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Immune Markers Of Malignant Progression In Oral Dysplastic Lesions

Alexandria, VA – A study investigating the molecular and histopathological changes as possible biomarkers for the early detection of oral squamous cell carcinoma (OSCC) and the identification of dysplastic lesions with high malignant potential was presented at the 54th Annual Meeting of the AADOOCR, which was held in conjunction with the 49th Annual Meeting of the Canadian Association for Dental Research, on March 12-15, 2025 in New York, NY.

The abstract, “Immune Markers of Malignant Progression in Oral Dysplastic Lesions” was presented by Yuxiao Jarvan Jiang of the University of California, San Francisco during the “Current Topics and Emerging Trends in Oral Biology” Poster Session that took place on Saturday, March 15, 2025 at 11 a.m. EDT (UTC-4).

OSCC is one of the most common cancers worldwide, with a high mortality rate largely caused by late diagnosis. Oral dysplastic lesions represent an early stage of malignant transformation, and a proportion of these lesions progress to OSCC. However, no reliable biomarker currently exists to predict which patients will progress from the dysplastic stage to malignant OSCC. There is an urgent need for a comprehensive investigation into the molecular and histopathological changes that could serve as biomarkers for early detection of OSCC and for identifying dysplastic lesions with high malignant potential.

This study investigated immune-related changes associated with the malignant progression of non-progressive versus progressive dysplastic lesions and their corresponding oral cancers. It found significant alterations in the immune microenvironments of progressive oral dysplastic lesions compared to non-progressive ones. These findings highlighted the critical role of the tumor microenvironment in the progression of oral dysplasia to malignancy. The identification of key immunoregulatory genes associated with malignant transformation points to their potential as biomarkers for cancer progression. These insights lay the groundwork for future research into pathway analysis and a deeper mechanistic understanding of OSCC development.

About AADOOCR

The American Association for Dental, Oral, and Craniofacial Research is a nonprofit organization with a mission to drive dental, oral, and craniofacial research to advance health and well-being. AADOOCR represents the individual scientists, clinician-scientists, dental professionals, and students based in academic, government, non-profit and private-sector institutions who share our mission. AADOOCR is the largest division of the International Association for Dental, Oral, and Craniofacial Research. Learn more at www.aadocr.org.