INPLASY

Prognostic and clinicopathological role of pretreatment systemic immune-inflammation index in patients with oral squamous cell carcinoma: 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 10 September 2023 and was last updated on 10 September 2023.

INTRODUCTION

Review question / Objective Many studies have explored the prognostic value of systemic immune-inflammation index (SII) in patients with oral squamous cell carcinoma (OSCC), however, the results were inconsistent. We therefore performed a meta-analysis to identify the accurate prognostic effect of SII in OSCC.

Condition being studied The electronic databases of PubMed, Embase, Web of Science, and Cochrane Library were thoroughly searched from their inceptions to August 20, 2023. The combined HRs and 95%CIs were used to estimate the prognostic value of SII in patients with OSCC. The correlations between SII and clinicopathological features of OSCC patients were evaluated by pooling odds ratios (ORs) and 95%CIs.

METHODS

Search strategy The search strategies were as follows: (systemic immune-inflammatory index or SII or systemic-immune-inflammation index or systemic immune-inflammation index) and (oral squamous cell carcinoma or OSCC or tongue cancer or oral cancer or oral carcinoma or mouth cancer or oral cavity cancer or gingiva cancer or lip cancer). Only publications in English were considered. Additionally, we also manually retrieved the reference lists of the publications to identify potentially relevant studies.

Participant or population Patients were pathologically diagnosed with primary OSCC.

Intervention Studies explored the association between pretreatment SII and survival outcomes in OSCC and the hazard ratios (HRs) and 95%

confidence intervals (CIs) were reported or can be calculated based on given data.

Comparator OSCC patients with low level of SII.

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 primary OSCC; (2) studies explored the association between pretreatment SII and survival outcomes in OSCC; (3) the hazard ratios (HRs) and 95% confidence intervals (CIs) were reported or can be calculated based on given data; (4) a cut-off value for SII was identified; and (5) studies published in English language. The exclusion criteria were: (1) meeting abstracts, reviews, letters, comments, and case reports; (2) studies in which data were unavailable or insufficient; (3) studies with overlapped patients; and (4) animal studies.

Information sources The electronic databases of PubMed, Embase, Web of Science, and Cochrane Library were thoroughly searched from their inceptions to August 20, 2023.

Main outcome(s) The primary survival endpoint was overall survival (OS) and the secondary survival endpoint was disease-free survival (DFS).

Additional outcome(s) The correlations between SII and clinicopathological features of OSCC patients were evaluated by pooling odds ratios (ORs) and 95%CIs.

Quality assessment / Risk of bias analysis The methodological quality of each included study was assessed by using the Newcastle–Ottawa Scale (NOS). The NOS consists of three parts: selection (0–4 points), comparability (0–2 points), and outcome assessment (0–3 points). The NOS scores range from 0 to 9 and studies with NOS scores ≥ 6 are regarded as high-quality studies. The publication bias was assessed by using Begg's test and Egger's test.

Strategy of data synthesis The combined HRs and 95%CIs were used to estimate the prognostic value of SII in patients with OSCC. The heterogeneity among studies were evaluated by using Cochrane's Q test and I2 statistical test. When the heterogeneity was statistically significant ($I2>50\%$ or $P<0.10$), the random-effects model was used. Otherwise, the fixed-effects model was applied.

Subgroup analysis Subgroup analysis stratified by various factors was conducted to detect then source of heterogeneity and for further investigations.

Sensitivity analysis Using sensitivity analysis, we compare the combined effects after excluding the included literature sequentially to determine if each single study affected the overall outcome.

Language restriction English.

Country(ies) involved China.

Keywords SII; oral squamous cell carcinoma; meta-analysis; evidence-based medicine; prognostic markers.

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