Data Strengthen Link Between HPV, Oral Cancer

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Researchers in Montreal have reported new evidence supporting a strong causal association between human papillomavirus infection and tonsil-related oral cancers.

The study also found that human papillomavirus (HPV) 16 seropositivity contributes substantial independent risk prediction. "HPV 16 seropositivity may thus serve as a surrogate marker for the totality of HPV exposure that is relevant in oral carcinogenesis," wrote Dr. Javier Pintos and his associates from the division of cancer epidemiology at McGill University.

Additionally, while some researchers have reported a positive correlation between markers of sexual activity and oral cancers, this study found no such association (Oral Oncol. 2008;44:242-50).

The investigation, as part of a multicenter study coordinated by the International Agency for Research on Cancer, followed a hospital-based case-control design.

A total of 72 patients with newly diagnosed squamous cell carcinoma of the mouth and 129 controls were recruited. Among patients, the most common cancer site was the tongue (21 patients), followed by the floor of the mouth (12) and palatine tonsil (12), "other" and "unspecified" parts of the mouth (18), the palate (4), the gums (2), the oropharynx (2), and the inner lip (1), Dr. Pintos and his coinvestigators said.

Patients ranged in age from 25 to 84 years, though most were between 55 and 74; men accounted for more than 70%.

As expected, tobacco smoking and alcohol consumption were higher among patients, compared with controls. Controls were selected from the same hospitals where patients had been recruited but did not have personal histories of cancer nor admitting conditions related to tobacco or alcohol. Heavy smokers (more than 49 pack-years) represented 39% of patients and 16% of controls, and more than half of patients and 17% of controls were categorized as heavy drinkers.

HPV DNA was detected in 6 of 129 controls (5%) and 14 of 72 patients (19%). Most viral infections among patients harbored high-risk HPV types (13 of 14 samples), compared with 4 of the 6 HPV-positive controls, the investigators said, adding that HPV 16, which was not detected among controls, was found in 13 of the 14 positive samples from the oral cancer arm.

Other studies have found that, in the oral cavity, the tonsils appear to be preferentially infected by HPV, the authors said. "In addition to the epidemiological evidence, there is consistent biological evidence that HPV-positive cancers arising from the palatine and lingual tonsils are a distinct entity etiologically linked to infection by high-risk HPV types, especially HPV 16."

On the other hand, there is scant biologic evidence linking HPV infection and cancers of the oral cavity not related to the lingual and palatine tonsils, and the proportion of nontonsillar cancers of the mouth attributable to HPV infection is likely to be small, they wrote.

"The association found in this investigation between HPV and cancers of the palatine tonsils and base of tongue seem to be genuine," the authors said, noting that the association is independent from the influence of smoking and alcohol, the two established causal factors for oral cancers.

The validity of the association was further supported through the consistent use of both polymerase chain reaction and serologic techniques, Dr. Pintos and his associates wrote.

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