

INPLASY PROTOCOL

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The authors declare no
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Neutrophil-to-lymphocyte ratio in head and neck cancer prognosis: An updated systematic review and meta-analysis

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Review question / Objective: P: head and neck cancer patients; I: High NLR group; C: Low NLR group; O: Overall survival; S: Cohort study.

Condition being studied: We divided head and neck cancer patients into high NLR value group and low NLR value group to find the prognosis role of NLR.

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

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 September 2020 and was last updated on 21 September 2020 (registration number INPLASY202090074).

value group and low NLR value group to find the prognosis role of NLR.

METHODS

Participant or population: Patients with head and neck cancer (confirmed by histopathology) and no metastases from other sites to the cancer.

INTRODUCTION

Review question / Objective: P: head and neck cancer patients; I: High NLR group; C: Low NLR group; O: Overall survival; S: Cohort study.

Condition being studied: We divided head and neck cancer patients into high NLR

Intervention: High NLR value.

Comparator: Low NLR value.

Study designs to be included: Both retrospective study and prospective study can be included.

Eligibility criteria: Inclusion criteria for selecting the studies for this meta analysis were as follows criteria: (i) Studied patients with head and neck cancer were pathological examination confirmed; (ii) NLR was measured by serum based methods; (iii) Correlation of NLR with overall survival (OS) (iv) The study type of article should be cohort study Exclusion criteria were as follows: (i) Papers just analysis one cancer site of head and neck cancer. (i) Abstracts, letters, case reports, reviews or nonclinical studies; (ii) Studies were not written in English; (iii) Studies with insufficient data for estimating hazard ratio (HR) and 95% confidence interval (CI); (iv) Studies had duplicate data or repeat analysis. (v) Full text cannot be obtained.

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

Main outcome(s): Hazard ratio (HR), 95% confidence Interval (CI), overall survival (OS).

Quality assessment / Risk of bias analysis: Begg's funnel plot and the Egger's linear regression test were performed to evaluate publication bias. The NOS consists of three parts: selection (0–4 points), comparability (0–2 points), and outcome assessment (0–3 points). NOS scores of 6 were assigned as high-quality studies.

Strategy of data synthesis: We directly obtained HR and 95%CI from each literature or estimated these data according to the data obtained from survival curves with Engauge Digitizer and an application based on the method of Jayne F Tierney. HR >1 indicated a worse prognosis hypopharyngeal carcinoma patients with high expression of NLR. Cochran's Q test and Higgins I-squared

statistic were undertaken to assess the heterogeneity of the included trials. We use random effects (DerSimonian–Laird method) models were used to calculate the pooled HRs and 95% CIs because of the data included had heterogeneity. In subgroup analysis to find the heterogeneity, Pheterogeneity 50% suggested significant heterogeneity in the literature and both random-effect model and fix-effect model were used. Subgroup analysis was conducted to explore and explain the diversity (heterogeneity) among the results of different studies. Publication bias was assessed by Begg's and Egger's funnel plot. All p-values were two-sided. A $p < 0.05$ was considered statistical significant. All the statistical analyses were performed using Stata statistical software version 12.0.

Subgroup analysis: Subgroup analysis was conducted to explore and explain the diversity (heterogeneity) among the results of different studies. We divided the study into several different subgroups based on the sample size, nation, cut-off value of NLR and so on.

Sensibility analysis: We will use STATA for sensitivity analysis.

Country(ies) involved: China.

Keywords: head and neck cancer, neutrophil-to-lymphocyte ratio, overall survival.

Contributions of each author:

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Author 4 - Chengliang Ren.

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