had 2 groups and 2 trials^{8,22} had 3 groups. Sample size ranged from 43 to 100. All of the studies were applied in China. Only 4 trials^{19-21,24} mentioned the diagnostic criteria of MPS. All of the researchers applied MSN on MTrPs as the intervention while the controls varied considerably. Two^{19,21} used acupuncture, one⁸ applied acupuncture and self neck-stretching exercises, one¹⁸ employed injection, one²⁰ used medication, one²² used acupuncture and blocking therapy, one²³ used medication and massage, and the last one²⁴ used acupuncture and cupping. VAS was reported in two trials,^{18,23} effective rate was reported in six trials,¹⁹⁻²⁴ and ROM was reported in two trials.^{8,18} A summary of the author, years, number of patients, age, intervention and control, intervention duration and sessions, outcome measures, result and adverse events were shown in Table 1.

Methodological quality of RCTs

According to our pre-defined methodological quality criteria, 7 trials were evaluated as unclear risk of bias and one was high risk of bias (Table 2). Three trials^{8,20,24}

Download English Version:

<https://daneshyari.com/en/article/4201114>

Download Persian Version:

<https://daneshyari.com/article/4201114>

[Daneshyari.com](https://daneshyari.com)