INPLASY PROTOCOL

To cite: Zhang et al. Effectiveness of neuromuscular electrical stimulation for endometriosis-related pain: a protocol of systematic review and meta-analysis. Inplasy protocol 202040191. doi: 10.37766/inplasy2020.4.0191

Received: 27 April 2020

Published: 27 April 2020

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Support: **MDJSTPP (Z2015S0026)**

Review Stage at time of this submission: **The review has not yet started.**

Conflicts of interest:
None.

Effectiveness of neuromuscular electrical stimulation for endometriosis-related pain: a protocol of systematic review and meta-analysis

Zhang, ZY[1]; Wang, J[2]; Fan, YL[3]; Wang, BY[4]; Zhang, WT[5].

Review question / Objective: **Is neuromuscular electrical stimulation (NMES) effective and safe for endometriosis-related pain (ERP)?**
Condition being studied: **Neuromuscular electrical stimulation, and endometriosis-related pain.**
Information sources: **Electronic databases - Seven electronic bibliographic databases including PUBMED, Cochrane Library, EMBASE, WANGFANG, VIP, CBM, and CNKI will be retrieved. All databases will be searched related the RCTs on the effectiveness and safety of NMES for ERP up to the March 31, 2020 without restrictions of language. The search strategy sample for PUBMED is presented in table 1. Similar search strategies for other electronic databases will be applied. Searching other resources - We will also search dissertations, clinical registry, and reference lists of relevant studies to avoid missing any potential studies.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 April 2020 and was last updated on 27 April 2020 (registration number INPLASY202040191).

INTRODUCTION

Review question / Objective: **Is neuromuscular electrical stimulation (NMES) effective and safe for endometriosis-related pain (ERP)?**

Condition being studied: **Neuromuscular electrical stimulation, and endometriosis-related pain**

METHODS

Participant or population: **The patients who diagnosed with ERP will be included with no restriction of race and age. All patients who had heart disease (e.g. measured by electrocardiogram test), and could not receive NMES were excluded.**

Intervention: **The studies in which the experimental group receiving NMES will be**

included with no limitations of dosage, duration, and frequency.

Comparator: Patients in the control group can be administered any therapies, except NMES.

Study designs to be included: The randomized controlled trials (RCTs) of NMES for ERP will be included in this study. However, non-RCTs and quasi-RCTs will be excluded.

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Main outcome(s): The primary outcome is pelvic pain intensity, as measured by Numeric Rating Scale or relevant scales. The secondary outcomes include dyspareunia, patient satisfaction, quality of life, electrocardiogram test, and adverse effects.

Data management: Two reviewers will independently collect data from each included trial using a pre-designed data extraction form. A third reviewer will help to solve different opinions between two reviewers regarding the data collection. We will extract the following related data: general information (title, first author, publication time and location), patient information (race, age, inclusion and exclusion criteria), study methods (sample size, randomization, blinding, and allocation), treatment details (dosage, frequency, duration), outcome measurements (all outcome measurements and safety), and other detailed information. If there is missing information, we will contact corresponding author from each primary study to obtain it.

Quality assessment / Risk of bias analysis: Two reviewers will independently assess the risk of bias for each included study using Cochrane risk of bias. It includes selection bias, performance and detection bias, attrition bias, reporting bias, and other bias. Furthermore, each one is further classified as low, unclear and high risk of bias. If there are any divergences, an arbiter will be to solve them via discussion.

Strategy of data synthesis: All statistical analysis will be carried out using RevMan 5.3 software. We will perform meta-analysis if there are sufficient studies (two or more) based on the same treatments and outcome measurements. If there is reasonable heterogeneity among included studies, we will use a fixed-effects model to pool the data. If there is significant heterogeneity among eligible studies, we will utilize a random-effect model to synthesize the data. At the same time, we will employ subgroup analysis and meta-regression test to identify the sources of substantial heterogeneity.

Subgroup analysis: Subgroup analysis will be performed in accordance with the various interventions, comparators, and outcomes if these data are available.

Sensibility analysis: The sensitivity analysis will be carried out to check the robustness and stability of pooled outcomes by removing studies with low quality, insufficient information, and different statistical models.

Country(ies) involved: China.

Keywords: Endometriosis-related pain; neuromuscular electrical stimulation; effectiveness; safety.