

INPLASY

A systematic review of the effect of innovative acupuncture on pain and inflammatory factors in patients with knee arthritis

INPLASY202440037

doi: 10.37766/inplasy2024.4.0037

Received: 08 April 2024

Published: 08 April 2024

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ADMINISTRATIVE INFORMATION

Support - None.

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

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202440037

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 08 April 2024 and was last updated on 08 April 2024.

INTRODUCTION

Review question / Objective A systematic review of the effect of innovative acupuncture on pain and inflammatory factors in patients with knee arthritis.

Condition being studied Knee Osteoarthritis (KOA) is an aseptic inflammation, which is a degenerative disease of the joints caused by the degeneration of articular cartilage, osteophytic hyperplasia and degeneration. The main symptoms of KOA include movement disturbance of the knee joint, local pain, stiffness and swelling, and even local deformation of the knee joint, etc., which has an important impact on the quality of life and physical and mental health of patients [1]. With the aging of the population, the incidence of KOA is increasing in the world, and the prevalence rate of people over 60 years old reaches 12%~35%[2].

The total prevalence of KOA in China is 8.1%, the prevalence of people over 65 years old is 50%, and the prevalence of people over 75 years old is as high as 80%[3]. How to effectively treat all kinds of problems caused by knee osteoarthritis need to be solved.

METHODS

Participant or population Patients with knee osteoarthritis who meet the diagnostic criteria of bone arthralgia [17] in the Guidelines for Diagnosis and Treatment of Osteoarthritis (2018 Edition) [16] or the Criteria for Diagnosis and Efficacy of TCM Diseases [17].

Intervention Experimental group was innovative acupuncture.

Comparator The control group was treated with traditional therapy.

Study designs to be included RCT.

Eligibility criteria (1) Reviews, reviews, animal experiments, repeated publications, etc.; (2) Literature with unclear description of experimental data, incomplete data, unable to obtain original data after contacting the author, unable to transform data, and poor quality assessment; (3) the subject has other physical diseases; (4) Literature with unclear diagnostic criteria or intervention protocols.

Information sources Following the PICOS principle, randomized controlled trials on the effects of innovative acupuncture on pain and inflammatory factors in patients with knee arthritis were included. Literature published in PubMed, Web of Science, Embase, The Cochrane Library, CNKI, Wang Fang and VIP databases from the establishment of the databases to July 2023 were searched.

Main outcome(s) Main outcome measures: WOMAC score and VAS score.

Additional outcome(s) Secondary outcome measures: inflammatory cytokines IL-1 β , TNF- α .

Quality assessment / Risk of bias analysis The bias risk assessment tool of Cochrane Systematic Review Manual 5.1.0 [18], an internationally recognized and widely used tool for literature quality evaluation, was used to conduct methodological evaluation of acupuncture intervention in knee RCT. Two researchers used the Cochrane Handbook of Systematic Reviews 5.1.0 bias risk assessment tool to independently evaluate the quality of the included literature, including random sequence generation, assignment hiding, implementer and participant blinding, outcome evaluator blinding, outcome data integrity, selective reporting of study results, and other bias. For each item, the risk of bias is low, the risk of bias is unclear, and the risk of bias is high. If 7 items are not satisfied at all, the probability of bias is higher, which is grade C. The quality rating was conducted independently by two researchers, and if there was any disagreement, the third researcher would discuss it together. The evaluation of evidence quality [19] was completed by GRADE software, and the evaluation of evidence quality of outcome indicators included five downgrading factors: publication bias, inconsistency, inaccuracy, incoherence and limitations of the study. Among them, level 3 is

very low level evidence, level 2 is low level evidence, level 1 is intermediate evidence, and it is not downgraded to high level evidence. Finally, the evidence level is divided into four levels: high level, intermediate level, low level and very low level.

Strategy of data synthesis The Reviewer Manager 5.4 software was used for effect size combination, subgroup analysis, heterogeneity test and sensitivity analysis, and Stata17.0 was used for publication bias test. All the outcome indicators included in this paper were continuous variables. The measurement data were mean difference (MD) with no significant difference at baseline. The end values (mean \pm standard deviation, $M \pm SD$) of the experimental group and the control group after intervention were used as the main effect parameters. If the document only provides changes, the Review Manager 5.4 computer is used for estimation. Heterogeneity test was performed using P-value and I². If there was no statistical heterogeneity among the findings (I² 0.10), the fixed effects model was used for meta-analysis; otherwise, the random effects model was used. If statistical heterogeneity exists, the causes of heterogeneity are analyzed. If there is clinical heterogeneity, subgroup analysis or sensitivity analysis can be performed according to its source. If there was no significant clinical heterogeneity, a random effects model was used for meta-analysis. If the heterogeneity was too large, descriptive analysis was performed. Descriptive analysis is performed if the metrics cannot be merged.

Subgroup analysis Age, acupoint, technique, duration, cycle.

Sensitivity analysis In order to explore whether the heterogeneity between studies is caused by a single study, this study analyzed the sensitivity of the innovative acupuncture method with high heterogeneity to the function and pain of knee arthritis, and analyzed the combined effect by eliminating individual studies one by one.

Country(ies) involved China.

Keywords innovative acupuncture; pain; knee arthritis; inflammatory factors; systematic review.

Contributions of each author

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