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Impact of HIV treatment on clearance of human papillomavirus (HPV) infection in HIV-infected women

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Purpose of the study

The incidence of cervical cancer in HIV-infected women (a consequence of persistent infection with oncogenic HPV) did not decrease significantly since introduction of HAART. We have evaluated the prevalence of oncogenic HPV cervical infection and its clearance in a cohort of HIV-infected women in the HAART era.

Methods

A systematic screening program of oncogenic HPV infection has been initiated in 2002 in HIV+ women; oncogenic HPV was detected by Hybrid Capture II (Digene®) amplification test performed on cervical smears. Women were classified in three groups based on their screening test: N = negative for HPV; P = positive HPV and no cervical high-grade dysplasic lesion; PN = positive HPV then negative on follow-up (FU). The three groups were compared in terms of demographics, CD4, viral load (VL), HIV history and HAART.

Summary of results

488 women have been evaluated for the program: 181 were excluded because of past hysterectomy (51), current or past high-grade cervical dysplasia or cancer (130). The 307 remaining women were classified as: group N (n = 157, 51%), P (n = 111, 36%), PN (n = 39, 13%). In univariate analyses (chi-square test), positive screening for HPV was associated with younger age (34 years vs. 38 (N+PN), p = 0.005), shorter FU for HIV infection (79 months (m) vs. 104, p = 0.0002) and lower median CD4 count both at the time of HPV screening and at the most recent FU (335 vs. 452/μL, p < 0.0001 and 427 vs. 528, p = 0.011). There was a trend for more women of African origin in the P group (90% vs. 82% in N+PN, p = 0.08). Although 80% of women in each group were treated with HAART and 67% had a VL <50 cp/ml, treatment duration was significantly shorter in HPV-infected women (group P : 53 m vs. 81 (N+PN), p < 0.0001). This remained statistically significant when comparing women with persistent HPV infection on two consecutive screenings (n = 44) with women who cleared their infection (group PN, n = 39) (53 m vs. 90, p = 0.013).

In multivariate analysis (logistic regression), only lower median CD4 count at time of first HPV screening remained significantly associated with presence of HPV (p = 0.0152).

Conclusion

Cervical infection with oncogenic HPV remains a significant problem in HIV-infected women in the HAART era. Whether this will induce an increase of cervical cancer incidence in aging cohorts of HIV+ women remains unknown. As previously described, CD4 level is significantly associated with the risk of presence of oncogenic HPV. Long-term impact of HAART on the natural history of oncogenic HPV deserves further evaluation.