International Platform of Registered Systematic Review and Meta-analysis Protocols

INPLASY

The surgical effect of inferior mesenteric artery ligation level in rectal cancer and sigmoid colon cancer: a meta-analysis of randomized controlled trials

INPLASY202530066
doi: 10.37766/inplasy2025.3.0066
Received: 14 March 2025
Published: 14 March 2025

You, JH; Zhang, Y.

Corresponding author:
Yong Zhang

zhangyong_forever@163.com

Author Affiliation:
Jianli People's Hospital.

ADMINISTRATIVE INFORMATION

Support - NA.

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

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202530066

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 March 2025 and was last updated on 14 March 2025.

INTRODUCTION

Review question / Objective The surgical effect of inferior mesenteric artery ligation level in rectal cancer and sigmoid colon cancer: a meta-analysis of randomized controlled trials.

Condition being studied In rectal and sigmoid cancer surgery, the submesenteric artery may be lapped at a high level from the proximal aorta or at a low level from the distal end of the left colic artery. There is no consensus on how to choose.

METHODS

Participant or population Patients with sigmoid and rectal cancer.

Intervention Low and high ligation of inferior mesenteric artery.

Comparator Low or high ligation of inferior mesenteric artery.

Study designs to be included Randomized controlled trials.

Eligibility criteria The following inclusion criteria were used: (1) the study type was a randomized controlled trial (RCT); (2) studies that compared high tie with low tie of the IMA for sigmoid or rectal cancer surgery,; and (3) the findings contained at least one of the following: anastomotic leakage, number of harvested lymph nodes, overall postoperative morbidity, postoperative urinary dysfunction, tumor recurrence, overall survival. The exclusion criteria were as follows: 1) it was not possible to extract data from the published results, (2) studies that were retrospective cohort studies, or (3) the studies contained republished data, and (4) publications are editorials, comments, letters, review articles.

Information sources PubMed, Embase, Cochrane Library, Web of Science and China National Knowledge internet (CNKI) databases from their inception to January 20, 2025.

Main outcome(s) Anastomotic leakage, number of harvested lymph nodes, overall postoperative morbidity, postoperative urinary dysfunction, tumor recurrence, overall survival.

Quality assessment / Risk of bias analysis The quality of all trials was independently evaluated by two authors according to the Cochrane quality criteria. An overall risk of bias assessment was also performed by each reviewer. Any disagreements between the authors were settled by discussion with a third author. A weighted kappa value was calculated and used to assess the agreement between the reviewers for the overall risk of bias assessment. Publication bias was evaluated using Begg's plots, Egger's tests and funnel plots.

Strategy of data synthesis STATA 16.0 (Stata Corp LP, College Station, TX, USA) was used to perform the statistical analyses. L'Abbe plots and meta-regression were used for intuitive assessment of heterogeneity. For the remaining studies, a random effect model was used to pool the effect sizes to calculate the statistical heterogeneity. Heterogeneity was analyzed using I2 and χ2 statistics. If there was significant heterogeneity, a Galbraith plot was generated to evaluate the consistency and quality of the results. Sensitivity analysis, subgroup analysis and meta-regression were performed to determine sources of heterogeneity.

Subgroup analysis Sensitivity analysis, subgroup analysis and meta-regression were performed to determine sources of heterogeneity.No subgroup analysis was performed.

Sensitivity analysis Sensitivity analysis, subgroup analysis and meta-regression were performed to determine sources of heterogeneity.

Country(ies) involved China - Jianli People‘s Hospital.

Keywords Rectum, Laparoscopy, Surgery, Rectal cancer, IMA ligation.

Contributions of each author
Author 1 - Yong Zhang.
Author 2 - JingHong You.