INPLASY PROTOCOL

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None declared.

Effect of ischemic compression on myofascial pain syndrome: a systematic review and meta-analysis

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Review question / Objective: **Myofascial pain syndrome is a severe and disabling pain due to the exist of trigger point in muscle. Ischemic compression is a non-invasive chiropractic technique, which was employed for treatment of MPS in past decades. However, low attention was paid in this area. Present review was designed to explore the efficacy of ischemic compression to myofascial pain syndrome through performing a descriptive systematic review and a quantitative meta-analysis, to give a quantitative evidence of pain relieving.**
Information sources: **Resources of PubMed, The Cochrane Library, Excerpta Medica database (Embase), Web of Science, Ovid Medical Literature Analysis and Retrieval System Online (OVID) were searched from earliest data up to 2022/1/2. Furthermore, some "gery" studies were retrieved by manual check of reference lists in relevant reviews, trials or conference literatures. Trials ongoing were also manual checked from website http://www.clinicaltrial.gov.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 12 April 2022 and was last updated on 12 April 2022 (registration number INPLASY202240066).

INTRODUCTION

Review question / Objective: **Myofascial pain syndrome is a severe and disabling pain due to the exist of trigger point in muscle. Ischemic compression is a non-invasive chiropractic technique, which was employed for treatment of MPS in past decades. However, low attention was paid in this area. Present review was designed to explore the efficacy of ischemic compression to myofascial pain syndrome through performing a descriptive systematic review and a quantitative meta-**

analysis, to give a quantitative evidence of pain relieving.

Condition being studied: Myofascial pain syndrome (MPS) is a type of musculoskeletal pain, which commonly occurred in muscle and surrounding fascia. MPS became an important cause of disability among the whole population, with a high prevalence to 85% in USA and estimated 10 to 15% of population worldwide. One or more trigger points founded in the related muscle and fascia is are the main characteristic of MPS. The trigger point refers to a specific sensitive zone or point, tender region or a taut band in the muscle belly. The ischemic compression is manual pressure and release of deep pressure to trigger point or approximate regions with a duration to 60-90 seconds. As an invasive trigger point therapies, ischemic compression was increasing applied for MPS treatment.

METHODS

Search strategy: Resources of PubMed, The Cochrane Library, Excerpta Medica database (Embase), Web of Science, Ovid Medical Literature Analysis and Retrieval System Online (OVID) were searched from earliest data up to 2022/1/2. The search strategy was composed of these items: (Massage OR Chiropractic OR manual therapy OR tuina OR Shiatsu OR Acupressure OR Ischemic compression OR myofascial release) AND (Myofascial pain OR Trigger point) AND (Randomized Controlled Trials OR trial OR placebo OR groups OR control OR Random*).

Participant or population: Patients confirmed diagnosis of MPS.

Intervention: Ischemic compression therapy which is alone or the primary intervention combined with usual intervention.

Comparator: Inactive comparison of sham or placebo, or active comparison using other usual intervention.

Study designs to be included: only RCTs.

Eligibility criteria: The exclusion criteria were: (1) Other chronic pain conditions without trigger point or myofascial pain. (2) Sufficient data can't be obtained from RCT for example data was shown in figures and authors can't contacted. (3) Comparison was set as another type massage or manual therapy. (4) Ischemic compression is part of physical therapy, or absence of proper control which makes ischemic compression is the only difference.

Information sources: Resources of PubMed, The Cochrane Library, Excerpta Medica database (Embase), Web of Science, Ovid Medical Literature Analysis and Retrieval System Online (OVID) were searched from earliest data up to 2022/1/2. Furthermore, some "gery" studies were retrieved by manual check of reference lists in relevant reviews, trials or conference literatures. Trials ongoing were also manual checked from website http://www.clinicaltrial.gov.

Main outcome(s): Pain is the primary outcome.

Additional outcome(s): Other indexes which reflect the quality of life or other MPS related symptoms are secondary outcomes.

Quality assessment / Risk of bias analysis: Methodological quality was assessed independently by authors using the Cochrane collaborations revised risk-of-bias tool for randomized trials (RoB 2). Following independent evaluation, discussions were held between assessors to arrive at a consensus score. In relation to the tool, five outcomes were possible for each criterion which were 'yes', 'probably yes', 'no information', 'probably no', or 'no'. Studies were rated as low risk of bias if all domains were judged to be at low risk of bias, high risk of bias if any domain was judged to be at high risk of bias, or 'some concerns' of bias if any domain was judged to have some concerns but no domain had a high risk of bias.

Strategy of data synthesis: A meta-analysis was used to combine evidence from

included RCTs when available. Revman Manager 5.3 software (Cochrane Corporation, Texas, USA) was employed for data analysis. The standard mean difference (SMD) and respective 95% confidence interval (CI)s were calculated for effect measure of continuous outcomes. I2 greater than 50% was considered significant for heterogeneity. A P value < 0.05 was considered statistically significant. Fixed or random-effects model was chosen based on clinical evidence of heterogeneity as recommended by the Cochrane handbook (https://training.cochrane.org/handbook/current/chapter-10#section-10-10-4-1).

Subgroup analysis: Subgroup analysis was planned based on subjects, ischemic compression procedures, controls and durations.

Sensitivity analysis: Sensitivity analysis was planned by moving one by one, or meta-regression.

Language: English.

Country(ies) involved: China.

Keywords: myofascial pain syndrome; ischemic compression; musculoskeletal disease.

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