

INPLASY

Safety and efficacy of McKenzie therapy combined with Acupuncture for Non-specific low back pain: A systematic review and meta-analysis

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Zeng, MJ¹; Gong, AM²; Liang, JY³; Wu, ZQ⁴.

Corresponding author:

Zhiquan Wu

wzq12900@163.com

Author Affiliation:

Sanya Central Hospital.

ADMINISTRATIVE INFORMATION

Support - Hainan Medical University.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 01 December 2023 and was last updated on 01 December 2023.

INTRODUCTION

Review question / Objective In the treatment of non-specific low back pain (NS-LBP), how effective is McKenzie therapy combined with acupuncture (Electro-acupuncture) in improving pain and quality of life?

Condition being studied We searched 6 databases and included randomized controlled trials (RCTs) comparing acupuncture (Electro-acupuncture) or McKenzie therapy alone for NS-LBP from January 2002 to September 2022.

METHODS

Search strategy We searched 6 databases and included randomized controlled trials (RCTs) comparing acupuncture (Electro-acupuncture) or McKenzie therapy alone for NS-LBP from January 2002 to September 2022.

Participant or population (1) randomized controlled trials (RCTs); (2) population ≥ 18 years old; (3) with non-specific LBP (chronic or not); (4) evaluation of at least one of our main clinically relevant outcomes (i.e., Visual Analogue Scale (VAS), Roland-Morris and Oswestry Low Pain Back Disability Index (ODI); and (5) studies including McKenzie therapy combined with Acupuncture (electro-acupuncture).

Intervention McKenzie therapy combined with Acupuncture.

Comparator McKenzie therapy or Acupuncture.

Study designs to be included We searched 6 databases and included randomized controlled trials (RCTs) comparing acupuncture (Electro-acupuncture) or McKenzie therapy alone for NS-LBP from January 2002 to September 2022. We assessed risk of bias with the original Cochrane

tool certainty of evidence and the results were pooled through meta-analysis.

Eligibility criteria We excluded those studies which assessed patients with specific LBP (i.e., caused by a specific cause such as pregnancy or pathological entities)¹³. Conference papers, congress, and seminars were excluded. Two authors (MJ and JY) conducted the literature searches, reviewed the abstracts and, based on the selection criteria, determined the suitability of the articles for inclusion, and extracted the data. Animal studies were excluded.

Information sources Preliminary search identified 90 potential related papers. The flow of papers through the qualification review process is shown in Figure 1, including the reasons for the exclusion of papers in each stage of the process. We searched 50 full-text studies and further determined why 29 articles were removed. And 1 article included in qualitative synthesis are excluded. Finally, 5 articles^{18,19,20,21,22} participated in the Meta-analysis.

Main outcome(s) Clinical efficacy rate, Visual Analogue Scale (VAS), Roland-Morris and Oswestry Low Pain Back Disability Index (ODI).

Quality assessment / Risk of bias analysis Two authors (JY and AM) independently assessed risk of bias according to the criteria set out in the Cochrane Handbook for Systematic Reviews of Interventions.¹⁴ The following criteria were considered: sequence generation and allocation concealment, blinding of participants and providers, blinding of outcome assessors, incomplete outcome data, and selective outcome reporting. Disagreement between reviewers was resolved by discussion.

Strategy of data synthesis We analyzed dichotomous outcomes by calculating the risk ratio (RR) for each trial with the uncertainty in each result being expressed with a 95% confidence interval (CI). And used the standardized mean difference (SMD) when the studies used different instruments. We interpreted SMD values with the classification proposed by Cohen¹⁵ where an effect size of 0.2 means a small effect, 0.5 means a medium effect, 0.8 means a large effect¹⁶. As we supposed a certain degree of heterogeneity among studies, due to treatment schedules, way in assessing response criteria, risk of bias and other factors which may have affected direction and magnitude of treatment effect, we pooled data used the random effect model for each outcome¹⁶. Seeking statistical heterogeneity

among studies, the Cochrane Q-test was performed, with a significant threshold of $\alpha = 0.1$ and inconsistency among studies was quantified by the I-squared statistic;¹³ an I square $>70\%$ was judged a significant heterogeneity¹⁷. All data synthesis was conducted with RevMan version 5.4.

Subgroup analysis No.

Sensitivity analysis No.

Country(ies) involved China.

Keywords Mackenzie therapy; Acupuncture; Non-specific low back pain; Systematic review.

Contributions of each author

Author 1 - Mengjie Zeng.

Email: oyzmj1290@163.com

Author 2 - Aimin Gong.

Author 3 - Jinying Liang.

Author 4 - Zhiquan Wu.