

INPLASY PROTOCOL

To cite: Li et al. Robotic versus laparoscopic distal pancreatectomy on perioperative outcomes: a systematic Review and Meta-analysis. Inplasy protocol 202280041. doi: 10.37766/inplasy2022.8.0041

Received: 12 August 2022

Published: 12 August 2022

Corresponding author:
Menghua Dai

daimh@pumch.cn

Author Affiliation:
Chinese Academy of Medical Sciences & Peking Union Medical College.

Support: 2020YFC2002702.

Review Stage at time of this submission: Completed but not published.

Conflicts of interest:
None declared.

Robotic versus laparoscopic distal pancreatectomy on perioperative outcomes: a systematic Review and Meta-analysis

Li, PY¹; Zhang, HY²; Chen, LX³; Liu, TT⁴; Dai, MH⁵.

Review question / Objective: Robotic versus laparoscopic distal pancreatectomy on perioperative outcomes: a Systematic Review and Meta-analysis.

Condition being studied: Distal pancreatectomy is the standard surgical method for pancreatic tumors located at the body or tail. With the development of surgical techniques, minimally invasive distal pancreatectomies including robotic distal pancreatectomy and laparoscopic distal pancreatectomy have been accepted widely. The robotic system has the advantages of a high-resolution three-dimensional(3D) visualization, tremor filtration, motion scaling, and better ergonomics. Many studies have compared the advantages of robotic distal pancreatectomy over laparoscopic distal pancreatectomy. This meta-analysis aimed to conduct a comprehensive research and systematically reviewed the relevant literature so far to further explore the advantages of RDP comparing with LDP in terms of surgical safety, short-term efficacy and cost effectiveness.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 12 August 2022 and was last updated on 12 August 2022 (registration number INPLASY202280041).

INTRODUCTION

Review question / Objective: Robotic versus laparoscopic distal pancreatectomy on perioperative outcomes: a Systematic Review and Meta-analysis

Condition being studied: Distal pancreatectomy is the standard surgical

method for pancreatic tumors located at the body or tail. With the development of surgical techniques, minimally invasive distal pancreatectomies including robotic distal pancreatectomy and laparoscopic distal pancreatectomy have been accepted widely. The robotic system has the advantages of a high-resolution three-dimensional(3D) visualization, tremor

filtration, motion scaling, and better ergonomics. Many studies have compared the advantages of robotic distal pancreatectomy over laparoscopic distal pancreatectomy. This meta-analysis aimed to conduct a comprehensive research and systematically reviewed the relevant literature so far to further explore the advantages of RDP comparing with LDP in terms of surgical safety, short-term efficacy and cost effectiveness.

METHODS

Search strategy: Three major medical databases are consulted in this research: PubMed, Embase, Cochrane Library. Search terms are divided into three parts: (1) robotic or robot-assist or Da Vinci, (2) laparoscopic or laparoscopy, (3) distal pancreatectomy or left-sided pancreatectomy. The literature research is performed on LDP and RDP for perioperative outcomes. No start date is set and the publication end date is June 2022. Three major medical databases were consulted in this research: Pubmed, Embase, Cochrane Library. Search terms were divided into three parts: (1) robotic or robot-assist or Da Vinci, (2) laparoscopic or laparoscopy, (3) distal pancreatectomy or left-sided pancreatectomy. The literature research was performed on LDP and RDP for perioperative outcomes. No start date was set. Only clinical studies written in English were selected. In addition, manual searches were performed on the references of retrieved articles to find other matching articles. Duplicated articles were removed before the study selection process.

Participant or population: Patients who received distal pancreatectomy.

Intervention: Robotic distal pancreatectomy.

Comparator: Laparoscopic distal pancreatectomy.

Study designs to be included: Retrospective, prospective and randomized controlled trial studies.

Eligibility criteria: (1) comparison of RDP and LDP among patients who underwent distal pancreatectomy for benign, borderline malignant, or malignant lesions; (2) report on at least one peri-operative outcome.

Information sources: Information sources are retrieved from published articles.

Main outcome(s): Main outcomes include operative outcomes and postoperative outcomes. Operative outcomes include estimated blood loss, operation time, spleen preservation rate, Kimura procedure rate, R0 resection rate, postoperative outcomes include overall complications, major complication, pancreatic fistula, postoperative hemorrhage, delayed gastric emptying, postoperative hospital stay, 30-day mortality, 90-day mortality, reoperation rate. main outcome.

Additional outcome(s): Total cost and operation cost; overall survival of patients with malignant tumors.

Quality assessment / Risk of bias analysis: Modified Newcastle-Ottawa scale (NOS) for quality assessment and scoring are used. Studies with a score ≥ 6 are considered high-quality studies.

Strategy of data synthesis: Continuous variables were evaluated by the weighted mean difference (WMD) with a 95% confidence interval (95% CI), and dichotomous variables were evaluated using odds ratios (OR) with a 95% CI. Heterogeneity was assessed using χ^2 and the I^2 index. The fixed-effect model (FEM) and random effect model (REM) were used based on the value of I^2 .

Subgroup analysis: Not applicable.

Sensitivity analysis: If the outcomes of interest were with high heterogeneity, we explored their potential sources and assess the robustness of these outcomes.

Language restriction: English.

Country(ies) involved: China.

Keywords: robotic surgery; laparoscopic surgery; distal pancreatectomy; perioperative outcome.

Contributions of each author:

Author 1 - Li Pengyu.

Email: lpy_0907@163.com

Author 2 - Hanyu Zhang.

Author 3 - Lixin Chen.

Author 4 - Tiantong Liu.

Author 5 - Menghua Dai.