COMPARISON OF HPV PREVALENCE BETWEEN HPV-VACCINATED AND NON-VACCINATED YOUNG ADULT WOMEN (20-26 YEARS)

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Background

There is some concern about the effectiveness of the HPV vaccine when administered after the recommended age of 11-12 years due to the risk of prior HPV infection. This study used National Health and Nutrition Examination Survey (NHANES) data to evaluate the effectiveness of HPV vaccination among women 20-26 years of age.

Methods

This cross-sectional study examined 592 young women (20-26 years) with complete information on HPV prevalence and HPV vaccination status from NHANES 2007-2010. Vaginal swab specimens were analyzed for HPV DNA by L1 consensus polymerase chain reaction followed by type-specific hybridization. Serum antibodies to HPV 6, 11, 16 and 18 were detected by immunoassay. Multivariate logistic regression models controlling for sociodemographic characteristics and sexual behaviors were used to compare HPV prevalence between vaccinated and unvaccinated women.

Results

Among vaccinated women, the prevalence of seropositivity was high for HPV 6, 11, 16, or 18. Moreover, after controlling for past sexual behaviors, vaccinated women had a lower prevalence of vaccine types than unvaccinated women. This association became stronger when the number of recent sexual partners was controlled for. However, vaccinated women had a higher prevalence of nonvaccine high-risk types than unvaccinated women (61.5% vs 39.7%, prevalence ratio 1.55, 95% CI 1.22-1.98). After adjusting for the number of recent sexual partners, the difference in prevalence of nonvaccine high-risk types was reduced, but remained significant. Among vaccinated women, those who received ≥2 doses of HPV vaccine were less likely to have vaccine-type HPV infection compared to women who only received one dose (8.6% vs 16.9%), and were more likely to be seropositive for antibodies to HPV 6 and HPV 18, but not HPV 11 or HPV 16.

Conclusion

HPV vaccination was effective against all 4 vaccine types in young women. However, vaccinated women had a higher prevalence of nonvaccine high-risk types.