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**ADMINISTRATIVE INFORMATION****Support** - No.**Review Stage at time of this submission** - Data analysis.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202390071**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 September 2023 and was last updated on 21 September 2023.**INTRODUCTION**

**Review question / Objective** Complete mesocolic excision versus conventional colectomy for patients with colon cancer: A systematic review and meta-analysis. Security and superiority between complete mesocolic excision (CME) and conventional colectomy for patients with colon cancer were compared.

**Condition being studied** Colon cancer.**METHODS****Participant or population** (1) participants were pathologically proven as having colon cancer.**Intervention** The cohort study of CME and NCME was compared.**Comparator** The cohort study of CME and NCME was compared.

**Study designs to be included** Data including the first author, publication year, number of cases, intraoperative bleeding, operation time, number of lymph nodes, large bowel length, mesenteric area, length of nutrient vessel ligation, postoperative exhaust time, hospital stay, postoperative complications (e.g., anastomotic fistula, incision infection, deep venous thrombosis, intestinal obstruction, and lymphatic leakage), postoperative local recurrence, 3-year overall survival rate(3-year OS), and 5-year overall survival rate(5-year OS) were extracted from all included studies.

**Eligibility criteria** (1) participants were pathologically proven as having colon cancer; (2) the cohort study of CME and NCME was compared; (3) the number of cases in both CME and NCME groups was  $\geq 50$ .

**Information sources** Chinese and English databases, including PubMed, Elsevier, Embase, SpringerLink, Web of Science, Cochrane Library, CNKI, and Wanfang, for studies investigating the

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effects of CME versus NCME from January 2013 to January 2023.

**Main outcome(s)** A meta-analysis of 32 studies with 16,227 patients with colon cancer was conducted. CME is more consistent with the concept of embryonic anatomy, tumor surgery, and fine minimally invasive surgery than conventional colectomy. CME is safe, effective, and feasible and can be used as a standardized surgical method for colon cancer.

**Quality assessment / Risk of bias analysis** The Newcastle–Ottawa scale (NOS) was used to assess the risk of bias included in this study. The highest NOS score was nine points. Generally, studies with more than five points can be included in the meta-analysis[4]. Two authors (L.Z. and C.W.) independently evaluated and rated each study on the basis of the inclusion criteria and cross-checked them. In case of disagreement, it was discussed with the third author (Y.Y.) until the final score for each study was obtained.

**Strategy of data synthesis** Statistical analysis was performed using Review Manager 5.3 software, and data were estimated using I<sup>2</sup> statistic for heterogeneity. The fixed-effects model was used if I<sup>2</sup> ≤ 50%. For the data of binary variables, the relative risk was adopted. Mean difference (MD) and log of odds ratio (OR) were used when appropriate. A p-value of 0.05 or less was considered significant.

**Subgroup analysis** The fixed-effects model was used if I<sup>2</sup> ≤ 50%. For the data of binary variables, the relative risk was adopted. Mean difference (MD) and log of odds ratio (OR) were used when appropriate. A p-value of 0.05 or less was considered significant.

**Sensitivity analysis** Log of odds ratio.

**Country(ies) involved** China.

**Keywords** Complete mesocolic excision; colon cancer; survival; complication; meta-analysis.

**Contributions of each author**

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