

INPLASY PROTOCOL

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Review Stage at time of this submission: Data analysis.

Conflicts of interest:
None declared.

INTRODUCTION

Review question / Objective: Exploring the Efficacy and Safety of Percutaneous Transforaminal Endoscopic Discectomy (PTED) in the Treatment of Giant Lumbar Disc Herniation (GLDH).

The Efficacy and Safety of Percutaneous Transforaminal Endoscopic Discectomy (PTED) in the Treatment of Giant Lumbar Disc Herniation (GLDH): a Meta-Analysis and Systematic Review

Hu, HL¹; Ge, BH²; Li, YS³.

Review question / Objective: Exploring the Efficacy and Safety of Percutaneous Transforaminal Endoscopic Discectomy (PTED) in the Treatment of Giant Lumbar Disc Herniation (GLDH).

Condition being studied: Giant Lumbar Disc Herniation (GLDH) is a subtype of LDH and is also relatively rare in clinical cases. In clinical cases, middle-aged and elderly patients are also the main group, but in recent years, the affected population has also tended to become younger. Patients with GLDH usually have a large protrusion of the nucleus pulposus. CT and MRI imaging shows that the protrusion of the nucleus pulposus extends beyond the posterior inferior margin of the superior and posterior superior margin of the lower vertebral body, and the protrusion exceeds 50% or more of the spinal canal diameter (sagittal diameter), without accompanied by ossification.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 19 May 2023 and was last updated on 19 May 2023 (registration number INPLASY202350073).

Condition being studied: Giant Lumbar Disc Herniation (GLDH) is a subtype of LDH and is also relatively rare in clinical cases. In clinical cases, middle-aged and elderly patients are also the main group, but in recent years, the affected population has also tended to become younger. Patients with GLDH usually have a large protrusion of the nucleus pulposus. CT and MRI imaging shows that the protrusion of the

nucleus pulposus extends beyond the posterior inferior margin of the superior and posterior superior margin of the lower vertebral body, and the protrusion exceeds 50% or more of the spinal canal diameter (sagittal diameter), without accompanied by ossification.

METHODS

Participant or population: Patient with GLDH.

Intervention: PTED.

Comparator: No.

Study designs to be included: Single-arm or multi-arm clinical trials.

Eligibility criteria: Inclusion criteria: (1) Patients with giant disc herniation; (2) Percutaneous intervertebral foramen endoscopic surgery; (3) Reported preoperative and postoperative data. Exclusion criteria: (1) Patients with tumors or infections; (2) Patients with a history of cervical and thoracic spine surgery; (3) Patients with other types of intervertebral disc herniation; (4) Surgical treatment with intervertebral disc endoscopy technology; (5) Research that did not provide complete data; (6) Literature with low quality.

Information sources: Using seven databases including Web of Science, PubMed, Cochrane Library, EBSCO, CNKI, VIP, and Wanfang for literature retrieval; Search time: From the year of inclusion to December 31, 2022; Percutaneous Transforaminal Endoscopic Discectomy (PTED) 、 Percutaneous Endoscopic Lumbar Discectomy (PELD) 、 Percutaneous endoscopic interlaminar discectomy (PEID) 、 Giant lumbar disc herniation (GLDH) 、 Free lumbar disc herniation (FLDH) .

Main outcome(s): ① Visual Analogue Scale (VAS); ② The Oswestry Disability Index

(ODI); ③ Japanese Orthopaedic Association Scores (JOA); ④ MacNab score (excellent/poor); ⑤ Straight leg lift angle; ⑥ Intraoperative safety: dural sac damage, nerve root compression.

Quality assessment / Risk of bias analysis:

Two independent researchers evaluated using the MINORS scale, which is particularly suitable for clinical research evaluation. There are a total of 12 items in the scale (the first eight items are applicable to non randomized studies), with each item scoring 0-2 points. A score of 0 indicates not reported, 1 indicates reported but insufficient information, and 2 indicates reported and provided sufficient information. The total score is 24 points.

Strategy of data synthesis: Use Stata 14.0 for statistical data analysis. The included data are all continuous variables or econometric data, expressed as mean \pm standard deviation (Mean \pm SD), and MD is the effect quantity (95% CI). Use chi square test (Chi²) to evaluate the heterogeneity between the combined effects of outcome indicators. Using a random effects model, if $P > 0.1$ and $I^2 < 50\%$, it indicates homogeneity among the included studies; If $P < 0.1$ and $I^2 \geq 50\%$, it indicates significant heterogeneity differences between studies, the forest map is the result of the outcome indicator.

Subgroup analysis: No.

Sensitivity analysis: Use sensitivity analysis to verify the reliability of the combined effect quantity.

Country(ies) involved: China.

Keywords: Percutaneous Transforaminal Endoscopic Discectomy (PTED), Percutaneous Endoscopic Lumbar Discectomy (PELD), Percutaneous endoscopic interlaminar discectomy (PEID), Giant lumbar disc herniation (GLDH).

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