

INPLASY

Acupuncture for overuse injuries in cyclists: Protocol for a systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Preliminary searches.

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 13 December 2023 and was last updated on 13 December 2023.

INTRODUCTION

Review question / Objective Is acupuncture treatment effective for the overuse injuries in cyclists?

Condition being studied Because of repetitive microdamage eliciting pain in the affected tissue, cyclists could suffer from overuse injuries. The lower extremities and lumbar spine are the most common areas of injury for cyclists. Overuse injuries in cyclists include lower extremity pain such as patellofemoral pain syndrome, patellar tendinosis, quadriceps tendinosis, iliotibial band friction syndrome and plantar fasciitis; and low back pain such as lumbar strains, intervertebral discogenic pain, and lumbar facet syndrome. Some diseases are not solely caused by overuse of cyclists, but can also be caused by a variety of other things. Therefore, in this study, we would like to examine the effectiveness of acupuncture treatment for diseases caused by overusing in cyclists.

METHODS

Search strategy The search databases used include Central, Medline, EmBase, AMED, ClinicalTrials.gov, CNKI, and Wanfang. The search strategy involves using bicycle-related keywords (including MeSH term 'bicycle/in') and various overuse injuries (such as iliotibial band syndrome), and keywords related to acupuncture treatment. Examples of searching terms for MEDLINE (via Ovid) is following:

- 1 bicycling/in
- 2 patellofemoral pain.ti,ab,kf.
- 3 patellar tendin*.ti,ab,kf.
- 4 quadriceps tendin*.ti,ab,kf.
- 5 iliotibial band.ti,ab,kf.
- 6 pes anseri* bursitis.ti,ab,kf.
- 7 achilles tendin*.ti,ab,kf.
- 8 plantar fasciitis.ti,ab,kf.
- 9 metatarsalgia.ti,ab,kf.
- 10 External Iliac Artery Endofibrosis.ti,ab,kf.
- 11 Pudendal Neuralgia.ti,ab,kf.
- 12 Lumbar Strain*.ti,ab,kf.
- 13 Lumbar sprain*.ti,ab,kf.

14 intervertebral discogenic.ti,ab,kf.
 15 lumbar facet syndrom*.ti,ab,kf.
 16 radiculopath*.ti,ab,kf.
 17 radicular pain*.ti,ab,kf.
 18 or/1-17
 19 exp Acupuncture Therapy/
 20 exp Acupuncture/
 21 exp Meridians/
 22 meridian*.tw,kf.
 23 exp electroacupuncture/
 24 dry needl*.tw,kf.
 25 acupuncture.tw,kf.
 26 trigger points/
 27 trigger point*.tw,kf.
 28 or/19-27
 29 18 AND 28.

Participant or population Individuals engaging in bicycle exercise, regardless of their level of bicycle exercise, who have been diagnosed with injuries that may arise due to overuse, such as Iliotibial band syndrome.

Intervention The intervention includes acupuncture treatments such as dry needling, electroacupuncture, acupotomy, and trigger point needling. However, methods involving the injection of drugs into the body, such as cat-gut embedding and pharmacopuncture, are excluded.

Comparator The control group will consist of a placebo group, such as sham acupuncture, a conservative treatment group using analgesics and extracorporeal shock wave therapy, a surgical intervention group, and a no-treatment group (wait list).

Study designs to be included Randomized controlled trial of acupuncture in treatment of overuse injuries in cyclists.

Eligibility criteria The study will not exclude based on the number of participants in the experiment.

Information sources The search databases used include Central, Medline, EmBase, AMED, ClinicalTrials.gov, CNKI, and Wanfang. If there is missing information necessary for meta-analysis or for evaluating the risk of bias, the authors will be contacted via email to request the relevant information.

Main outcome(s) Pain, functionality, duration of treatment.

Quality assessment / Risk of bias analysis Two independent reviewers will assess the risk of bias in the analyzed studies using the Revised

Cochrane risk-of-bias tool. The evaluation will cover bias arising from the randomization process, bias due to deviations from intended interventions, bias due to missing outcome data, bias in the measurement of the outcome, and bias in the selection of the reported result.

Strategy of data synthesis The primary outcome for this study is set as the pain level at the treatment completion point, while pain, functionality, and duration of treatment during the follow-up period are assessed as secondary outcomes. The heterogeneity of included studies will be evaluated using the I² test. Given the diverse range of studies analyzing various conditions related to overuse injuries, it is anticipated that the heterogeneity across studies will be high. Therefore, regardless of the I² test results, a random-effects model will be employed for the analysis.

Subgroup analysis Subgroup analysis will be conducted for each specific disease corresponding to overuse injuries.

Sensitivity analysis An attempt will be made to include or exclude studies that may have ambiguity in meeting the inclusion criteria. Sensitivity analysis will then be conducted by evaluating the impact of methodologically low-quality studies.

Country(ies) involved South Korea.

Keywords Overuse injury; Cyclist; Bicycling; Acupuncture; Systematic review; Meta-analysis.

Contributions of each author

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