INPLASY PROTOCOL

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The effect of ultrasound therapy on lateral epicondylitis: A meta-analysis

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Review question / Objective: Lateral epicondylitis (LE) is a common musculoskeletal disorder, and ultrasound therapy is one of the most used treatments in the clinic. The effect remains uncertain, and the present paper aims to figure it out with a meta-analysis.

Condition being studied: Lateral epicondylitis (LE).

Eligibility criteria: Papers were included if they meet the following criteria: (1) participants were 18 years of age or older; (2) participants were diagnosed with tennis elbow for at least one month; (3) the outcomes like pain (VAS), grip strength, or functional assessment were reported; (4) cohort study design. The exclusion criteria were as follows: (1) Studies nor reporting the outcomes of interest; (2) Studies nor reporting the outcomes of matched time points; (3) Outcomes not reporting as mean ± SD.

INTRODUCTION

Review question / Objective: Lateral epicondylitis (LE) is a common musculoskeletal disorder, and ultrasound therapy is one of the most used treatments in the clinic. The effect remains uncertain, and the present paper aims to figure it out with a meta-analysis.

Condition being studied: Lateral epicondylitis (LE).

METHODS

Participant or population: Lateral epicondylitis patients.

Intervention: Ultrasound therapy.

Comparator: Conservative treatment.

Study designs to be included: Cohort study.

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Information sources: The Pubmed, Cochrane, and Medline databases were searched.

Main outcome(s): VAS.

Quality assessment / Risk of bias analysis: The methodological quality of the included studies was assessed by the Quality Index, which consisted of 27 items distributed between five sub-scales. The risk of publication bias was assessed using Egger's test.

Strategy of data synthesis: The statistical analysis was performed using the special meta-analysis software named "Comprehensive Meta-Analysis (CMA)''. Continuous variables were compared by calculating the standard difference of the means (SDM). All the results were presented as forest plots. A p-value of less than 0.05 was considered statically significant, and a 95% confidence interval was given for each effect size. Heterogeneity is calculated with the I2 statistic, ranging from 0% (complete consistency) to 100% (complete inconsistency). The random-effects model was used if the heterogeneity was significant; otherwise, a fixed-effects model was used. To test the stability of the results, we conducted a sensitivity analysis by omitting each study.

Subgroup analysis: The statistical analysis was performed using the special meta-analysis software named Comprehensive Meta-Analysis (CMA)". Continuous variables were compared by calculating the standard difference of the means (SDM). All the results were presented as forest plots. A p-value of less than 0.05 was considered statically significant, and a 95% confidence interval was given for each effect size. Heterogeneity is calculated with the I2 statistic, ranging from 0% (complete consistency) to 100% (complete inconsistency). The random-effects model was used if the heterogeneity was significant; otherwise, a fixed-effects model was used. To test the stability of the results, we conducted a sensitivity analysis by omitting each study.

Sensitivity analysis: The statistical analysis was performed using the special meta-analysis software named "Comprehensive Meta-Analysis (CMA)''. Continuous variables were compared by calculating the standard difference of the means (SDM). All the results were presented as forest plots. A p-value of less than 0.05 was considered statically significant, and a 95% confidence interval was given for each effect size. Heterogeneity is calculated with the I2 statistic, ranging from 0% (complete consistency) to 100% (complete inconsistency). The random-effects model was used if the heterogeneity was significant; otherwise, a fixed-effects model was used. To test the stability of the results, we conducted a sensitivity analysis by omitting each study.

Country(ies) involved: China.

Keywords: lateral epicondylitis; tennis elbow; ultrasound therapy.

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