

Cervical and Anal PAP Smear Correlation Among HIV Infected Women

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Introduction

High rates of human papillomavirus (HPV) infection have been reported in both HIV-infected women and men.^{1,2}

HPV infection is strongly associated with cervical and anal dysplasia and malignancy in HIV-infected individuals.³⁻⁵

While routine cervical screening is recommended in women⁶, the optimal use of anal PAP screening remains undefined.

We sought to correlate the results of cervical and anal dysplasia screening obtained in our clinic.

References

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Methods

Results of cervical and anal PAP smears and biopsy specimens from high-resolution anoscopy obtained during routine clinical care of HIV-positive women at the Positive Health Program, San Francisco General Hospital, were retrospectively collected from the hospital pathology database for the period of January 2000 to July 2004.

Results were interpreted as follows, in order of increasing atypia:

- ♦Normal;
- ♦Atypical squamous cells of undetermined significance (ASCUS);
- ♦Low-grade squamous intra-epithelial lesion (LSIL);
- ♦High-grade squamous intra-epithelial lesion (HSIL);
- ♦Carcinoma in situ (CIS).

Anal and cervical PAP specimens were considered to be "paired" if they were collected within a 6-month time interval.

Paired specimens were considered to be concordant if both specimens were interpreted as having the same degree of atypia; otherwise, they were considered to be discordant.

Results

Subjects:

161 women had a total of 217 cervical and 268 anal PAP results available.

Table 1. Subject Demographics

Age (mean, IQ range)	40.7 (36-45)
Race (percent)	
Caucasian	51
African American	29
Hispanic	15
Asian	4
Other	1
ARV status (percent)	
Always on ARV	41
Never on ARV	37
Switched on/off ARV	7
Unknown	15
Initial CD4 count (mean)	401
Initial HIV RNA (mean)	36,861
Initial HIV RNA BLD (percent)	30

ARV = Antiretroviral therapy

BLD = Below the limit of detection

Cervical and Anal PAP Results:

The results of all cervical and anal PAP smears are reported in Table 2.

Table 2. Results of Cervical and Anal PAP Smears

	Cervical PAP N=217	Anal PAP N=268
Normal	154 (71%)	155 (58%)
ASCUS	26 (12%)	70 (26%)
LSIL	29 (13%)	31 (12%)
HSIL	8 (4%)	12 (4%)
CIS	0 (0%)	0 (0%)

Paired Cervical and Anal PAP Results:

Table 3. Correlation of Paired Cervical/Anal PAPs

Paired Cervical/Anal PAP Smears N=214	
Concordant	112 (52%)
Discordant	
Cervical > Anal	43 (20%)
Anal > Cervical	59 (28%)

">" Indicates higher grade of atypia

Among 151 normal cervical PAP results, the paired anal PAP was abnormal in 55 (36%).

Paired Anal PAP and Anal Biopsy Results:

Table 4. Results of Paired Anal PAP and Biopsy

Paired Anal PAP and Anal Biopsy N=26	
Sensitivity	94.7%
Specificity	42.8%

Conclusions

Abnormal screening cervical and anal PAP results are common among HIV-positive women in our clinic, occurring in 29% and 42% of women, respectively.

There is a high frequency of discordance between cytologic findings on paired anal and cervical PAP smears (48%).

Women with a normal cervical PAP smear were found to have anal atypia in 36% of cases.

This discordance suggests that cervical and anal PAP smears each offer independent information, and both should be evaluated in the routine health screening of HIV-infected women.

The high sensitivity of anal PAP in this small number of samples supports its use as an effective screening tool for anal carcinoma in women but warrants further study.

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