

Epidemiology of anal human papillomavirus infection and high-grade lesions in 29 238 men, according to HIV status, sexuality, and age: a collaborative pooled analysis of 62 studies

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Background Robust age-specific estimates of anal human papillomavirus (HPV) and high-grade squamous intraepithelial lesions (HSIL) in HIV-positive and HIV-negative men can inform anal cancer prevention efforts. **Methods** We reanalysed individual-level data from 62 studies totalling 29,238 men across four groups: HIV-positive men who have sex with men (MSM), HIV-negative MSM, HIV-positive men who have sex with women (MSW) and HIV-negative MSW. Pooled estimates of anal high-risk (HR) HPV, and HSIL or worse (HSIL+), were compared using adjusted prevalence ratios (aPR).

Findings Anal HPV prevalence was lowest among HIV-negative MSW (HPV16=1.8%;HR-HPV=6.9%), followed by HIV-positive MSW (8.7%;26.9%) and HIV-negative MSM (13.6%;41.0%), and highest in HIV-positive MSM (28.4%;74.5%). In HIV-positive MSM, HPV16 prevalence increased from 15–18 (5.7%) to 23–24 years (29.0%) (ptrend=0.011), then declined from 25–34 (31.6%) to ≥55 years (22.7%) (ptrend<0.001). HPV16 in HIV-negative MSM also increased from 15–18 (6.8%) to 23–24 years (13.9%) (ptrend=0.009), plateauing thereafter (ptrend=0.688). Similar age-specific patterns were observed for HR-HPV. No significant differences were found by age for either HIV-positive or HIV-negative MSW. HIV was a determinant of HSIL+ (aPR=1.54, 95%CI 1.36–1.73) and HPV16-positive HSIL+ (1.66, 1.36–2.03) among MSM, even when restricted to HPV16-positive MSM (1.19, 1.04–1.37). Among HPV16-positive MSM, HSIL+ prevalence increased with age.

Interpretation High anal HPV prevalence among young HIV-positive and HIV-negative MSM highlights benefits of gender-neutral HPV vaccination prior to sexual debut over catch-up vaccination. HIV-positive MSM are a priority for anal cancer screening programmes targeting HPV16-positive HSIL+.

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