VIA: what have we learned in Kenya

Omenge ORANGO

Introduction

- Cervical cancer is the most common cancer among women in the developing world, with an incidence of over 500,000 per year.
- Population based cervical cancer screening programs using Pap smears in the developing world have not always been feasible. Conventional and liquid-based cytology are not cost-effective methods for screening in resource-poor settings.
- Visual inspection with acetic acid (VIA) is a low cost alternative to cytology for cervical cancer screening.

Comparison of Conventional Cervical Cytology Versus Visual Inspection With Acetic Acid Among Human Immunodeficiency Virus–Infected Women in Western Kenya

Hillary Mabeya, MBChB, MMED,[1,2] Kareem Khozaim, MD,[3] Tao Liu, PhD,[3] Omenge Orango, MBChB, MMED,[1,2] David Chumba, MBChB, MMED,[1,2] Latha Pisharodi, MD,[3] Jane Carter, MD,[4] and Susan Cu-Uvin, MD[4]

[1]*United States Agency for International Development–Academic Model Providing Access to Healthcare Partnership;* [2]*Moi University School of Medicine, Eldoret, Kenya;* [3]*Indiana University School of Medicine, Indianapolis, IN; and* [4]*Warren Alpert Medical School of Brown University, Providence, RI*

■ **Abstract**

Objective. This study aimed to determine the accuracy of visual inspection with acetic acid (VIA) versus conventional Pap smear as a screening tool for cervical intraepithelial neoplasia/cancer among human immuno-

Results. Among the study part icipants: VIA was abnormal in 55.3% (83/150, 95% confidence interval [CI] = 47.0%–63.5%); Pap smear showed atypical squamous cells of undetermined significance or worse in 43.7% (59/135, 95% CI = 35.2%–52.5%) and 10% (15/150) of the Pap smears

WAKA HPV Africa

SASGO CONGRESS
31 AUGUST – 2 SEPTEMBER 2018
Spier Estate, Stellenbosch Cape Town

- There is a high prevalence of severe cervical neoplasia among HIV-infected Kenyan women despite good CD4 counts on HAART.
- In this study, VIA had higher sensitivity, lower specificity, almost similar positive and negative predictive value as Pap smears prepared and read at MTRH.
- Although it has limitations, VIA will allow for more widespread implementation of cervical cancer screening among the most vulnerable women at risk for cervical cancer in Western Kenya.

Use of visual inspection with acetic acid, Pap smear, or high-risk human papillomavirus testing in women living with HIV/AIDS for posttreatment cervical cancer screening: same tests, different priorities

Elkanah Omenge Orang'o[a,b], Tao Liu[c], Astrid Christoffersen-Deb[a,b,d], Peter Itsura[a,b], John Oguda[a], Sierra Washington[e], David Chumba[a,b], Latha Pisharodi[f], Susan Cu-Uvin[g] and Anne F. Rositch[h]

Objectives: Few studies have addressed optimal follow-up for HIV-infected women after cervical treatment. This study aimed to compare performance of three available tests to detect posttreatment cervical disease in HIV-infected women in Kenya.

Design: This is a prospective cohort study.

Methods: At least 6 months following cryotherapy, 517 HIV-infected women were evaluated concurrently with visual inspection with acetic acid (VIA), papanicolaou (Pap) smear, and high-risk human papillomavirus (HR-HPV) testing. Women positive by any test (≥low-grade squamous intraepithelial lesion for Pap) were scheduled for colposcopy and biopsy. Among 248 with histological confirmation [and 174 assumed to be truly negative for cervical intraepithelial neoplasia (CIN)2+ after testing negative

- In this study, we sought to determine optimal follow-up of women after abnormal VIA cervical screening and cryotherapy treatment.
- In comparing all screening test combinations, use of HR-HPV DNA testing maximized the likelihood of detecting posttreatment disease, alone or in combination with another test.
- We observed a considerably high rate of posttreatment positive screening and histological confirmation of many CIN 2. cases among HIV infected women.

