

INPLASY PROTOCOL

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Conflicts of interest:
None declared.

INTRODUCTION

Review question / Objective: By comparing the concentration of biomarkers in saliva or serum samples from patients with oral leukoplakia, patients with oral cancer or healthy people, this study tried to find potential saliva and serum biomarkers for

Potential noninvasive biomarkers for malignant transformation of oral leukoplakia: A systematic review and meta-analysis

Huang, Y¹; Zhang, Q²; Guo, Z³; Deng, G⁴; Chen, R⁵; Zheng, Y⁶.

Review question / Objective: By comparing the concentration of biomarkers in saliva or serum samples from patients with oral leukoplakia, patients with oral cancer or healthy people, this study tried to find potential saliva and serum biomarkers for malignant transformation of oral leukoplakia.

Condition being studied: The rising cancer incidence in patients with oral leukoplakia (OL) highlights the absolute importance of potential biomarkers for high-risk individuals and lesions because the biomarkers are so useful in developing personalized management strategies for OL patients. This study systematically searched and analyzed the existing literature on potential saliva and serum biomarkers for OL malignant transformation.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 30 May 2022 and was last updated on 30 May 2022 (registration number INPLASY202250166).

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personalized management strategies for OL patients. This study systematically searched and analyzed the existing literature on potential saliva and serum biomarkers for OL malignant transformation.

METHODS

Participant or population: The samples were obtained from individuals with oral leukoplakia, proliferative verrucous leukoplakia.

Intervention: Oral leukoplakia.

Comparator: Health control or oral cancer.

Study designs to be included: Case-control.

Eligibility criteria: The inclusion criteria for selecting the articles were: The articles reported research into biomarkers in human saliva or serum samples. The samples were obtained from individuals with oral leukoplakia, proliferative verrucous leukoplakia. These articles reported concentrations of biomarkers in LP patients as well as samples from oral cancer and healthy controls, and their association with possible malignant degeneration.

Information sources: PubMed, Scopus were searched for studies published up to April 2022. We also checked the reference list of all identified articles for additional relevant studies, including hand-searching reviews and previous meta-analyses.

Main outcome(s): The primary outcome of this study was the difference of biomarker concentrations in saliva or serum samples from healthy controls, oral leukoplakia and oral cancer populations.

Quality assessment / Risk of bias analysis: The Newcastle-Ottawa Scale (NOS) was used to evaluate the quality of included studies. It evaluates case-control studies through three categories and eight items, including study population selection, comparability, exposure evaluation or

outcome evaluation. NOS adopts the semi quantitative principle of star system in the evaluation of study quality, with a full score of 9 stars.

Strategy of data synthesis: Cohen's d with 95% CI were calculated and pooled using the inverse variance heterogeneity method. The Chi2 test and the Higgins I2 statistics were used to assess heterogeneity between the included studies. Meta-analysis was conducted in MetaXL 5.3 (EpiGearInternational).

Subgroup analysis: None.

Sensitivity analysis: Sensitivity analyses were performed by a leave-one-out analysis.

Country(ies) involved: China.

Keywords: oral leukoplakia, noninvasive, biomarkers, malignant transformation, oral cancer.

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