INPLASY

Efficacy of Radiofrequency Ablation in the Treatment of Discogenic Low Back Pain: A Single-Arm Meta-Analysis

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Efficacy of Radiofrequency Ablation in the Treatment of Discogenic Low Back Pain: A Single-Arm Meta-Analysis.

ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202530005

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 1 March 2025 and was last updated on 1 March 2025.

INTRODUCTION

Review question / Objective We aimed to analyze all published studies using Radiofrequency Ablation for the treatment of discogenic low back pain and summarize the evidence-based medical evidence for the effectiveness of this treatment for discogenic low back pain.

Condition being studied The team consists of 2 medical professors and 1 medical doctor, with strong scientific research ability, and I can complete this work full-time.

METHODS

Participant or population Patient with discogenic low back pain.

Intervention Radiofrequency Ablation.

Comparator This study was a single-arm meta-analysis, the incidence rate was not controlled, and the pain score was compared before and after treatment.

Study designs to be included Randomized controlled trial and Prospective single-arm study.

Eligibility criteria 1. Recurrent lower back pain with a course of more than 3 months; 2. No lumbar spondylolisthesis, spondylolisthesis and lumbar instability were found in X-ray examination; 3. CT scan showed no lumbar disc herniation, lumbar spinal stenosis and other abnormalities; 4. MRI examination showed that the lesioned intervertebral disc nucleus pulposus showed low signal changes in T2-weighted images; 5. Lumbar intervertebral disc angiography showed rupture of the annulus fibrosus. Induced reproduction of the same lower back pain as in the past. At the same time, the above five points were met, and the diagnosis was discogenic low back pain.

Information sources English databases included PubMed, Embase, Cochrane Library and

ClinicalTrials database, while Chinese databases included CBM, CNKI, VIP and WangFang.

Main outcome(s) VAS (Visual Analogue Scale) , ODI (Oswestry Disability Index) , NRS (Numeric Rating Scale) , RMDQ (Roland-Morris Disability Questionnaire) , and SF-36 (Medical Outcomes Study 36-Item Short-Form Health Survey) before and after the surgery.

Quality assessment / Risk of bias analysis The quality of randomized controlled trials in this study was assessed using the Cochrane Risk of Bias Assessment Tool and the Jadad Scoring Scale (modified version). Non-randomized controlled trials were evaluated using the Newcastle Ottawa Scale (NOS)scale.

Strategy of data synthesis All statistical analyses were performed with Review Manager v.5.4 (The Cochrane Collaboration, Software Update, Oxford, United Kingdom).The incidence rate (odds ratio, OR) was calculated by analyzing dichotomous variables, and the interval estimation was expressed using 95% confidence interval (CI) with the conversion formula: incidence = OR/(1+OR), LL (lower limit) = LLOR/(1+LLOR), and UL (upper limit) = ULOR/(1+ULOR). The standardized mean difference (SMD) was calculated for continuous variables, and interval estimates were expressed using 95% CI, with P 50%. The test level of Meta-analysis was α = 0.05.All statistical analyses were performed with Review Manager v.5.4 (The Cochrane Collaboration, Software Update, Oxford, United Kingdom).

Subgroup analysis None.

Sensitivity analysis Sensitivity analysis was performed in the revman software to reflect the sensitivity of the articles by the change in effect size after the removal of one of the articles.

Country(ies) involved China.

Keywords Discogenic low back pain; Radiofrequency Ablation; Pain score;Life quality; Disability Index.

Contributions of each author
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