



BC Centre for Disease Control
Provincial Health Services Authority

The incidence of anal squamous cell carcinoma in a cohort of HIV-positive and HIV-negative individuals in British Columbia, Canada (1990-2015)

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- Anal squamous cell carcinoma (ASCC) is an HPV-associated malignancy.
- While relatively rare in the general population, ASCC disproportionately impacts people living with HIV and men who have sex with men (MSM).
- However, population-based incidence rate estimations that draw on precise laboratory data and MSM statuses are scarce.

- We used data from the Integrated Data and Evaluative Analytics (IDEAs) Cohort.
 - The Cohort includes ~1.7 million individuals who have tested or been case-reported for HIV and other infectious diseases in British Columbia.
- We created a sub-cohort of HIV-negative and HIV-positive individuals aged ≥ 16 years with ≥ 6 months of follow-up time:
 - ASCC diagnoses were ascertained from the BC Cancer Registry (1990-2015).
 - Follow-up began at first HIV detection (HIV-positive stratum), date of 16th birthday, or 01/01/1990, whichever occurred last.
 - Follow-up ended at first ASCC diagnosis, HIV diagnosis (HIV-negative stratum), death, or 31/12/2015, whichever occurred first.
- **Objective:** To estimate crude IRs of ASCC stratified by sex, HIV status, and imputed MSM status.

Variable	HIV Positive MSM (n = 5,420)	HIV Positive non-MSM (n = 4,014)	HIV Positive Female* (n = 2,516)	HIV Negative MSM (n = 79,530)	HIV Negative non-MSM (n = 438,917)	HIV Negative Female (n = 761,321)
ASCC Cases	48	20	-	30	99	227
Total of follow-up time, person-years	64,053.85	42,344.75	-	1,654,588.14	9,485,806.58	15,622,381.90
Median follow-up time, person-years (IQR)	12.00 (6.02-17.06)	10.07 (5.04-15.82)	-	24.67 (16.16-26.00)	26.00 (17.75-26.00)	26.25 (16.00-26.00)
Incidence per 100,000 person-years (95%CI)	74.94 (56.47-99.44)	47.23 (30.47-73.21)	-	1.81 (1.27-2.59)	1.04 (0.85-1.27)	1.45 (1.27-1.65)

*Data for HIV positive females is not shown due to a low case count.

- From 1990-2015, there were 425 incident cases of ASCC.
- Overall, the crude incidence rates of ASCC were highest among HIV-positive individuals, compared to HIV-negative individuals.
- ASCC incidence rates were highest among HIV-positive MSM, and lowest among HIV-negative non-MSM males in British Columbia.
- These results highlight the need for formalized anal cancer screening programs among people living with HIV in Canada.