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INPLASY

Transcranial magnetic stimulation in the clinical application of Chronic Pelvic Pain Syndrome

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ADMINISTRATIVE INFORMATION

Support - No financial support.

Review Stage at time of this submission - Piloting of the study selection process.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2023120112

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 December 2023 and was last updated on 29 December 2023.

INTRODUCTION

Review question / Objective Overview of clinical research on the relief of pain and safety of transcranial magnetic stimulation in patients with chronic pelvic pain syndrome.

Condition being studied Chronic Pelvic Pain Syndrome (CPPS) refers to the presence of persistent or recurrent pain in the pelvic floor area for more than three months without confirmed infection or other obvious local pathological causes. It is often associated with negative cognitive, behavioral, sexual, and emotional consequences, as well as symptoms of lower urinary tract (LUT), bowel, pelvic floor, or gynecological dysfunction. In males, the global prevalence of CPPS ranges from 2% to 16%, while the prevalence in females can reach up to 24%. CPPS and other pelvic floor functional disorders can severely impact patients' social activities and quality of life, leading to feelings of inferiority and depression, thereby increasing family and societal pressure. The estimated annual cost of treating CPPS is approximately 880 million dollars.

METHODS

Participant or population Research involving human subjects, involving transcranial magnetic stimulation, chronic pelvic pain without pathological explanation.

Intervention Transcranial magnetic stimulation is a non-invasive and painless neuroregulation technique that uses depolarization or hyperpolarization of neuronal membranes to induce action potentials and regulate their excitability. Since the initial experiments, researchers have evaluated transcranial magnetic

stimulation for the treatment of a range of symptoms related to pelvic pain.

Comparator Not applicable.

Study designs to be included We conducted a search for clinical trials on the treatment of chronic pelvic pain with transcranial magnetic stimulation using computer and manual retrieval methods from the PubMed, EMBASE, and Cochrane Library databases. The search spanned from the establishment of the databases to December 2023. The main outcome measures included pain intensity and safety. After removing duplicate publications using Endnote software, two researchers independently screened the studies according to the criteria. Any discrepancies were resolved through discussion, and non-English literature was excluded.

Eligibility criteria Inclusion criteria: (1) Original articles; (2) Studies involving human subjects; (3) Articles in English; (4) Involving transcranial magnetic stimulation; (5) Chronic pelvic pain without pathology that can explain it.Exclusion criteria: (1) Book chapters, commentaries, meta-analyses, systematic reviews, letters to the editor, and comments; (2) Articles where transcranial magnetic stimulation is not used as a treatment option; (3) Articles lacking pain treatment outcomes, even if these subjects are included in the study, should be excluded; (4) Participants under 18 years old.

Information sources PubMed, EMBASE, and Cochrane Library databases.

Main outcome(s) Pain relief is assessed through description or scoring; safety is assessed through description or data.

Quality assessment / Risk of bias analysis Two reviewers will independently assess risk of bias based on the following domains from recommendations from the Cochrane handbook: 1. Adequate sequence generation; 2. Allocation concealment; 3. Blinding; 4. Incomplete outcome data and how it was addressed; 5. Selective reporting of the outcome; 6. Any other biases. results of bias assessment will be presented in a figure and a graph indicating low, high or unclear risk of bias for each of the 6 items in each trial. Sensitivity analysis will be conducted based on the bias assessment to assess robustness of results.

Strategy of data synthesis Based on previous literature searches, it is expected that these studies are not only diverse in their therapeutic intervention parameters, but also heterogeneous in the dimensions of effect measurement. Therefore, it was decided in advance that these circumstances do not allow for a reasonable and convincing quantitative meta-analysis; instead, a narrative synthesis of the study results was conducted. They were grouped and summarized based on the applied therapeutic parameter models, and the treatment effects were described.

Subgroup analysis According to the site of transcranial magnetic stimulation and the stimulation frequency, subgroup analysis will be conducted.

Sensitivity analysis The intervention parameters are different, and stratified analysis is used to explore whether there is an interaction effect that influences the main analysis results, that is, to study whether the results are robust through stratified analysis.

Country(ies) involved China.

Keywords Transcranial magnetic stimulation, pelvic pain, chronic prostatitis pain, perineal pain, anal and rectal pain, prostatitis.

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