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MEETING ABSTRACTS

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# Cervical cancer epidemiology among HIV-infected women in North America

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## Background

Initial studies suggest immunosuppression may be associated with the increased rates of precancerous cervical lesions observed in HIV-infected compared with HIV-uninfected individuals, but few studies have large enough populations to study the effect on invasive cancer. To characterize the incidence of cervical cancer among HIV-infected women in the HAART era, we examined data from the NA-ACCORD HIV cohort collaboration of IeDEA.

## Materials and methods

This analysis includes data from 13 North American cohorts of HIV-infected women that collected clinically confirmed or cancer registry-linked data on invasive cervical cancer. Cervical cancer-free women were followed from the first HAART era CD4+ measurement (1996 onwards) until the earliest of: cervical cancer diagnosis, lost to followup, death, or December 2007. Incidence rate overall, by calendar period, and by first CD4+ cell count after 1995 (baseline) were standardized for age using the 2000 U.S. standard population.

## Results

Among the 16,467 HIV-infected women free of disease at baseline, 102 cases of invasive cervical cancer were reported, yielding an age-standardized incidence rate of 114 per 100,000 person-years (95% CI: 88–139). Of those cases, 40 (39%) were HAART-naïve at the time of diagnosis. Among women  $\leq 39$ , 40–49, and  $\geq 50$  years of

age the incidence rates were 122, 142, and 89 per 100,000 person-years, respectively. The age-standardized incidence rates by calendar periods for 1996–1999, 2000–2003, and 2004–2007 were 133, 152, and 87 per 100,000 person-years, respectively, showing no trend. The age-standardized incidence rates by baseline CD4+ categories of  $>350$ , 200–350 and  $<200$  cells/ $\mu$ L were 68, 113, and 185, respectively, indicating an increasing rate with declining CD4+ cell count ( $P_{\text{trend}} < 0.001$ ). Among 13,716 HIV-negative women free of disease in these cohorts, there were 10 invasive cervical cancers for an incidence of 12.3 per 100,000 person-years (95% CI 6.6–23), similar to the age-adjusted SEER population incidence of 8.2 per 100,000 person-years.

## Conclusions

In this large collaboration of North American HIV cohorts, the estimate of cervical cancer incidence was almost 10-fold higher among HIV-infected than uninfected women in these cohorts. Although an effect of increased sexual risk-taking in HIV-infected women and/or differences in screening cannot be excluded, the strong association with lower baseline CD4+ cell count suggests a single low CD4 measurement may predict increased cervical cancer risk. It is unclear whether improvements in HIV-therapies during the HAART era have influenced cervical cancer rates; although no significant trend in incidence was observed over time, a decrease was observed in 2004–07.

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