INPLASY PROTOCOL

To cite: Lu et al. High-dose versus standard-dose radiotherapy in concurrent chemoradiotherapy for inoperable esophageal cancer: a meta-analysis. Inplasy protocol 2022100045. doi: 10.37766/inplasy2022.10.0045

Received: 12 October 2022

Published: 12 October 2022

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Support: **None.**

Review Stage at time of this submission: **Formal screening of search results against eligibility criteria.**

Conflicts of interest:
None declared.

High-dose versus standard-dose radiotherapy in concurrent chemoradiotherapy for inoperable esophageal cancer: a meta-analysis

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Review question / Objective: **The aim of this study was to evaluate the effectiveness and safety of high-dose versus standard-dose radiotherapy in concurrent chemoradiotherapy for inoperable esophageal cancer patients.**
Condition being studied: **A systematic computerized search of the literature was conducted by screening PubMed, Web of Science, EMBASE, Cochrane Library before October 7, 2022 to collect controlled clinical trails of high-dose and standard-dose radiation in concurrent chemoradiotherapy for inoperable esophageal cancer patients. Review Manager 5.4 software was utilized for statistical analysis.**
Eligibility criteria: **The main inclusion criteria of this study were as follows: (1) All patients were diagnosed with esophageal cancer that could not be operated and received concurrent chemoradiotherapy; (2) The trials should compare the therapeutic effects of high-dose radiotherapy (≥ 60Gy) and standard-dose radiotherapy (50-50.4Gy). Studies were excluded as follows: (1) Radiation dose less than 60Gy in the high-dose radiotherapy group and not 50-50.4Gy in the standard-dose radiotherapy group; (2) 2D-CRT radiotherapy techniques.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 12 October 2022 and was last updated on 12 October 2022 (registration number INPLASY2022100045).

INTRODUCTION

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October 7, 2022 to collect controlled clinical trails of high-dose and standard-dose radiation in concurrent chemoradiotherapy for inoperable esophageal cancer patients. Review Manager 5.4 software was utilized for statistical analysis.

METHODS

Participant or population: All patients were diagnosed with esophageal cancer that could not be operated and received concurrent chemoradiotherapy.

Intervention: High-dose (≥ 60Gy) radiotherapy in concurrent chemoradiotherapy.

Comparator: Standard-dose radiotherapy (50-50.4Gy) in concurrent chemoradiotherapy.

Study designs to be included: The type of studies were clinical controlled trials, including randomized controlled trials and retrospective controlled trials.

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Information sources: PubMed, Web of Science, Embase and Cochrane Library.

Main outcome(s): Overall survival and progression free survival.

Additional outcome(s): Complete response, objective response rate and grade 3 and above of radiation pneumonitis and esophagitis.

Quality assessment / Risk of bias analysis: We used the modified Jadad score to assess the quality of randomized controlled trials. The retrospective controlled trials were assessed according to the Newcastle–Ottawa Quality Assessment Scale (NOS). We assessed the potential publication bias by funnel plots and Begg's test.

Strategy of data synthesis: This meta-analysis was performed with the statistical software Review Manager 5.4. Statistical heterogeneity among various studies was tested using I2-statistic. If there was no significant heterogeneity among studies ($P > 0.1$, $I2 < 50\%$), a fixed-effects model was used to synthesize HR and OR; otherwise, a random-effects model was employed. The tests were considered statistically significant if P values were less than 0.05. We assessed the potential publication bias by funnel plots and Begg's test.

Subgroup analysis: The subgroup analysis of this study was to evaluate the effectiveness of high-dose versus standard-dose radiotherapy in concurrent chemoradiotherapy for inoperable esophageal squamous cell carcinoma patients.

Sensitivity analysis: The sensitivity analysis will be carried out by Stata software to find the potential heterogeneity and bias.

Country(ies) involved: China (The Affiliated Hospital of Xuzhou Medical University).

Keywords: esophageal cancer, concurrent chemoradiotherapy, radiation dose, meta-analysis.

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