INPLASY PROTOCOL

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Review Stage at time of this submission: Preliminary searches.

Conflicts of interest: None declared.

A Network Meta-analysis of Comparison of Clinical Outcomes Between Robotic, Laparoscopic, and Open Total Rectal Mesenteric Resection for Rectal Cancer

Liu, Y[1]; Tian, ZQ[2]; Shen, W[3].

Review question / Objective: The incidence of colon and rectal cancer is increasing worldwide and the only cure for colon and rectal cancer today is still surgery. In this study, the advantages and disadvantages of robotic total mesorectal excision (RTME), laparoscopic total mesorectal excision (LTME) and open total mesorectal excision (OTME) were compared in terms of tumour radicality and immediate prognosis. P: Patient with rectal cancer; I: RTME; C: OTME, LTME; O: clinical outcome; S: Non-RCT.

Condition being studied: The incidence of rectal cancer is increasing every year and the only cure for rectal cancer today is still surgery. However, due to its unique tumour biology and difficult surgical access, it is difficult to determine the radical treatment of rectal cancer. Currently, rectal cancer is mainly treated by total mesenteric excision (TME). The use of TME under different surgical approaches is also controversial. This study compares OTME, LTME and RTME to investigate the clinical efficacy of the three surgical approaches.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 February 2022 and was last updated on 24 February 2022 (registration number INPLASY202220106).

INTRODUCTION

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METHODS

Participant or population: Patient with rectal cancer.

Intervention: RTME.

Comparator: OTME, LTME.

Study designs to be included: Non-RCT.

Eligibility criteria: (1) Study type: cohort study and randomised controlled trial; (2) Study population: patients with pathological or cytological diagnosis of rectal cancer; (3) Outcome indicators: length of stay in hospital, number of lymph nodes cleared intraoperatively, positive rate of distal resectionmargin (DRM), positive rate of circumferential resection margin (CRM) and postoperative bowel obstruction, anastomotic fistula and overall complication rate; (4) Control measures: RTME, LTME and OTME.

Information sources: PubMed, Embase, Cochrane Library and Ovid databases.

Main outcome(s): Circumferential resection margin（CRM）and distal resectionmargin (DRM).

Additional outcome(s): Postoperative intestinal obstruction, anastomotic fistula, overall complication rate.

Data management: Researchers use NoteExpress software to complete the literature screening process, reading abstracts and full texts where necessary.

Quality assessment / Risk of bias analysis: NOS Scale.

Strategy of data synthesis: Review Manager 5.4 software and R-Studio software (calling JAGS 4.3.0) were used for direct Meta-analysis and Bayesian mesh Meta-analysis.A reticulated relationship plot and forest plot were drawn, and for dichotomous information, effect sizes were expressed as ratio (OR); for continuous information, effect sizes were expressed as mean difference (MD), and 95% confidence intervals (95% CI) were calculated for both separately. Ranking probability plots were drawn to rank the superiority of effects for each outcome indicator.

Subgroup analysis: The sample was divided into subgroups based on characteristics such as age, region and occupation, and then subgroup analysis was carried out.

Sensitivity analysis: A sensitivity analysis was passed when, after the researcher deleted any of them, the combined results of the remaining literature did not differ significantly from the results before deletion.

Country(ies) involved: China.

Keywords: Total rectal Mesenteric Resection; Laparoscopic; Robotic; Open Surgery; Network Meta-analysis.

Contributions of each author:
Author 1 - Liu Y.
Author 2 - Tian ZQ.
Author 3 - Shen W.