INPLASY PROTOCOL

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Prognostic and clinicopathological significance of systemic immune-inflammation index in cancer patients receiving immune checkpoint inhibitors: a meta-analysis

Wang, Y[1]; Ni, QQ[2].

Review question / Objective: We performed the present meta-analysis by collecting the most recent data, so that SII's prognostic value among ICI-receiving carcinoma patients could be fully clarified.

Condition being studied: Among malignant neoplasm patients taking immune checkpoint inhibitors (ICIs), it remains unknown how the systemic immune-inflammation index (SII) affects their clinical prognosis.

Information sources: Literature was retrieved in a systematic and holistic manner by utilizing online databases like Web of Science, PubMed, Cochrane Library and Embase between the dates of inception and January 1 of 2023.

INTRODUCTION

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METHODS

Participant or population: Patients were pathologically diagnosed with cancer and treated with ICIs.

Intervention: Available data of pretreatment SII.

Comparator: Cancer patients with low SII level.

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

Eligibility criteria: The inclusion criteria were as follows: (1) patients were pathologically diagnosed with cancer and treated with ICIs; (2) available data of pretreatment SII; (3) studies investigating the relationship between SII and prognosis of patients with cancer undergoing ICIs; (4) a cut-off value was identified to stratify patients as high/low SII groups; (5) any survival outcomes were reported including overall survival (OS), progression-free survival (PFS), recurrence-free survival (RFS) etc., (6) studies published in English language.

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Main outcome(s): Any survival outcomes were reported including overall survival (OS), progression-free survival (PFS), recurrence-free survival (RFS) etc.

Quality assessment / Risk of bias analysis: The enrolled studies were subjected to quality evaluation via the Newcastle–Ottawa Scale (NOS). This scale assesses the research quality regarding selection, comparability and prognosis. Studies scoring ≥ 6 on this 9-point NOS are considered to have high quality. Possible publication bias was evaluated through Begg's test.

Strategy of data synthesis: SII's prognostic significance among the ICI-receiving carcinoma patients was evaluated by estimating the combined HRs and 95% CIs. Cochran's Q test was employed to assess the inter-study heterogeneity by utilizing I2 statistics. In the case of insignificant heterogeneity (P > 0.05 for χ2 test or I2< 50%), a fixed-effect model was adopted. Otherwise, a random-effects model was selected.

Subgroup analysis: Heterogeneity source was identified by conducting subgroup analysis stratified by diverse variables.

Sensitivity analysis: Sensitivity assessment was performed by sequentially removing one study each time, so that individual study's influence on the overall results could be assessed.

Language restriction: English.

Country(ies) involved: China.

Keywords: immune checkpoint inhibitors; meta-analysis; SII; prognosis; evidence-based medicine.

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