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Pre-treatment Systemic Immune-Inflammation Index and Lymphocyte-to-monocyte Ratio as Prognostic Factors in Oral Cavity Cancer: A Meta-Analysis

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ADMINISTRATIVE INFORMATION

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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 01 March 2024 and was last updated on 01 March 2024.

INTRODUCTION

Review question / Objective The predictive implications of the pre-treatment systemic immune-inflammation index (SII) and lymphocyte-to-monocyte ratio (LMR) in oral cavity cancer have been investigated extensively, however, the findings are conflicting. To assess the predictive importance of SII and LMR in patients with oral cavity cancer, a comprehensive Meta-analysis of the literature was conducted.

Condition being studied Oral cavity cancer is expected to be the eighteenth most often diagnosed cancer and the sixteenth main cause of cancer-related mortality globally, with more than 370,000 new cases and 170,000 deaths per year, according to global cancer data. Despite advances in illness detection, staging, and therapy, 5-year overall survival (OS) has not grown appreciably during the last two decades. It is beneficial to increase the cure rate of oral cavity cancer and patient survival quality by designing a suitable treatment plan based on patients' predicted survival time. As a result, finding novel prognostic biomarkers to predict therapy response or long-term survival in patients with oral cavity cancer is critical.

METHODS

Participant or population Oral cavity cancer patients.

Intervention Based on the value of SII/LMR.

Comparator The low levels of SII/LMR.

Study designs to be included Retrospective Cohort Study.

Eligibility criteria (a) included patients with histopathologically confirmed oral cavity cancer; (b) reported hazard ratios (HRs) and 95 % confidence intervals (CIs) for overall survival (OS), or disease-free survival (DFS); or included sufficient data to calculate HR and 95% CI; and (c) published in English.

Information sources PubMed, Embase, and the Cochrane Library.

Main outcome(s) Overall survival (OS) and disease-free survival (DFS).

Quality assessment / Risk of bias analysis Three investigators individually assessed the quality of all primary studies using the Newcastle-Ottawa Quality Assessment Scale (NOS).

Strategy of data synthesis We calculated the pooled HRs from each study in multivariate models where available. Cochran Q and I2 statistical techniques were used to analyze the statistical heterogeneity of pooled findings. If $I2 > 50\%$ or $p > 0.10$, we regarded our results to be unaffected by heterogeneity. In this scenario, the pooled estimates were calculated using a fixed-effects model; otherwise, a random-effects model was employed.

Subgroup analysis Subgroup analysis was also performed based on nation, sample size, cut-off value, and Cox regression analysis method.

Sensitivity analysis Furthermore, a sensitivity analysis was performed by successively eliminating each study to analyze the impact of each individual study on the aggregate results.

Country(ies) involved China (Key Laboratory of Oral Diseases & Fujian Provincial Engineering Research Center of Oral Biomaterial & Stomatological Key Lab of Fujian College and University, School and Hospital of Stomatology, Fujian Medical UniversitySchool and Hospital of Stomatology, Fujian Medical University).

Keywords Systemic immune-inflammation index, Lymphocyte-to-monocyte ratio, Prognosis, Oral cavity cancer, Meta-analysis.

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