

INPLASY

Platelet-to-lymphocyte ratio predicts survival of patients with hepatocellular carcinoma undergoing immune checkpoints inhibitors: A Meta-Analysis

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ADMINISTRATIVE INFORMATION

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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 16 May 2024 and was last updated on 16 May 2024.

INTRODUCTION

Review question / Objective The prognostic significance of the Platelet-to-Lymphocyte Ratio (PLR) in patients with hepatocellular carcinoma (HCC) undergoing treatment with immune checkpoint inhibitors (ICIs) remains uncertain. Therefore, a meta-analysis was conducted to assess the prognostic value of PLR in HCC patients receiving ICIs.

Condition being studied Despite advancements in diagnosis, staging, and treatment, HCC has a high recurrence rate of about 70%, with overall survival (OS) showing minimal improvement over the past two decades. The approval of anti-programmed cell death-1 (PD-1) antibodies nivolumab and pembrolizumab as immune checkpoint inhibitors (ICIs) has expanded the treatment options for HCC. However, responses to

ICIs vary among individuals, with not all advanced patients benefiting from them. The quest for predictive biomarkers of immunotherapy response in HCC remains a top priority.

METHODS

Participant or population (1) enrolled patients with HCC confirmed by histopathology (2) involved the administration of any form of ICIs.

Intervention The high level of PLR of HCC patients treated with ICIs.

Comparator The low level of PLR of HCC patients treated with ICIs.

Study designs to be included Retrospective, Prospective, RCT.

Eligibility criteria (1) enrolled patients with HCC confirmed by histopathology, (2) presented hazard ratios (HR) and 95% confidence intervals (CI) for OS or progression-free survival (PFS), or contained adequate data to compute HR and 95% CI, (3) involved the administration of any form of ICIs, and (4) reported the specified cut-off value of PLR prior to immunotherapy.

Information sources PubMed, Embase, and the Cochrane Library.

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

Quality assessment / Risk of bias analysis The quality of primary studies was evaluated independently by three investigators using the Newcastle–Ottawa Quality Assessment Scale (NOS).

Strategy of data synthesis Data on HR and 95% CI were gathered either directly from individual articles or computed as described previously if not shown directly. Statistical heterogeneity in the combined results was evaluated using Cochran's Q and I² methods. Our findings were deemed unaffected by heterogeneity if I² was less than 50% or p exceeded 0.10. Pooled estimates were calculated using a fixed-effects model in this case or a random-effects model was used.

Subgroup analysis Subgroup analyses were conducted based on country, treatment, sample size, cut-off value, and types of Cox regression analysis.

Sensitivity analysis Additionally, a sensitivity analysis was carried out by sequentially excluding each study to assess its impact on the overall results.

Country(ies) involved China (Department of Gastroenterology, The Third People's Hospital Affiliated to Fujian University of Traditional Chinese Medicine).

Keywords PLR, meta, prognosis, hepatocellular carcinoma, immune checkpoints inhibitors.

Contributions of each author

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