

INPLASY PROTOCOL

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**Review Stage at time of this
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Conflicts of interest:
None.

Outcome Comparison of Rehabilitation, Open Operation and Endoscopic Surgery on Treatment of Avulsion Fracture of Lateral Malleolus, a Systematic Review

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Review question / Objective: Participants: patients with avulsion fracture of lateral malleolus; Interventions: either open operation or endoscopic surgery; Comparators: rehabilitation; Outcomes: AOFAS, VAS, Karlsson scores, anterior talar translation and talar tilt angle.

Condition being studied: For the patients with avulsion fracture of lateral malleolus, there are mainly three treatment methods: open operation, endoscopic surgery and rehabilitation. However, there is still no conclusion on the choice of treatment methods. Furthermore, it is absent of data to support the efficacy of different treatment methods.
Information sources: The information from included studies mentioned earlier. And study investigators will be contacted for unreported data.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 11 May 2020 and was last updated on 11 May 2020 (registration number INPLASY202050042).

INTRODUCTION

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Condition being studied: For the patients with avulsion fracture of lateral malleolus, there are mainly three treatment methods: open operation, endoscopic surgery and rehabilitation. However, there is still no conclusion on the choice of treatment methods. Furthermore, it is absent of data to support the efficacy of different treatment methods.

METHODS

Search strategy: Using the following databases: the OVID search engine, Pubmed, Cochrane Library, Cinahl, EBSCO.

Participant or population: Patients with avulsion fracture of lateral malleolus.

Intervention: Either open operation or endoscopic surgery.

Comparator: Rehabilitation.

Study designs to be included: We will include randomised trials, observational studies (including cohort and case series studies) to assess the outcomes of the treatments.

Eligibility criteria: Studies were included when they met all of the following criteria: (1) patients with avulsion fracture of lateral malleolus, (2) undergoing rehabilitation, open operation or endoscopic surgery, (3) minimum follow-up of 12 months, and (4) assessed by at least 1 of the following measurements: American Orthopaedic Foot and Ankle Society (AOFAS) ankle-hindfoot functional scores, Karlsson scores, visual analogue scale (VAS), talar tilt angle, and anterior talar translation. Studies were excluded when they met either of the following criteria: (1) studies without sufficient information to make a judgment, (2) studies with less than 10 patients, (3) studies that included duplicate samples, or (4) full text were not available.

Information sources: The information from included studies mentioned earlier. And study investigators will be contacted for unreported data.

Main outcome(s): Change in depression score from baseline to the last available follow-up, measured using the AOFAS questionnaire. Assessing the therapeutic effect.

Data management: Two people will extract and check received data. Data will be recorded in an excel spreadsheet. Endnote will be used.

Quality assessment / Risk of bias analysis: Treatment allocation, selection, comparability and outcomes will be assessed. Assessment will be done at study. Methodological Index for Nonrandomized Studies (MINORS) will be used. 2 authors will assess eligible studies independently. In case of inconsistencies, the data were assessed by a third independent researcher to reach a consensus.

Strategy of data synthesis: Including at least 10 cases. Mean and SD scores of outcomes of baseline and the last available follow-up will be synthesised and combined using independent sample T-analysis by SPSS.

Subgroup analysis: Open operation group and endoscopic surgery group.

Sensibility analysis: None.

Country(ies) involved: China.

Keywords: avulsion fracture, open operation, endoscopic surgery, rehabilitation, treatment.

Contributions of each author:

Author 1 - Wen-Kai Xuan.

Author 2 - Teng-Jia Ma.

Author 3 - Ying-Hui Hua.