INPLASY PROTOCOL

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Corresponding author:
Lu Chunxia

458041899@qq.com

Author Affiliation:
The First Affiliated Hospital of Guizhou University of Chinese Medicine.

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None declared.

Clinical efficacy and safety of scraping in the treatment of Myofascial Pain Syndrome: a systematic evaluation and meta-analysis

Lu, CX[1]; Cui, J[2]; Zhang, N[3]; Xue, KY[4].

Review question / Objective: **Myofascial pain syndrome (MPS) is an acute or chronic painful disease caused by a nonspecific inflammatory response in soft tissues such as muscles, fascia, and ligaments; treatment focuses primarily on reducing pain and enhancing quality of life. Scraping is frequently used to treat MPS, and numerous clinical studies have demonstrated that it is effective in reducing MPS pain symptoms. Due to the lack of high-quality clinical evidence supporting scraping for MPS, we will conduct a systematic evaluation and meta-analysis to determine the efficacy and safety of scraping for MPS.The clinical randomized controlled studies of scraping treatment of myofascial pain syndrome were screened from the date of database activation to September 30, 2022, without language restrictions. The Cochrane Handbook was used to evaluate the quality of the included literature, and RevMan 5.3 was used to statistically analyze the data.This systematic review provides clinicians using scraping to treat MPS with reliable evidence-based research.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 15 October 2022 and was last updated on 15 October 2022 (registration number INPLASY2022100061).

INTRODUCTION

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determine the efficacy and safety of scraping for MPS.The clinical randomized controlled studies of scraping treatment of myofascial pain syndrome were screened from the date of database activation to September 30, 2022, without language restrictions. The Cochrane Handbook was used to evaluate the quality of the included literature, and RevMan 5.3 was used to statistically analyze the data.This systematic review provides clinicians using scraping to treat MPS with reliable evidence-based research.

Condition being studied: Myofascial Pain Syndrome (MPS). Regardless of the language, this study included all randomized controlled trials (RCTs) on scraping for MPS, blinded or not. The review will include randomised controlled trials (RCTs) that were reported in English or Chinese without any regional restrictions. The first period of randomised cross- over trials will be included.

METHODS

Participant or population: We will include patients fulfilled the diagnostic requirements for MPS.There are no restrictions on race, age, gender, disease duration, severity, or case origin.

Intervention: The majority of the treatment treated to the test group consisted of scraping, either alone or in conjunction with the treatment administered to the control group.

Comparator: The control group consisted of conventional treatment or alternative treatments, such as acupuncture, Chinese herbal medicine, Chinese patent medicine, western medicine, and placebo.

Study designs to be included: RCT.

Eligibility criteria: Patients fulfilled the diagnostic requirements for MPS. There are no restrictions on race, age, gender, disease duration, severity, or case origin.

Information sources: To gather RCT studies of scraping for MPS, computer searches of medical databases including The Cochrane Library, EMbase, PubMed, Web of Science, CNKI, CBM, VIP, and WanFang were conducted. The search period was from the database until 09/30/2022. The search terms included "scraping," "myofascitis," "lumbar muscle strain," "lumber fibrositis," "lumbar fascial pain syndrome," and "myofascial pain syndrome," in addition to other gray literature. The terms "myofascial pain syndrome" and "myofascial pain syndrome" were utilized, along with conference abstracts and gray literature such as papers and dissertations, and the search was broadened based on the references.

Main outcome(s): The principal outcome indicators included clinical effectiveness and the visual analog scale (VAS).

Additional outcome(s): Indicators of secondary outcome included the MOS item short from the health survey (SF-36), the Oswestry Disability Index (ODI), and adverse events.

Quality assessment / Risk of bias analysis: Using the Cochrane Collaboration Network Risk Bias Assessment Tool.

Strategy of data synthesis: Using RevMan 5.3 software, a meta-analysis was performed. The effect sizes of categorical variables were analyzed using relative risk (RR) with 95% confidence intervals. Statistical heterogeneity among the results of the studies was analyzed by I2 values. If $P > 0.1$ and $I2 < 50\%$, statistical heterogeneity among the studies' results was low and analyzed by fixed-effects model. If $P < 0.1$ and $I2 \geq 50\%$, statistical heterogeneity among the studies' results was high and was analyzed with a random-effects model. If $P < 0.1$ and $I2 > 75\%$, there was high heterogeneity between studies and no effect sizes were combined and only descriptive analyses were performed. To assess the stability of the results from the Meta-analysis, sensitivity analysis was performed on each combined analysis' results using various combined models and comparing the approach of removing the

variations in effect sizes obtained from each study item by item.

Subgroup analysis: We will employ subgroup analysis based on various interventions and controls, which will enable analysis of the sources of heterogeneity and improve the persuasiveness of the conclusions. When there is significant heterogeneity in the analysis results, based on scraping experience in clinical application, we will analyze from the following subgroups in order to explore the sources of heterogeneity:1) Analysis of scraping volume by subgroup: randomized controlled trials in which scraping was scraped until it was produced were contrasted with randomized controlled trials in which scraping was not required, with the former being expected to be more effective. 2) Subgroup analysis by session: we will compare randomized controlled trials with >4 scrapings to randomized controlled trials with ≤4 scrapings, with the expectation that the former will demonstrate greater efficacy.

Sensitivity analysis: To verify the robustness of the results of the meta-analysis, we will perform the following two sets of sensitivity analyses: ① excluding studies with high risk of bias; ② pooling data from the meta-analysis using a fixed effects model.

Country(ies) involved: China.

Keywords: Myofascial pain syndrome; Scraping; clinical efficacy; safety; systematic review; protocol.

Contributions of each author:

Author 1 - Lu chunxia.
Email: 458041899@qq.com
Author 2 - Cui Jin.
Author 3 - Zhang Ning.
Author 4 - Xue Kaiyang.