INPLASY PROTOCOL

To cite: Lin et al. Risk factors for postoperative pulmonary infection in patients with esophageal cancer: A systematic review and Meta-analysis. Inplasy protocol 202240139. doi: 10.37766/inplasy2022.4.0139

Received: 22 April 2022

Published: 22 April 2022

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Support: **Personal.**

Review Stage at time of this submission: **Preliminary searches.**

Conflicts of interest:
None declared.

Risk factors for postoperative pulmonary infection in patients with esophageal cancer: A systematic review and Meta-analysis

Lin, K[1]; Ren, M[2].

Review question / Objective: **Esophageal cancer is the sixth leading cause of cancer-related death, with pulmonary infection being an important complication after esophageal cancer resection. Therefore, early identification of risk factors for postoperative pulmonary infection and appropriate treatment are of great significance for prognosis. In recent years, scholars at home and abroad have conducted a large number of clinical studies to explore the risk factors for postoperative pulmonary infection in esophageal cancer, but their results are inconsistent. For this reason, this study provides a basis for early clinical prevention and intervention of pulmonary infection through Meta-analysis of studies related to risk factors for postoperative pulmonary infection in patients with esophageal cancer.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 April 2022 and was last updated on 22 April 2022 (registration number INPLASY202240139).

INTRODUCTION

Review question / Objective: **Esophageal cancer is the sixth leading cause of cancer-related death, with pulmonary infection being an important complication after esophageal cancer resection. Therefore, early identification of risk factors for postoperative pulmonary infection and appropriate treatment are of great significance for prognosis. In recent years, scholars at home and abroad have conducted a large number of clinical studies to explore the risk factors for postoperative pulmonary infection in esophageal cancer, but their results are inconsistent. For this reason, this study provides a basis for early clinical**

prevention and intervention of pulmonary infection through Meta-analysis of studies related to risk factors for postoperative pulmonary infection in patients with esophageal cancer.

Condition being studied: Esophageal cancer.

METHODS

Participant or population: Postoperative esophageal cancer.

Intervention: Exposure to risk factors for postoperative pulmonary infection in patients with esophageal cancer.

Comparator: No exposure to risk factors for postoperative pulmonary infection in patients with esophageal cancer.

Study designs to be included: Case-control or cohort study.

Eligibility criteria: Inclusion criteria.1. study population: patients with esophageal cancer treated with endoscopic minimally invasive surgery, open surgery and thoracoscopic surgery2、Study type: case-control study and cohort study3. Outcome indicators: risk factors for postoperative pulmonary infection in patients with esophageal cancer as outcome indicatorsExclusion Criteria.1. The study was on pulmonary infections caused by diseases other than postoperative esophageal cancer2. Study data were incomplete or unusable, and complete data were not available through other means3、Repeatedly published literature4、Reviews, systematic reviews, Meta-analyses, animal studies or conference papers5, Newcastle-Ottawa Scale (the Newcastle Scale, NOS) score < 6 studiesTranslated with http://www.DeepL.com/Translator (free version).

Information sources: Pubmed, EMbase, The Cochrance Library, Web of Science, CNKI, Wanfang Data, VIP, CBM.

Main outcome(s): OR.

Data management: EndNote.

Quality assessment / Risk of bias analysis: Cochrane Tool.

Strategy of data synthesis: Meta-analysis of the included literature was performed using RevMan 5.3 software, and the count data were expressed as odds ratio (OR) I effect indicators and 95% CI. Q test and I2 test were used to test for heterogeneity, if $P \geq 0.1$ and $I2 \leq 50\%$, the heterogeneity was small, and the fixed-effect model was selected to combine effect sizes; if $P < 0.1$ and $I2 > 50\%$, the heterogeneity was large, and the random-effect model was selected to combine effect sizes, and the fixed-effect model was used for Meta-analysis after excluding the reasons for heterogeneity. Sensitivity analysis was also performed to ensure the reliability and stability of the study. Publication bias tests were performed by funnel plots generated by RevMan 5.3 software.

Subgroup analysis: Subgroup analysis was performed according to age, smoking history, recurrent laryngeal nerve injury, operation time, pulmonary disease, COPD, intraoperative ventilation mode: one lung ventilation, preoperative serum albumin), smoking index, etc.

Sensitivity analysis: After deleting any one of them, the combined results of the remaining papers are not significantly different from those at the time of deletion, which means that the sensitivity analysis is passed

Country(ies) involved: China.

Keywords: Esophageal cancer; pulmonary infection; risk factors;

Contributions of each author:
Author 1 - Lin Kai.
Author 2 - Ren Meng.