

INPLASY PROTOCOL

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We declare no conflicts of interest.

Positive lymph nodes ratio, a prognostic indicator in patients with esophageal carcinoma undergoing esophagectomy: A protocol for a dose-response meta-analysis

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ABSTRACT

Objective: This study aims to investigate the correlation between positive lymph nodes ratio (PLR) and the overall survival (OS) of patients with esophageal carcinoma undergoing esophagectomy and whether the dose-response relationship existed.

Condition being studied: Esophageal carcinoma is the sixth most common cause of cancer-related mortality, leading to more than 500,000 deaths annually worldwide. Identifying prognostic factors is beneficial to guide further treatment and improve prognosis. The PLR has been initially evaluated to predict the prognosis of patients with esophageal carcinoma, but the results were controversial. Therefore the present dose-response meta-analysis combine and analyze the current evidence to reveal the correlation and whether the dose-response relationship existed.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 31 March 2020 and was last updated on 01 April 2020 (registration number INPLASY202040003).

INTRODUCTION

Objectives / Review question: This study aims to investigate the correlation between positive lymph nodes ratio (PLR) and the overall survival (OS) of patients with

esophageal carcinoma undergoing esophagectomy and whether the dose-response relationship existed.

Condition being studied: Esophageal carcinoma is the sixth most common cause

of cancer-related mortality, leading to more than 500,000 deaths annually worldwide. Identifying prognostic factors is beneficial to guide further treatment and improve prognosis. The PLR has been initially evaluated to predict the prognosis of patients with esophageal carcinoma, but the results were controversial. Therefore the present dose-response meta-analysis combine and analyze the current evidence to reveal the correlation and whether the dose-response relationship existed.

METHODS

Participant or population: Patients with esophageal carcinoma undergoing esophagectomy.

Intervention: High levels of PLR.

Comparator: Low levels of PLR.

Study designs to be included: Prospective or retrospective cohort studies and randomized controlled trials (RCTs) will be included.

Eligibility criteria: Studies that reported the hazard ratios (HRs) and associated 95% confidence intervals (CIs) or provided a completely Kaplan-Meier curve of comparing prognosis of patients with different PLR levels.

Information sources: The following databases will be searched from database inception to February 2020: PubMed, Web of Science, and Embase. Potentially relevant research can also be identified by manually searching the references of the articles originally identified.

Main outcome(s): Overall survival.

Quality assessment / Risk of bias analysis: The quality of cohort studies will be assessed using the Newcastle Ottawa Quality Assessment Scale (NOS). We will consider 0 to 6, 7 to 8, and 9 stars as low, moderate, and high quality of study, respectively. Each study will be individually evaluated by two independent reviewers. If

there is any question, a third investigator will solve it through discussion.

Search strategy: The hazard ratios (HRs) and associated 95% confidence intervals (CIs) will be calculated employing random-effects models when the I-square \geq 40%, whereas the fixed-effect model was chosen when the I-square $<$ 40%.

Subgroup analysis: Subgroup analyses will be performed to explore the origin of substantial heterogeneity according to the mean age, year of publication, sample size, cut-off value, histological type, adjuvant therapy, and the number of resected nodes, etc.

Sensibility analysis: Sensitivity analysis will be performed using the leave-one-out approach.

Language: No restrictions on the language.

Countries involved: No restrictions on the country.

Keywords: Esophageal carcinoma; the positive lymph nodes ratio; overall survival; prognostic factor; dose-response meta-analysis.