The Evaluation of Screening, Treatment and Vaccination of HIV-infected women

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HPV and cervical lesions in HIV-seropositive women: What we know

- Higher prevalence, incidence and persistence of HPV
- Higher risk of squamous intraepithelial lesions (SIL) and invasive cervical cancer
- Higher rates of recurrent high-grade lesions

All of these associations are stronger in HIV+ women with lower CD4 counts.


South Africa: Collaborative Results

- Prevalence of high-grade cervical lesions and HPV infection is notably higher among HIV-infected women with lower CD4 counts\(^1\).
- HAART use appears to approximately halve the combined incidence and progression rates of cervical lesions in prospective analyses\(^2\).

\(^1\)Firnhaber et al., Cancer Causes Control. 2010. \(^2\)Firnhaber et al., J Int AIDS Soc. 2012.

Methods

- 1,202 HIV-seropositive women screened in an HIV treatment clinic in Johannesburg
- Women had Digene HC-II HPV testing, conventional Pap smear and VIA screening.
- All women with positive Pap smears and VIA had colposcopy
- ~25% women with negative Pap and VIA results were referred for colposcopy to control for verification bias

Quality Control

Plos One, 2013
Results of 1,202 HIV-seropositive women screened in an HIV treatment clinic in Johannesburg

Pap smear

- VIA + 55.7%
- HC-II HPV DNA 60.9%

Specificity Estimates, Stratified by CD4 Count in South Africa

Detection of CIN3 by immune status and CD4 count in HIV-seropositive women in Nairobi, Chung et al.

Coptic Hope Center for Infectious Diseases in Nairobi, Kenya, Michael Chung et al.

- 500 HIV-positive patients enrolled from Coptic Hope Center, a PEPFAR-funded HIV clinic based in Nairobi, Kenya since 2004
- Eligible if HIV-positive, ≥18 years, intact cervix, never received cervical treatment

HIV-shedding pre and post treatment in Kenya

- HIV+ women with CIN 2/3, on HAART treated LEEP
- HIV-1 genital shedding samples collected at baseline and weeks 1, 2, 4, 6, 10 and 14
- Blood serum testing for HIV-1 viral load at baseline
- HIV-1 tear flo strips processed and analyzed at UCSF-GIVI lab using Abbott RealTime Viral Load Assay, lower detection limit < 40 copies/mL

No pattern was observed among the seven women who demonstrated HIV-1 genital shedding.

**CFAR Meeting in Cape Town, South Africa**

**Research Priorities**

- What are the optimal screening strategies for cervical cancer precursors in setting of HIV
- Potential role of self-collection; use of HPV RNA Aptima testing
- What are the optimal treatment methods for cervical cancer precursors in setting of HIV
- Does screening or treatment effectiveness vary by CD4/CD4 nadir or ART status
- What are the determinants of recurrence and what are best strategies to identify recurrences

- How can high-grade recurrences be prevented
- What is role of male circumcision in cervical cancer prevention (and programmatic implications)
- What are effects of treatment (cryotherapy vs LEEP, others?) on HIV shedding and what are the determinants
- What are the most effective strategies to incorporate cervical screening and treatment into HIV care
- Models of integration
- Systems issues
- Quality control: training, pathology, etc

**HPV Vaccination in HIV-seropositive**

- High neutralizing antibody titers following HPV vaccination in HIV-seropositive individuals
- No data yet available on vaccine efficacy
Results: Cumulative HIV Seroincidence Across Follow-up Visits by HPV Positivity in the Glans

The majority of women had no detectable HIV-1 genital shedding


Sensitivity and Specificity for CIN2+ of HPV DNA (Hybrid Capture 2) Testing vs. Cytology among HIV-infected women in Yunnan, China

The Women and Children’s Hospital Luxi County, Mangshi, Yunnan Province


Thank you!
Let’s work to be Cervical Cancer Free
www.Cervicalcancerfreeorganization.org

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