INPLASY

Prognostic Significance of Platelet Lymphocyte Ratio (PLR) in Gastric Cancer Patients Treated with Immune Checkpoint Inhibitors: A Systematic Review and Meta-analysis

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ADMINISTRATIVE INFORMATION

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 December 2023 and was last updated on 27 December 2023.

INTRODUCTION

*R*eview question / Objective This meta-analysis aimed to unveil the prognostic impact of PLR in this specific patient cohort.

Condition being studied Patients with gastric cancer confirmed through pathological examination, in advanced or locally advanced stages, and receiving immune checkpoint inhibitor (ICI) treatment.

METHODS

Participant or population Gastric cancer treated with ICIs.

Intervention Based on the value of Platelet-to-Lymphocyte Ratio (PLR).

Comparator The low levels of Platelet-to-Lymphocyte Ratio (PLR).

Study designs to be included Retrospective Cohort Study.

Eligibility criteria (1)Patients with gastric cancer confirmed through pathological examination, in advanced or locally advanced stages, and receiving immune checkpoint inhibitor (ICI) treatment;(2)Studies providing long-term survival data, including overall survival (OS) or progression-free survival (PFS), and reporting treatment response data, such as objective response rate (ORR) or disease control rate (DCR);(3)Studies published in English;(4)Studies providing hazard ratio (HR) or relative risk (RR) with a 95% confidence interval (CI).

Information sources PubMed, Embase, and the Cochrane Library.

Main outcome(s) Overall survival (OS) or progression-free survival (PFS), and reporting treatment response data, such as objective response rate (ORR) or disease control rate (DCR).

Quality assessment / Risk of bias analysis The Newcastle-Ottawa Scale (NOS) was employed to assess the quality of the studies.

Strategy of data synthesis RR was employed to assess the relationship between PLR and the outcomes of ORR and DCR in gastric cancer patients undergoing ICIs. HR and its associated 95% CI were used to evaluate the potential association of PLR with OS and PFS. Cochran's Q-test and I2 statistics were employed to assess heterogeneity among studies, and based on this, an appropriate effect model was selected. A random-effects model was chosen if I2 > 50% or p-value < 0.10 (Q-test), indicating significant heterogeneity. Otherwise, a fixed-effects model was applied.

Subgroup analysis Subgroup analyses were conducted based on treatment methods, sample size, cut-off values, and analysis models to further investigate the sources of heterogeneity.

Sensitivity analysis Sensitivity analysis was also performed to explore the impact of different studies on OS and PFS.

Country(ies) involved China (Department of General Surgery, The First Affiliated Hospital of Shandong First Medical University).

Keywords platelet-to-lymphocyte ratio ; overall survival ; progression-free survival ; gastric cancer ; immune checkpoint inhibitors.

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