The AMPATH-Oncology Institute: Longitudinal Analysis of HPV and Cervical Cancer in Kenyan Women with HIV/AIDS

Principle Investigators:
D. Brown and P. Loehrer (Indiana); O. Orango' (Moi University)

Other Collaborating Institutions:

- Brown University
- U of Toronto
- Beaumont Hospital (Detroit)
- Kenya Medical Research Institute (Kisumu)
- U of Massachusetts

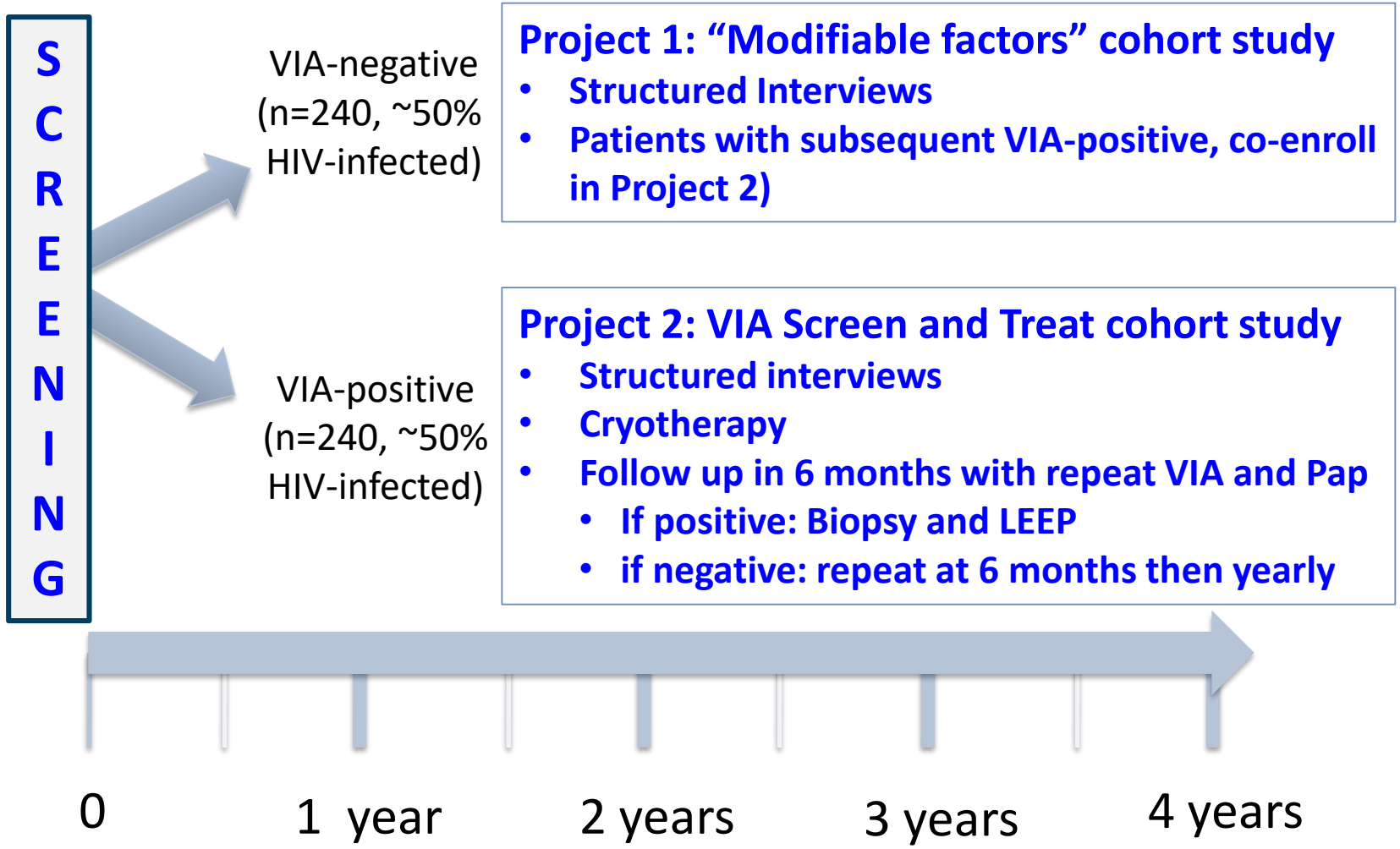
This study has two related projects…

- **Project 1:** Modifiable factors predicting persistence of oncogenic HPV and cervical dysplasia in HIV-infected and HIV-uninfected Kenyan women.

