

INPLASY

Systematic Review and Meta-analysis of Efficacy and Safety of Transarterial Embolization for Chronic Refractory Achilles Tendinopathy

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ADMINISTRATIVE INFORMATION

Support - Review has no funding and no agreed support from an academic institution and is done in authors' own time. Peer review.

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

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202680059

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 15 August 2026 and was last updated on 15 August 2026.

INTRODUCTION

Review question / Objective Synthesize the current evidence on the effectiveness and safety of TAE for chronic refractory Achilles tendinopathy, including changes in pain, functional outcomes, clinical success, and treatment-related complications.

Rationale Transarterial embolization (TAE) has shown promising results for chronic refractory Achilles tendinopathy. However, the currently available evidence is limited to small-scale studies, and large prospective studies or head-to-head comparative studies are lacking. This systematic review and meta-analysis aims to synthesize the current evidence on the effectiveness and safety of TAE for Achilles tendinopathy, including changes in pain, functional outcomes, clinical success, and treatment-related complications. The review will provide a more precise estimate of treatment

effects and help clarify the potential role of TAE in the management of refractory Achilles tendinopathy.

Condition being studied Effectiveness and safety of TAE for chronic refractory Achilles tendinopathy, including changes in pain, functional outcomes, clinical success, and treatment-related complications.

METHODS

Search strategy Only published English studies will be sought.

The main databases to be searched are CENTRAL – Cochrane Central Register of Controlled Trials, Embase – Embase via Ovid, Embase.com, PubMed and Scopus.

Participant or population (1) Human clinical trials
(2) Adult participants

- (3) Achilles tendinopathy confirmed by clinical and radiologic assessment
 (4) Symptoms that lasted for more than 3 months and refractory to conservative management.

Intervention Transarterial embolization.

Comparator This review does not have any comparator(s) or control(s).

Study designs to be included Randomized control trials, non-randomized cohorts, prospective/retrospective series.

Eligibility criteria Exclusion criteria:

- (1) Case report or case series ($n < 10$).

Information sources Only published studies will be sought. The main databases to be searched are CENTRAL – Cochrane Central Register of Controlled Trials, Embase.com, PubMed. Other studies will be identified by: contacting authors or experts, looking through all the articles that cite the papers included in the review ("snowballing" or forward citation searching), reference list checking (backward citation searching), searching conference proceedings, searching dissertation and thesis databases and searching trial or study registers.

Main outcome(s) Pain assessment (VAS/NRS) at 1 day, 1, 3, 6 and 12 months.

Additional outcome(s) Functional and pain assessment (VISA-A) at 6 month, technical success, clinical success, complications, re-intervention.

Data management Formal synthesis is planned.

Quality assessment / Risk of bias analysis Risk of bias for the included studies will be assessed using the ROBINS-I tool.

Strategy of data synthesis A meta-analysis will be executed if the included data exhibit sufficient homogeneity. Under a REML-based random-effects model, continuous outcomes (e.g., pain and functional scores) will be pooled as mean differences (MD) or standardized mean differences (SMD), while dichotomous data (e.g., adverse events, clinical success) will be synthesized as proportions or risk ratios. Statistical heterogeneity will be evaluated utilizing Cochran's Q test, alongside I^2 , and τ^2 statistics, supplemented by sensitivity and subgroup analyses to investigate potential variability. Should quantitative synthesis

prove unfeasible, the results will be detailed through a structured narrative synthesis.

Subgroup analysis Subgroup analysis will not be used.

Sensitivity analysis Statistical heterogeneity will be evaluated using Cochran's Q, I^2 , and τ^2 statistics, and sensitivity and subgroup analyses will explore variability across studies. Where meta-analysis is not feasible, results will be presented as a structured narrative synthesis.

Language restriction English.

Country(ies) involved Taiwan(R.O.C.).

Keywords Achilles Tendinitis; Transarterial Embolization; Efficacy; Safety.

Dissemination plans The findings from the INPLASTY Registry will be disseminated through presentations at national and international scientific meetings and publications in peer-reviewed medical journals. Results may also be shared with participating investigators and relevant healthcare professionals to support clinical practice and future research. All disseminated data will be presented in aggregate form, and no information that could identify individual participants will be disclosed.

Contributions of each author

Author 1 - ZhaoYu Hsieh - Author 1 conceived the study and designed the search protocol, conducted the statistical analysis. and wrote the first draft of the manuscript.

Author 2 - Jian-Ling Chen.

Author 1 and author 2 performed literature screening and data extraction independently. All authors contributed to critical revision and final approval of the submitted version.

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