

Impact of HPV vaccination on oral HPV infections among young adults in the U.S.

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Abstract Disclosures

Background:

The incidence of HPV-positive oropharyngeal cancers has risen in recent decades among US men. The potential impact of HPV vaccines on oral HPV infections has yet to be evaluated in efficacy-trials or surveillance studies.

Methods:

To evaluate the impact of prophylactic HPV vaccination on oral HPV infections in the US population, we conducted a cross-sectional study among men and women aged 18-33 years ($n = 2,627$) in the National Health and Nutrition Examination Survey, 2011-2014. We examined the effect of self-reported receipt of ≥ 1 vaccine dose on oral HPV infection (vaccine-types 16/18/6/11) prevalence among vaccinated vs. unvaccinated individuals. Additional outcomes included percent reduction in infection-prevalence among vaccinated individuals and population-level effectiveness of vaccination. Analyses accounted for the complex sampling design. Comparisons between vaccinated and unvaccinated individuals were conducted using binary logistic regression, with adjustment for age, gender, and race. Statistical significance was assessed using a quasi-score test.

Results:

During 2011-2014, 18.3% of the US population aged 18-33 years reported receipt of ≥ 1 HPV vaccine-dose prior to age 26 (29.2% in women and 6.9% in men; $P < 0.001$). The prevalence (population-weighted) of oral HPV16/18/6/11 infections was significantly reduced in vaccinated vs. unvaccinated individuals (0.11% vs. 1.61%; $P = 0.008$), corresponding to an estimated 88.2% (95%CI = 5.7%-98.5%) reduction in prevalence. Notably, oral HPV16/18/6/11 prevalence was significantly reduced in vaccinated vs. unvaccinated men (0.0% vs. 2.13%; $P = 0.007$). In contrast, prevalence for 33 non-vaccine HPV types was similar (3.98% vs. 4.74%; $P =$

Conclusions:

HPV vaccination substantially reduced vaccine-type oral HPV infection prevalence among young adults (ages 18-33 years) in the US population during 2011-2014. However, due to low vaccine uptake, population-level effectiveness was modest overall and particularly low in men.

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