HIV viral suppression as a predictor of high-risk human papillomavirus infection among women in Western Kenya

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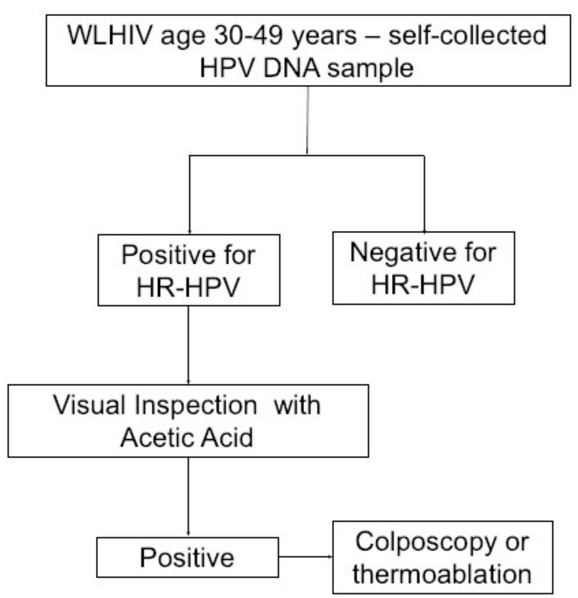
BACKGROUND

HIV infection is associated with an increased risk of human papillomavirus (HPV) acquisition, decreased clearance of HPV, and increased risk of precancerous lesions and cervical cancer. Despite the availability of antiretroviral therapy (ART), there is paucity of data describing the association between sustained HIV viral suppression and HPV infection. Achieving durable HIV viral suppression could be a potential strategy for mitigating adverse outcomes associated with high-risk HPV infections.

METHODS

We conducted a retrospective data analysis and included all WLHV who had received cervical cancer screening using HPV typing as part of a pilot between June and September 2024 within an extensive HIV program in Western Kenya. Deidentified data were abstracted from electronic medical records, including age, nadir CD4 count and ART duration, identified a priori as potential confounders. Sustained viral suppression, defined as an undetectable viral load of fewer than 50 copies per millimetre from ART initiation, was our exposure of interest. Our outcome was defined as the presence of high-risk HPV serotypes from self-collected cervical samples. Log binomial regression was used to estimate the odds of high-risk HPV infection by sustained viral suppression.

Figure 1: Cervical cancer Screen, triage and treat Algorithm



RESULTS

Table 1: Participants characteristics by HIV viral suppression from time of ART initiation

	Sustained HIV Viral Suppression N=323 (%)	HIV non-viral suppression periods N=472 (%)
Median Age (IQR)	39 (34.5, 45)	42 (38, 47)
Nadir CD4 <200 cells/mm^3	36 (21.7)	40 (11)
WHO stage 3 and 4	19 (6.0)	55 (11.8)
Median duration on ART, years (IQR)	5.5 (2.7, 11.0)	12.2 (8.1, 16.2)
Previous VIA positive result	8 (4.4)	10 (2.9)
HR-HPV Positive	129 (40.7)	199 (42.3)

WLHV who did not have sustained HIV viral suppression had 1.5 times higher odds of having high-risk HPV infection (aOR=1.5, 95% CI, 1.3-1.6, p-value < 0.001)

CONCLUSIONS

The odds of high-risk HPV infection were higher among WLHV who had periods of HIV non-suppression after adjusting for nadir CD4, duration on ART and age.

ADDITIONAL KEY INFORMATION

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