



Viral-Induced Carcinopathogenesis in Oral Squamous Cell Carcinoma

10

Harpreet Kaur, Aanchal Kakkar, Sunny Kala, Muzafar A. Macha, and Deepika Mishra

Abstract

Oral cancer is multifactorial in etiology with tobacco being the most associated etiological factor. A fraction of oral cancers are associated with infectious agents, and 12% of oral cancer burden is attributed to viral etiology. Various oncogenic DNA viruses (Human Papilloma Virus (HPV), Human Herpesvirus-8 (HHV-8), Merkel cell polyomavirus (MCPV), and Hepatitis B Virus (HBV)) and oncogenic RNA viruses (Hepatitis C Virus (HCV) and human T-lymphotropic virus type 1 (HTLV-1)) have been designated as class I carcinogens by International Agency for Research on Cancer (IARC). The oncogenic viruses found to be strongly associated with oral squamous cell carcinoma (OSCC) are HPV and HSV. Other less commonly associated viruses include EBV and HCV. HPV and herpesviruses are most extensively studied “synergistic viruses” involved in OSCC. Viruses such as high-risk HPV play a role in the initiation as well progression of OSCC. Understanding the role of viruses in the pathogenesis of OSCC can help in exploring their usage as potential targets for treatment.

H. Kaur · S. Kala · D. Mishra (✉)

Division of Oral Pathology and Microbiology, Center for Dental Education and Research, All India Institute of Medical Sciences, New Delhi, Delhi, India

e-mail: hrprtarora@gmail.com; drsunnykala86@gmail.com; deepika1904@gmail.com

A. Kakkar

Department of Pathology, All India Institute of Medical Sciences, New Delhi, Delhi, India

e-mail: aanchalkakkar@gmail.com

M. A. Macha

Watson-Crick Centre for Molecular Medicine, Islamic University of Science and Technology, Pulwama, Jammu & Kashmir, India

e-mail: muzafar.iiiims@gmail.com