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Authors
Mullins, TL, Kowalczy, Wilson, CM, Rudy, BJ, Sucharew, H, Kahn, JA

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Abstract
BACKGROUND: Little is known about the incidence of anal human papillomavirus (HPV) infection and related sequelae, as well as factors associated with these outcomes, among adolescents who are HIV infected versus HIV uninfected but at risk.

METHODS: We analyzed the data from a multisite US study, the Reaching for Excellence in Adolescent Care and Health Project. Adolescents aged 12 to 18 years who were behaviorally HIV infected (n = 319) or HIV uninfected but at risk (n = 177) were recruited. Incidence rates for anal HPV, high-risk anal HPV, anogenital warts, and anal dysplasia were calculated using Poisson modeling. Factors associated with these outcomes were examined using Cox proportional hazards modeling.

RESULTS: Mean age at entry was 16.8 years; mean (SD) follow-up time for detection of anal HPV was 22.4 (10.8) months. Most participants (76%) were female; 70% were black non-Hispanic. HIV-infected (vs. HIV-uninfected) women had a significantly higher incidence of anal HPV (30 vs. 14 per 100 person-years; P = 0.002), high-risk anal HPV (12 vs. 5.3 per 100 person-years; P = 0.04), and anogenital warts (6.7 vs. 1.6 per 100 person-years; P = 0.002) but not anal dysplasia. Although incidence rates were higher for these outcomes among HIV-infected
versus HIV-uninfected men, the differences were not statistically significant. Among women, factors associated with anal HPV and related sequelae differed by HIV status and included biological, behavioral, and HIV-related factors. No factors were associated with outcomes in men.

**CONCLUSIONS:** HIV-infected versus HIV-uninfected adolescent women had higher rates of anal HPV and anogenital warts. Because HIV-infected youth are at increased risk of these outcomes, enhanced HPV prevention efforts such as vaccination are warranted for this group.

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