

High-risk human papillomavirus (HPV) screening and detection in normal, healthy patient saliva samples: a pilot cluster randomized study

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Human papillomavirus (HPV) is the primary etiological factor that transforms cervical epithelia into cancer. The presence of HPV in oral cancers suggests that HPV may play a similar role in transforming the oral epithelia. In addition to Epstein-Barr and Cytomegalovirus, new evidence has also revealed the frequent presence of high-risk HPV strains in breast carcinoma biopsies. Although epidemiologic studies suggest tobacco and alcohol use, and genetic predisposition are likely responsible for oral and breast carcinogenesis, concomitant HPV infection may be a significant factor that mediates growth and development. Although HPV may be transmitted from the oral cavity to the breast through direct contact, little evidence to date regarding oral HPV prevalence among health adults in the United States is available. The current study involved a non-invasive HPV screening of normal healthy adults at a US dental school, randomly selected to participate in a clustered pilot study. DNA was isolated from saliva samples and screened for HPV16 using qPCR. Chi-square analysis revealed the random patient sample was representative of the general clinic population with respect to gender, race and age ($p < 0.05$). Four patient samples were found to harbor HPV16 DNA, representing 3.9% of the total ($n = 102$); all four were female and Hispanic. This provides new information about oral HPV status, which may help to contextualize results from other studies demonstrating increasing oral cancer rates among females and minorities and in some geographic areas that may be associated with risk factors in addition to tobacco and alcohol use.

Biography

Karl Kingsley completed his PhD in 2001 and subsequently pursued postdoctoral studies at Stanford University in the School of Medicine, Division of Hematology. Dr. Kingsley is currently an Associate Professor of Biomedical Sciences at the UNLV School of Dental Medicine, where he teaches and directs an oral cancer research laboratory, specifically investigating high-risk HPV infection. He recently earned a Master of Public Health (MPH) in Occupational and Environmental Health and has published more than 25 papers in peer-reviewed journals. In addition, Dr. Kingsley is an avid supporter of the American Cancer Society in Las Vegas, Nevada.