

## Spotlight

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### Tonsillar Cancer and HPV

Rotnáglová *et al.*

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Infection with sexually transmitted high-risk human papillomavirus (HR HPV) causes the majority of cervical cancers. Recently, HR HPV infection has also been linked to head and neck squamous cell cancers, particularly tonsillar cancer, whose incidence has been rising steadily independently of the two greatest risk factors, smoking and alcohol consumption. In their prospective study, which analyzed a well-defined cohort of 109 patients with primary tonsillar cancer, Rotnáglová *et al.* detected HPV DNA in 65 % of tumors, with HPV16 being the most commonly found serotype.

Two viral proteins, E6 and E7, which bind and inactivate the tumor suppressors p53 and pRb, respectively, are largely responsible for the onset and persistence of the malignant process. Not surprisingly, HPV16 E6\*I mRNA could be detected in 93% of samples positive for HPV16 DNA and in none of the HPV-negative tumors. The entire cohort showed a high and statistically significant correlation between HPV DNA and/or RNA status and seropositivity to E6/E7 oncoproteins. The presence of E6/E7 antibodies also correlated with significantly better patient survival, providing additional support for the previous finding that patients with HPV-positive tonsillar cancer appear to have a better prognosis and thus may require a different therapeutic approach than those with HPV-unrelated tumors.

Taken together these results confirm that oropharyngeal cancer can now be placed in the category of "virally mediated cancers," along with the HPV-related cervical, anal, vulvar, and penile cancers and the Epstein Barr virus-associated nasopharyngeal cancer and lymphomas. As such, the issue of HPV vaccination will need to be revisited, and future studies will have to take into account all of the HPV-related cancers, not only cervical cancer.