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INPLASY

Prognostic and clinicopathological role of pretreatment systemic inflammation response index (SIRI) in gastric cancer: a meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 01 June 2024 and was last updated on 01 June 2024.

INTRODUCTION

Review question / Objective The significance of systemic inflammation response index (SIRI) in prognosis prediction for gastric cancer (GC) cases remained conflicting according to previous studies. This work identified the precise effect of SIRI on predicting GC prognosis by conducting a meta-analysis.

Condition being studied We searched studies from PubMed, Embase, Web of Science, and Cochrane Library between inception and February 17, 2024. Effect of SIRI on predicting GC prognosis was evaluated by calculating combined hazard ratios (HRs) as well as 95% confidence intervals (CIs). Besides, combined odds ratios (ORs) and 95% CIs were determined for analyzing association of SIRI with GC clinicopathological characteristics.

METHODS

Participant or population Cases with pathological or histological diagnosis of GC.

Intervention Studies investigating the association of SIRI with survival outcomes of GC patients and hazard ratios (HRs) as well as 95% confidence intervals (CIs) are available or calculable by Tierney's method.

Comparator GC patients with normal level of SIRI.

Study designs to be included Cohort studies,including prospective and retrospective cohorts.

Eligibility criteria Studies below were included: (1) cases with pathological or histological diagnosis of GC; (2) SIRI was determined as monocyte counts × neutrophil counts/lymphocyte counts based on blood test; (3) studies investigating the association

of SIRI with survival outcomes of GC patients; (4) hazard ratios (HRs) as well as 95% confidence intervals (CIs) are available or calculable by Tierney's method(27); (5) the SIRI threshold was provided; and (6) English publications. Studies below were excluded: (1) reviews, letters, comments, case reports, and meeting abstracts; (2) those did not provide survival data; (3) those containing duplicate patients; and (4) animal studies.

Information sources We searched PubMed, Embase, Web of Science, and Cochrane Library to identify qualified studies between inception and February 17, 2024.

Main outcome(s) Overall survival (OS) and disease-free survival (DFS) served as primary and secondary survival endpoints separately.

Quality assessment / Risk of bias analysis Quality of eligible studies were assessed by adopting Newcastle-Ottawa Scale (NOS). NOS assesses study quality across 3 dimensions: selection, comparability, and outcome. The overall NOS score is 0-9, and studies with NOS score ≥6 are high-quality. Publication bias among enrolled articles was analyzed through Funnel plot, Egger's and Begg's tests.

Strategy of data synthesis Effect of SIRI on GC prognosis was analyzed through determining combined HRs and 95%CIs. Inter-study heterogeneities were assessed using Cochrane's Q test and I2 statistic. P ≥0.10 and I2≤50% suggested the absence of obvious heterogeneity, and then a fixed-effects model is adopted; or else, a random-effects model is utilized.

Subgroup analysis In this study, subgroup analyses stratified by various factors were conducted for evaluating impact of diverse subgroups on pooled effect.

Sensitivity analysis Through eliminating one publication and calculating new HRs, we performed sensitivity analysis for assessing if the results were stable and robust.

Language restriction English.

Country(ies) involved China.

Keywords systemic inflammation response index; gastric cancer; meta-analysis; prognosis; biomarker.

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