INPLASY PROTOCOL

Corresponding author:
Lijian Xu

xulijian185@126.com

Author Affiliation:
Department of General Surgery, The Second Affiliated Hospital of Nanjing Medical University.

Laparoscopic versus open gastrectomy for advanced gastric cancer: an umbrella review of systematic reviews and meta-analyses

Fan, D[1]; Ge, PP[2]; Sun, J[3]; Wu, Q[4]; Kan, JX[5]; Lu, T[6]; Xu, LJ[7].

Review question / Objective: Surgeons and policymakers need a comprehensive overview of the depth and strength of the scientific evidence in order to evaluate the potential benefits and harms of laparoscopic gastrectomy for advanced gastric cancer compared to open gastrectomy. To this end, we will conduct a comprehensive review to collect and evaluate information from previous systematic reviews compared the laparoscopic and open gastrectomy. We will use the findings of a high quality systematic review to answer the following questions: What are the benefits and harms of LG versus OG in patients with advanced gastric cancer? Does it have non-inferiority? Whether LG can be an effective surgical method to replace OG? since there have been a lot about this topic review system, but the conclusion is not the same, need timely evidence to tell medical terms, therefore, a new systematic review is inappropriate.

Information sources: A literature search will be carried out through PubMed, OVid, the Cochrane Library, web of science, wan fang data, Cnki and the SinoMed from database inception to Nov, 2021. Additionally, we will search The reference folder of included articles by manual to identify other reviews relevant to our topic.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 12 December 2021 and was last updated on 12 December 2021 (registration number INPLASY2021120058).

INTRODUCTION

Review question / Objective: Surgeons and policymakers need a comprehensive overview of the depth and strength of the scientific evidence in order to evaluate the potential benefits and harms of laparoscopic gastrectomy for advanced gastric cancer compared to open gastrectomy. To this end, we will conduct a comprehensive review to collect and evaluate information from previous

systematic reviews compared the laparoscopic and open gastrectomy.We will use the findings of a high quality systematic review to answer the following questions: What are the benefits and harms of LG versus OG in patients with advanced gastric cancer? Does it have non-inferiority? Whether LG can be an effective surgical method to replace OG? since there have been a lot about this topic review system, but the conclusion is not the same, need timely evidence to tell medical terms, therefore, a new systematic review is inappropriate.

Condition being studied: Gastric cancer is one of the most common malignant tumors of digestive system with high incidence ,as well as one of the most common causes of cancer death globally. Standard gastrectomy with a D2 lymph node dissection is the principal surgical procedure for cancer patients with curative intent. Currently,Most guidelines regard laparoscopic surgery as one of the standard operation for early-stage cancer and distal gastrectomy(eg,Japanese gastric cancer treatment guidelines 2018 (5th edition)). However, the effects of laparoscopic gastrectomy(LG) on short-term surgical outcomes and long-term survival are still uncertainty for patents with advanced gastric cancer,compared with open gastrectomy(OG).

METHODS

Search strategy: Two researchers (DF and PPG) will independently search Medical subject heading(MeSH) terms and keywords,including 'Stomach Neoplasms', 'gastric cancer''gastric carcinoma''gastric adenocarcinoma','advanced' 'open gastrectomy' , 'laparoscopic gastrectomy' and'systematic reviews'or'meta-analysis'. The key words will be combined as much as possible to retrieve the maximum number of Published articles. Additionally, we will search The reference folder of included articles by manual to identify other reviews relevant to our topic.

Participant or population: Adult patients undergoing surgery for advanced gastric cancer(AGC).

Intervention: Laparoscopic total/subtotal gastrectomy with curative intent for AGC

Comparator: Open total/subtotal gastrectomy with curative intent for AGC.

Study designs to be included: Systematic reviews meta-analyses

Eligibility criteria: The inclusion criteria of this umbrella review will accord the population, intervention, comparison, outcome pattern: Population: Adult patients diagnosed as resectable AGC.Intervention: Laparoscopic total/subtotal gastrectomy with curative intent.Comparison: Open total/subtotal gastrectomy with curative intent. Outcomes: the outcomes of laparoscopic approach compared with open surgery will include intraoperative conditions, postoperative short-term clinical outcomes and long-term survival rate.The outcomes will respect the study report and will not determine the inclusion or exclusion of the reviews. The individual study design included in the systematic evidence reviews was limited to randomized controlled studies or retrospective non-randomized controlled studies or both. aggregated data for the laparoscopic and open groups must be presented separately during the evidence evaluation process. Included reviews will be excluded if they do not meet the following minimum criteria: The search strategy was performed in at least two databases, and the specific search process was described in detail; Inclusion and exclusion of studies were clearly defined and elaborated; reviews must include a meta-analysis, and include at least three original studies; must provide a standard and reasonable quality assessment of all included studies and present the results; Risk of bias in individual studies must be assessed;In the comprehensive effect evaluation, early gastric cancer and advanced gastric cancer was described separately, and the

effect comparison of mixed together will be excluded.

