



BC Centre for Disease Control
Provincial Health Services Authority

The HPV Screening and Vaccine Evaluation (HPV-SAVE) Study: Risk Behaviours and Anal Dysplasia in MSM Living with HIV

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- Men who have sex with men (MSM) living with HIV are disproportionately affected by HPV-associated anal cancer
 - Anal cancer is one of the leading causes of death in those living with HIV, even in the era of effective HIV therapies.
- Anal cytology (or Pap) testing can be used to screen for pre-cancerous abnormalities; however, there are no universally accepted screening guidelines to date, and anal cytology may not perform well as a standalone test at one timepoint
 - The sensitivity of the anal Pap in predicting anal cancer precursors can be low if using a high-grade Pap (i.e. HSIL) as the threshold. Conversely, the specificity may be low if using 'any abnormality' as the threshold.
- Objective: to describe risk factors and anal cancer screening outcomes among a sample of MSM living with HIV

- The HPV-SAVE study:
 - Examines screening and treatment of anal pre-cancerous lesions among MSM living with HIV in Toronto, Ottawa, and Vancouver.
- Data Collection:
 - Anal Pap test in physician's offices; follow-up high-resolution anoscopy may be done depending on anal cytology results.
 - Self-administered questionnaires
- Variables:
 - Anal cancer risk factors: age, smoking, sexual behaviours, history of HPV vaccination, history or dysplasia/warts
 - Outcome: cytology result, graded per Bethesda classification, dichotomized into 'normal' (i.e. negative for dysplasia) or 'abnormal' (i.e. LSIL, LSIL-H, HSIL, ASCUS, ASC-H)
- Analysis:
 - Descriptive statistics of participants and cytology results
 - Unadjusted odds ratios

Table 1: Participant Demographics (n=318)

| Characteristic | Median | IQR |
|---------------------------------------|--------|---------|
| Age | 48 | 37-57 |
| Absolute CD4 count (/uL) | 626 | 488-800 |
| | Count | % |
| Ethnicity – White | 216 | 68 |
| Completed at least college/university | 175 | 55 |
| Employed full-time | 161 | 50 |
| Sexual Orientation – Gay/homosexual | 293 | 92 |

Figure 1: Cytology Results (n=318)

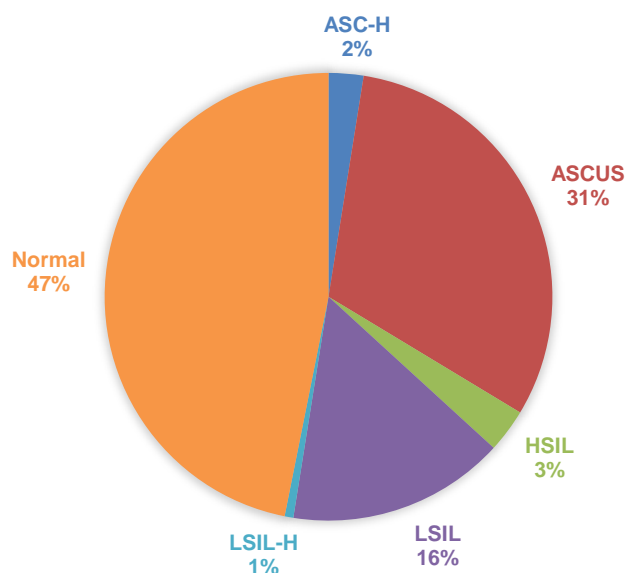


Table 2: Associations between risk factors and abnormal cytology

| Variable | Unadjusted Odds Ratio (95% Confidence Interval) |
|---|---|
| Age | |
| Under 50 | Reference |
| 50 and older | 1.35 (0.87-2.11) |
| Smoking Status | |
| Never | Reference |
| Current smoker | 1.22 (0.67-2.21) |
| Former smoker | 1.27 (0.77-2.11) |
| HPV vaccine | |
| Yes | 0.58 (0.30-1.12) |
| Unknown | 0.72 (0.41-1.26) |
| No | Reference |
| Ever had dysplasia or anal/genital warts | |
| Yes | 0.95 (0.59-1.51) |
| Unknown | 0.95 (0.41-2.22) |
| No | Reference |
| # receptive anal sex partners, past 6 months | |
| None | 1.02 (0.63-1.63) |
| 1-10 | Reference |
| 10+ | 3.28 (1.24-10.35) |
| Sex without condom, past 3 months | |
| Never | Reference |
| Not very often | 0.73 (0.33-1.56) |
| Sometimes | 2.00 (0.96-4.30) |
| Very often | 1.26 (0.61-2.65) |
| Always | 1.08 (0.54-2.15) |

- Cytological abnormalities were common-place and not confined only to those with traditional risk factors such as smoking, older age, or clinical histories of past HPV-related disease.
- Abnormalities were positively associated with having increased numbers of receptive sex partners in the past 6 months.
- These preliminary findings from this large Canadian study support the continued need to develop evidence-based screening guidelines to address this important health issue disproportionately impacting MSM living with HIV.