INPLASY PROTOCOL

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Review Stage at time of this submission: Preliminary searches.

Conflicts of interest: None declared.

Association of systemic immune-inflammation index with grade and prognosis in glioma patients: a systematic review and meta-analysis

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Review question / Objective: The purpose of the present study was to conduct a meta-analysis assessing SII in terms of the prognostic significance and ability in differentiating different grade of in patients with glioma.

Participant or population: Glioma patients.

Information sources: PubMed, EMBASE, Cochrane Library databases, Web of Science, Chinese National Knowledge Infrastructure (CNKI) and Wanfang databases were searched to identify relevant literature evaluating the association of SII with grade and survival in patients with glioma.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 12 April 2022 and was last updated on 12 April 2022 (registration number INPLASY202240072).

INTRODUCTION

Review question / Objective: The purpose of the present study was to conduct a meta-analysis assessing SII in terms of the prognostic significance and ability in differentiating different grade of in patients with glioma.

Condition being studied: Glioma.

METHODS

Participant or population: Glioma patients.

Intervention: Higher value of systemic immune-inflammation index.

Comparator: Lower value of systemic immune-inflammation index.

Study designs to be included: Retrospective studies.

Eligibility criteria: (1) patients were diagnosed with glioma pathologically; (2) either preoperative or postoperative peripheral blood test was performed; (3) sensitivity, specificity and area under curve (AUC) value were provided in differentiating different grades of glioma; or hazard ratio (HR) and 95% confidence interval (CI) for survival were accessible in the article directly from univariate analysis or multivariate analysis.

Information sources: PubMed, EMBASE, Cochrane Library databases, Web of Science, Chinese National Knowledge Infrastructure (CNKI) and Wanfang databases were searched to identify relevant literature evaluating the association of SII with grade and survival in patients with glioma.

Main outcome(s): Different grade, PFS and OS in glioma patients.

Quality assessment / Risk of bias analysis: For studies assessing the grade of glioma, the process of quality evaluation was performed based on Quality assessment of diagnostic accuracy studies 2 (QUADAS-2) guidelines. For studies assessing the prognostic value of SII in glioma patients, the Newcastle-Ottawa Scale (NOS) tool was used to evaluate the quality and risk of bias of incorporated studies.

Strategy of data synthesis: Progression free survival (PFS) and overall survival (OS) were analyzed by the HR. Forest plots were drawn to obtain the pooled HR, which was considered statistically significant if the 95% CI did not overlap 1 and p value was less than 0.05. Cochran's Q test and Higgins I-squared statistic were undertaken to assess the heterogeneity of the included studies and a P heterogeneity50% was considered as significant heterogeneity and random- or fixed-effect models were used when the heterogeneity was or was not significant.

Subgroup analysis: Subgroup analyses based on grade, sampling time, cut-off value, sample size and time of follow-up were conducted to explore potential sources of heterogeneity.

Sensitivity analysis: Sensitivity analysis was performed by excluding a single study at a time to examine the robustness of the results.

Country(ies) involved: China.

Keywords: glioma; systemic immune-inflammation index; grade; prognosis.

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