

Oral HPV Strongly Tied to Head and Neck Cancer

BY MARY ANN MOON
Contributing Writer

Oral human papillomavirus infection is strongly associated with head and neck cancer, reported Gypsyamber D'Souza, Ph.D., of Johns Hopkins Bloomberg School of Public Health, Baltimore, and her associates.

"Although a cause-and-effect relationship cannot be inferred from a single study, our findings confirm and extend those of

other" studies, the researchers noted.

In an editorial comment accompanying the report, Stina Syrjänen, D.D.S., of the University of Turku (Finland), said that the link between oral HPV and squamous-cell oropharyngeal cancers, which "has been under investigation for at least 20 years," now appears to be firmly established.

Questions now arise as to whether groups such as smokers and alcohol drinkers, who are at high risk for head and neck cancers, should be screened for oral

HPV, Dr. Syrjänen said, and whether intraepithelial neoplastic lesions in the head and neck region, which are considered to be cancer precursors, should be treated differently if they are HPV positive.

It is also worth considering the possibility that some head and neck cancers might be prevented by HPV vaccination, Dr. Syrjänen added (N. Engl. J. Med. 2007; 356:1993-5).

Dr. D'Souza and her associates conducted a case-control study using data

from a longitudinal cohort study of 130 consecutive patients with head and neck cancer who were treated at the Johns Hopkins otolaryngology clinic during 2000-2005 (N. Engl. J. Med. 2007; 356:1944-56). Most of the cancers involved the base of the tongue and the tonsils. They assessed markers of HPV infection in 100 of these patients and in 200 age-, sex-, and race-matched control subjects who were treated at the same clinic for benign conditions.

Oropharyngeal cancer was strongly associated with current oral HPV infection and with previous HPV exposure, as determined by serologic testing. The link was particularly strong with HPV-16, but was also noted with any of 37 HPV types tested, the researchers said.

HPV-positive head and neck cancer also was strongly associated with high-risk sexual behaviors, including a large number of lifetime sexual partners in either oral sex or vaginal sex, early age at first intercourse, frequent casual sex, and infrequent use of condoms.

In addition, HPV-16 DNA was specifically localized to tumor-cell nuclei in 72 of 100 tumor specimens examined. This finding was further corroborated by the finding of a high prevalence (64%) of antibodies to HPV-16 oncoproteins E6 and E7.

"We found that exposure to HPV increased the association with oropharyngeal cancer regardless of tobacco and alcohol use, but we uncovered no evidence of synergy between exposure to HPV and tobacco or alcohol use. For these reasons, our data suggest two distinct pathways for the development of oropharyngeal cancer: one driven predominantly by the carcinogenic effects of tobacco or alcohol (or both), and another by HPV-induced genomic instability," Dr. D'Souza and her associates said.

Taken together with the results of previous studies, these findings "provide a rationale for HPV vaccination in both boys and girls—since oropharyngeal cancers occur in men and women," they noted.

Their study findings also indicate that oral HPV infection is sexually acquired, though not necessarily from oral-genital contact alone. Mouth-to-mouth and other means of transmission cannot be ruled out. It is possible that "the widespread oral sexual practices among adolescents" may be contributing to annual increases in the incidence of tonsillar and base-of-tongue cancers noted in the United States since 1973, they added. ■

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