

Significant association of high-risk human papillomavirus (HPV) but not of p53 polymorphisms with oral squamous cell carcinomas in Malaysia

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Abstract:

Purpose: The purpose of this study was to evaluate the role of HPV and p53 polymorphisms in oral squamous cell carcinomas (OSCC) affecting Malaysian population. **Methods:** We analysed frozen samples from 105 OSCC as well as 105 oral specimens derived from healthy individuals. PCR assays targeting two regions of the virus were used. PCR amplification for the analysis of p53 codon 72 arginine/proline alleles was carried out in a separate reaction. **Results:** HPV DNA was detected in 51.4% OSCC samples, while 24.8% controls were found to be HPV positive. HPV was found to be significantly associated with OSCC ($P < 0.001$, OR = 4.3 after adjustment for habits) when compared to controls. High-risk HPV was found to be significantly associated with OSCC cases ($P < 0.05$). Demographic profiles of age, gender, race and habits were not associated with HPV presence in cases and controls. However, significantly less HPV positivity was seen in poorly differentiated compared to well-differentiated OSCCs. No significant association was found between HPV positivity and p53 polymorphisms in cases and control groups. Additionally, we found no association of codon 72 polymorphism with oral cancer. **Conclusions:** This study indicates that high-risk HPV infection is one of the contributing factors for OSCCs. HPV 16 was the predominant type found in Malaysian patients with OSCC. Further, we did not find any association between p53 codon 72 polymorphism and HPV infection or between the p53 polymorphism and the risk of oral cancer.

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