

MEETING ABSTRACTS

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Risk of anal cancer in HIV-infected patients and HIV-uninfected controls in North America

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Background

Studies have provided conflicting data for calendar trends in anal cancer among HIV+ individuals, one of the most frequent cancers in this population. Our objective here was to compare the risk of anal cancer between HIV+ and HIV- individuals in North America, and how this relationship has changed over time.

Methods

We conducted a cohort study involving 12 cohorts from North America followed between 1996 and 2007. Anal cancer incidence rates were compared between HIV+ men who have sex with men (MSM), HIV+ non-MSM (including women), and HIV- individuals. We calculated rate ratios (RRs) using multivariable Poisson regression with adjustment for age, sex, race/ethnicity (26% imputed), and calendar era. We next determined whether the adjusted RR for HIV+ compared with HIV-controls has changed over time. Since only a subset of cohorts contributed HIV- controls, we also computed age- and sex- and race-standardized incidence ratios (SIR) using national U.S. SEER rates.

Results

Cohort-specific HIV+ anal cancer incidence rates ranged across cohorts from 0 to 154 cases per 100,000 person-years. The cohort-specific prevalence of MSM explained 58% of the total variability in rates. Overall, there were 111 anal cancer diagnoses among 15,907 HIV+ MSM, 38 diagnoses among 18,239 HIV+ non-MSM, and 79 diagnoses among 115,469 HIV- individuals. The corresponding adjusted RRs were 66.6 (95% CI: 36.9-120.2)

for HIV+ MSM and 23.4 (95% CI: 11.9-46.1) for HIV+ non-MSM compared with the HIV- control group. For both HIV+ MSM and non-MSM, the RR was highest in 1999-2002, but the RR decreased for both groups in the most recent calendar era, 2003-2007 (Table 1), although the differences were not statistically significant ($p>0.2$) comparing RRs across eras. Inferences were similar for SIRs.

Conclusions

Despite an aging HIV+ population with presumed longer exposure to the oncogenic effects of human papillomavirus, the relative incidence of anal cancer among HIV+ individuals in the most recent calendar era has not increased. It is possible that improvements in immune function resulting from effective antiretroviral therapy contributed to this result.

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Table 1 Anal cancer RR (95% CI) for HIV+ MSM and HIV+ non-MSM compared with HIV- controls (reference) and national US SEER rates

	RR (MSM)	RR (non-MSM)	SIR (MSM)	SIR (non-MSM)
1996 to 1998	97.7 (12.3-774.3)	12.0 (0.7-195.5)	63.5 (29.0-120.6)	10.2 (0.3-56.9)
1999 to 2002	114.7 (35.3-372.8)	35.2 (9.8-126.5)	117.3 (84.5-158.5)	26.4 (11.4-52.0)
2003 to 2007	48.1 (23.6-98.2)	19.7 (8.8-44.1)	77.7 (59.3-100.0)	26.4 (14.8-43.5)

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