

Immunology and Oral Cancer: An Overview

Gokul Sridharan *

**YMT Dental College and Hospital, India.*

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ABSTRACT

Carcinogenesis is a multistep process characterized by alterations in various genetic and epigenetic events. Oral squamous cell carcinoma is a common oral malignancy that may develop either *de novo* or from oral potential malignant disorders as a consequence of multiple molecular and cellular events. An important hallmark identified for tumor development is the acquired ability of developing tumors to escape immune control of the body thereby progressing unhindered and leading to severe morbidity and mortality. The immune system of the body represents a complex assortment of interacting cells and proteins and literature data accumulated over the years suggest the development of host immune response to various human cancers. The role of immune system in human carcinogenesis is often regarded as a double-edged sword wherein the body's immune system is known to nullify the harmful effects of cancer cell proliferation while it may also promote tumor growth. Various cellular mediators of immunity such as interferon- γ , mast cells, TNF- α , tumor associated macrophages and eosinophils were evaluated in OSCC but not much has been proved. One of the important cellular mediators which also possess therapeutic implications is the family of interferons. Interferons are a multi-gene family of inducible cytokines having an important role in cell growth inhibition, modulation of cell differentiation and in the elimination phase of cancer immuno-editing. Owing to the scarcity of scientific literature, a comprehensive assessment is required to prove the role of these immune cells in OSCC. The need of the hour is to identify the therapeutic potential of immune regulators such as IFN- γ to enable the host to effectively combat the tumor cell and its associated morbidity. Targeted therapy aimed at action of IFN- γ against tumor cells should be clinically evaluated as a treatment regimen to support the standard treatment protocols thereby reducing morbidity and mortality.

Keywords: Immune system, Oral squamous cell carcinoma, Oral potentially malignant disorders, Immunosurveillance, Interferon

Corresponding author: Gokul Sridharan, YMT Dental College and Hospital, India, E-mail: drgokuls@gmail.com

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