INPLASY PROTOCOL

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Conflicts of interest:
None declared.

Analgesia effect of TENS on myofascial pain syndrome

Lu, X[1]; Lu, W[2].

Review question / Objective: **There are multiple interventions for management or prevention of myofascial pain syndrome including nonsteroidal anti-inflammatory drugs, meditation, stretching, massage, acupuncture. Transcutaneous electrical nerve stimulation (TENS) is a noninvasive, safe, and cost-effective modality suitable for relieving myofascial pain. However, the systematic review concerning TENS on myofascial pain syndrome was few and containing too old literatures. However, there were several RCTs concerning this topic recent years. Therefore, this study was designed to analyze the effect of TENS on myofascial pain syndrome.**
Condition being studied: **Myofascial pain syndrome is characterized by trigger points in the muscles, causing pain and decreased range of motion. Myofascial pain syndrome appears to be initiated by trauma, tension, inflammation, coldness, and other unknown factors. Myofascial pain syndrome is related to motor dysfunction, fatigue, weakness of the affected muscle, and restricted range of mobility.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 December 2021 and was last updated on 21 December 2021 (registration number INPLASY2021120090).

INTRODUCTION

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METHODS

Search strategy: #1. Transcutaneous Electric Nerve Stimulation [MeSH] | #2 TENS OR Transcutaneous Electric Nerve Stimulation OR transcutaneous electro nerve stimulation ti, ab | #3. #1 OR #2 | #4. Myofascial pain syndrome [MeSH] | #5. Myofascial pain OR myofascial trigger point tl, ab | #6. #5 OR #4 | #7. Randomized Controlled Trials OR trial OR placebo OR groups OR control OR Random* tl, ab | #8. #3 AND #6 AND #7.

Participant or population: Myofascial pain syndrome subjects.

Intervention: Transcutaneous Electric Nerve Stimulation.

Comparator: Sham operation or normal therapy.

Study designs to be included: RCTs.

Eligibility criteria: (1) RCTs. (2) The trails contained subjects with myofascial pain syndrome. (3) The controls were sham or normal therapy.

Information sources: Following electronic databases will be researched: Pubmed, Cochrane Library, Exceerpta Medica Database (EMBASE), Web of Science, Physiotherapy evidence database. Language will be limited to English. Databases will be retrieved from the earliest data available to 2021/12/10. The search strategies will be composed of these items: ("TENS" or Transcutaneous electrical nerve stimulation) AND ("myofascial pain syndrome") AND ("randomized controlled trial"). References of previous literatures, especially meta-analysis and systematic review will be fully tracked. The http://www.clinicaltrial.gov was searched for potential studies which is conducting or planed.

Main outcome(s): VAS or PPT.

Quality assessment / Risk of bias analysis: The Physiotherapy Evidence Database (PEDro) was used to assess the quality of included articles. The methodological criteria were scored as: Yes (one point), No (zero points) or Don't know (zero points). The PEDro score of each selected study provided an indicator of the methodological quality (9–10=excellent; 6–8=good; 4–5=fair; <4=poor).

Strategy of data synthesis: A systematic review and qualitative synthesis of included studies was performed. Review Manager (Revman, Version 5.3) software will be used for data analysis. For continuous variables, standardized mean difference (SMD) and 95% confidence interval (CI) were used for statistics. The heterogeneity tests of each outcome were performed using Chi-squared test and I2 statistic. When I2 < 50%, the fixed-effects model was used to perform meta-analysis. When I2 ≥ 50%, a random-effects model was used.

Subgroup analysis: The subgroup will be perfromed to explore possible reasons for statistical heterogeneity when I2>50%. when I2>50%, subgroup analyses will be performed following below items: type of TENS, location of study, duration of treatment and frequency of electricity.

Sensitivity analysis: The sensitivity analyses will be performed using moving one by one or regression analysis using Stata.

Language: English.

Country(ies) involved: P.R.China.

Keywords: TENS; Myofascial pain syndrome; VAS.

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