INPLASY PROTOCOL

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None declared.

Efficacy and safety of ilioinguinal neurectomy in open tension-free inguinal hernia repair: a meta-analysis of randomized controlled trials

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Review question / Objective: **To systematically evaluate the efficacy and safety of ilioinguinal neurectomy in open tension-free inguinal hernia repair. P: Adults with inguinal hernia, including primary and/or secondary inguinal hernia, direct inguinal hernia and/or indirect inguinal hernia, unilateral and/or bilateral inguinal hernia. I: Tension-free inguinal hernia repair was used in both the experimental group and the control group. Ilioinguinal neurectomy was performed in the experimental group, and the ilioinguinal nerve was preserved in the control group. C: Control group. O: ① incidence of severe pain on the first day after operation; ② incidence of severe pain in the first month after operation; ③ incidence of no pain in the first month after operation; ④ incidence of no pain in the sixth month after operation;⑤ incidence of numbness in the first month after operation; ⑥ incidence of numbness in the sixth month after operation;⑦ incidence of hypoesthesia in the first month after operation; ⑧ incidence of hypoesthesia in the sixth month after operation.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 28 July 2022 and was last updated on 28 July 2022 (registration number INPLASY202270118).

INTRODUCTION

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C: Control group. O: ① incidence of severe pain on the first day after operation; ② incidence of severe pain in the first month after operation; ③ incidence of no pain in the first month after operation; ④ incidence of no pain in the sixth month after operation;⑤ incidence of numbness in the first month after operation; ⑥ incidence of numbness in the sixth month after operation;⑦ incidence of hypoesthesia in the first month after operation; ⑧ incidence of hypoesthesia in the sixth month after operation.

Condition being studied: Adults with inguinal hernia, including primary and/or secondary inguinal hernia, direct inguinal hernia and/or indirect inguinal hernia, unilateral and/or bilateral inguinal hernia.

METHODS

Participant or population: Adults with inguinal hernia, including primary and/or secondary inguinal hernia, direct inguinal hernia and/or indirect inguinal hernia, unilateral and/or bilateral inguinal hernia.

Intervention: Tension-free inguinal hernia repair was used in both the experimental group and the control group. Ilioinguinal neurectomy was performed in the experimental group.

Comparator: The ilioinguinal nerve was preserved in the control group.

Study designs to be included: Randomized controlled trials (RCTs).

Eligibility criteria: (1) Research object: Adults with inguinal hernia, including primary and/or secondary inguinal hernia, direct inguinal hernia and/or indirect inguinal hernia, unilateral and/or bilateral inguinal hernia. (2) Intervention measures: Tension-free inguinal hernia repair was used in both the experimental group and the control group. Ilioinguinal neurectomy was performed in the experimental group, and the ilioinguinal nerve was preserved in the control group. (3) Research type: This study included published randomized controlled trials (RCTs), whether blinded or not, and the language was limited to English.

Information sources: PubMed and EMBASE Cochrane Library were searched by computer. The retrieval time limit was from establishment of the database to April 26, 2022. The search terms of the database were hernia, hernioplasty, herniorrhaphy, ilioinguinal nerve, inguinal nerve, and neurectomy. At the same time, the references in the included literature were manually searched to determine whether they met the inclusion criteria.

Main outcome(s): ① incidence of severe pain on the first day after operation; ② incidence of severe pain in the first month after operation; ③ incidence of no pain in the first month after operation; ④ incidence of no pain in the sixth month after operation;⑤ incidence of numbness in the first month after operation; ⑥ incidence of numbness in the sixth month after operation;⑦ incidence of hypoesthesia in the first month after operation; ⑧ incidence of hypoesthesia in the sixth month after operation.

Quality assessment / Risk of bias analysis: Two authors independently used the bias risk assessment tool recommended in the Cochrane system evaluator manual 5.1.0 to evaluate the quality of the included studies. Each item was divided into low risk, unclear risk and high risk. Funnel plots and Egger's test were used to test for publication bias.

Strategy of data synthesis: Revman 5.3 software was used for meta-analysis. Counting data were expressed as the relative risk (RR) and its 95% confidence interval (CI), and continuous variables were expressed as the mean difference (MD) and 95% confidence interval (CI). The Q test and I2 test were used to qualitatively assess heterogeneity in the literature. If P

was > 0.1 or I2 was ≤ 50%, this meant that there was no statistical heterogeneity among the studies, and the fixed effect model was used for analysis. In contrast, if there was statistical heterogeneity among the research results, the source of heterogeneity was further analysed. After excluding the influence of obvious clinical heterogeneity, the random-effect model was used for meta-analysis. Obvious clinical heterogeneity was treated by subgroup analysis, sensitivity analysis, or only descriptive analysis.

Subgroup analysis: Obvious clinical heterogeneity was treated by subgroup analysis.

Sensitivity analysis: Obvious clinical heterogeneity was treated by sensitivity analysis.

Country(ies) involved: China.

Keywords: ilioinguinal nerve; neurectomy; hernia repair; meta-analysis.

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