- **Project 2:** The impact of VIA screen and treatment with cryotherapy or LEEP in patients with HIV-infected and HIV-uninfected Kenyan women with cervical intraepithelial neoplasia (CIN).

WAKA HPV Africa

SASGO CONGRESS
31 AUGUST – 2 SEPTEMBER 2018
Spier Estate, Stellenbosch Cape Town



Quarterly: Face-to-face visit, questionnaire (behaviors, diet, medications)
Biannual: HPV, GC/CT
Annual: VIA, HIV serology, CD4/HIV load (if HIV-infected)

WAKA HPV Africa

SASGO CONGRESS
31 AUGUST – 2 SEPTEMBER 2018
Spier Estate, Stellenbosch Cape Town

Objectives Project 1

- Describe frequency and distribution of oncogenic HPV and incidence of cervical dysplasia
- Examine for persistence of HPV infection and development of cervical disease
- Identify potential modifiable sexual, behavioral and biologic factors predicting persistence of HPV infection and cervical dysplasia
- Establish if these modifiable factors differ between HIV-infected and HIV-uninfected women
- Determine the effect of ART use on HPV and dysplasia

WAKA HPV Africa

SASGO CONGRESS
31 AUGUST - 2 SEPTEMBER 2018
Spier Estate, Stellenbosch Cape Town

Specific Aims Project 2

- Primary Aim 1 : To assess the results of cryotherapy (60 HIV-infected, 60 HIV-uninfected) or LEEP (60 HIV-infected, 60 HIV-uninfected) among women in Western Kenya over 36 months of follow up.
- Primary Aim 2: To assess the risk factors associated with treatment failures among HIV-infected and HIV-uninfected women undergoing cryotherapy or LEEP.
- Secondary Aim: To describe the frequency and distribution of oncogenic HPV among HIV-infected and HIV-uninfected women undergoing cryotherapy or LEEP over 36 months of follow-up.

WAKA HPV Africa

SASGO CONGRESS
31 AUGUST – 2 SEPTEMBER 2018
Spier Estate, Stellenbosch Cape Town

Baseline HPV Results

AMPATH ONCOLOGY: BASELINE HPV DETECTION IN KENYAN WOMEN ENROLLED IN A LONGITUDINAL STUDY OF MODIFIABLE FACTORS PREDICTING CERVICAL DYSPLASIA

Brown D, Titus M, Tonui P, Ong'echa J, Ermel A, Muthoka K, Kiptoo S, Tong Y, Wong YC, Moormann A, Itsura P, Mwangi A, Hugan J, Loehrer P, and Orang'o O

Introduction: Cervical cancer is caused by infection with oncogenic HPV types. This is a common malignancy among Kenyan women. To define modifiable factors predicting incidence and persistence of HPV and cervical dysplasia in HIV-infected/uninfected women with normal VIA at enrollment, women were evaluated in a prospective longitudinal study.

Methods: From 9/21/2015 to 10/4/2016, 223 women ages 18 to 45 years old were enrolled in a cervical cancer screening clinic in Eldoret, Kenya. Cervical swabs, behavioral data, and other data were collected at enrollment. HPV typing was performed on clinician-obtained cervical swabs using the Roche Linear Array.

HPV Types	HIV Infected	HIV Uninfected	P value
Any HPV (%)	59.1	35.6	.0005
HR-HPV[1] (%)	47.0	27.9	.0037
LR-HPV[2] (%)	32.2	17.3	.0113
HPV 16 (%)	10.4	2.9	0.0272
Nine-valent HR-HPV vaccine types[3] (%)	26.1	17.3	.1168
HR-HPV not covered by nine-valent vaccine[4] (%)	32.2	15.4	.0038
Two or more HR-HPV types (%)	20.0	6.7	.0041
Number of HR-HPV types (mean)	1.3	0.6	.0001


WAKA
HPV
Africa
SASGO CONGRESS
31 AUGUST - 2 SEPTEMBER 2018
Spier Estate, Stellenbosch Cape Town

THANK YOU