Information sources: A literature search will be carried out through PubMed, OVid, the Cochrane Library, web of science, wan fang data, Cnki and the SinoMed from database inception to Nov, 2021. Additionally, we will search The reference folder of included articles by manual to identify other reviews relevant to our topic.

Main outcome(s): The primary indicator of interest will be operation time, blood loss, number of retrieved lymphnodes, length of hospital stay and the overall survival(OS) For each meta-analysis, we estimated the summary effect size and its 95% CI using random-effects models.

Additional outcome(s): Additionally, if data were available, the secondary aim will include time to first flatus, Time to first oral administration, incidence of complications, disease-free survival(DFS), and others. All outcomes will be assessed based on the definitions applied in the selected meta-analyses.

Data management: NoteExpress will be used for literature management in the process of research, including the preservation of search results, preliminary screening of research, acquisition and reading of full text. The specific details of the included literature, quality assessment results, data acquisition, and final effect assessment and analysis were presented in tables.

Quality assessment / Risk of bias analysis: The quality of all included reviews will be assessed by two independent reviewers using the AMSTAR2 tool, which uses16 items to measure the methodological quality of systematic reviews. disagreements will be resolved by discussion or consultation. The scores assessed reflect only the overall quality of the included studies and do not serve as criteria for inclusion and exclusion. For the same outcome, If the original researchs overlap completely in multiple systematic reviews, we will select the highest-quality review.

Strategy of data synthesis: We will Comprehensive analysis the including high-quality systematic reviews through comparison between LG and OG for AGC. The comparative advantages and disadvantages of each outcome found will be summarized in a narrative manner.The overall effect estimates extracted from systematic reviews will be pooled to present by using tabular presentation. Overall description of included Review's Characteristics will be exhibited by a detailed Table, which including first author, year of publication, type of review, number of studies, included types of studies, interventions, number of patients. Outcome indicators will be pooled depending on the number of trials, Total patients, effect estimates and heterogeneity. The result of assessing the methodological quality of included meta-analyses by the AMSTAR tool will be provided. the strength of evidence for each outcome will be assessed by the GRADE (Grading of Recommendations, Assessment, Development and Evaluation) working group classification, as well as categorised into high, moderate, low, or very low quality.

Subgroup analysis: Outcomes will also be subgroup aggregated, including randomized controlled trial or retrospective non-randomized controlled study, total gastrectomy or distal gastrectomy.

Sensitivity analysis: The I2 statistics will be used to measure heterogeneity among the included studies of each meta-analysis. We will evaluate whether there was evidence for small-study effects using the Egger p test.We will apply the excess statistical significance test to evaluate whether the evidence results of review have statistical significance results.

Language: English and Chinese.

Country(ies) involved: China.

Dissemination plans: The results of our review will be disseminated through open publications, conference reports and mass media.

Contributions of each author:

Author 1 - Dong Fan - study conception, design, Literature search, data extraction, data management, statistical analysis, and drafting manuscript.
Email: 13150755928@163.com

Author 2 - Pingping Ge - Study conception, design, Literature search, study selection, data extraction.
Email: njmuge@163.com

Author 3 - Jin Sun - study selection, Quality assessment and data extraction.
Email: sun111111jin@163.com

Author 4 - Qiong Wu - Study selection and Quality assessment.
Email: 1163985250@qq.com

Author 5 - Jianxun Kan - Quality assessment and statistical analysis.
Email: kanjianxun1998@163.com

Author 6 - Tao Lu - Participated in discussions on the feasibility of modules such as search strategy, research selection, data extraction and data analysis, and provided suggestions for revision of the manuscript.
Email: xyzlutao@163.com

Author 7 - Lijian Xu - Study conception, design, critical revision of manuscript, Management, as a clinical tutor, vouch for the publication of the review.
Email: xulijian185@126.com