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Abstract #804

# The Aetiology of Genital Ulcer Disease and Association with HIV Infection in Zimbabwe

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This project was approved by the Medical Research Council of Zimbabwe

## Background

- In resource-constraint countries like Zimbabwe, sexually transmitted infections (STI) are treated syndromically.
- Periodic surveys are necessary to determine current etiology of most prevalent STI syndromes, including genital ulcer disease (GUD).
- Findings from aetiologic studies inform the development of STI syndromic treatment guidelines.

## Objectives

To determine the etiology of genital ulcer disease (GUD) among men and women with this condition in a regionally diverse sample of clinics in Zimbabwe and assess the association with HIV infection in this population.

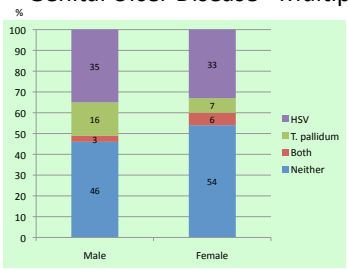
## Methods

- Between June 2014 and April 2015, a mobile team recruited 600 men and women with STIs in 6 clinics:
  - Harare
    - H-1 (N=157)
    - H-2 (N=55)
  - Bulawayo
    - B-1 (N=106)
    - B-2 (N=105)
  - Beitbridge
    - D-1 (N=166)
  - Gutu (N=11)
    - G-1
- The following patients were enrolled:
  - 200 women with vaginal discharge*
  - 200 men with urethral discharge*
  - 200 men and women with GUD
- Demographic, and STI/sexual history data were collected using a standardized questionnaire and entered in an online database
- Specimens collected:
  - Blood (all patients)
  - Urethral Smears (Men)
  - Urine (men with GDS)
  - Vaginal Smears (women)
  - Vaginal swabs (women with GDS)
- All specimens were shipped by courier to the study receiving laboratory in Harare (ZiCHIRe)

Results of the GDS aetiology analyses are presented in Poster 09.22

## Results

### Genital Ulcer Disease - Multiplex PCR Results

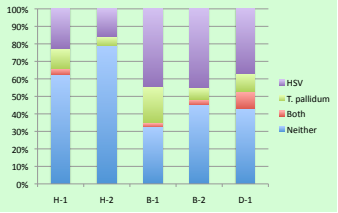



HSV = Herpes simplex virus

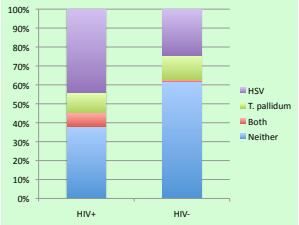
- **200 Men and 200 Women with GUD**
  - **HSV: 68 (34%)**
    - **Type 1: 1 (0.5%)**
  - ***T. pallidum* (Tp): 23 (11.5%)**
  - **Both HSV and Tp: 9 (4.5%)**
  - ***C. trachomatis* (LGV): 2 (1%)**
    - **1 co-infected with Tp**
  - **H. ducreyi: 0**
  - **None: 98 (49%)**
- **Of those with pathogens detected (n=102)**
  - **HSV: 66.6%**
  - ***T. pallidum*: 22.5%**
  - ***C. trachomatis* (LGV): 1.9%**

### Distribution of Multiplex PCR Results by Clinic

- **Multiplex PCR results varied significantly (p<0.05) by recruitment clinic with lower rates of HSV at the Harare clinics**




### Distribution of Multiplex PCR Results by HIV Status




- **Multiplex PCR results varied significantly (p<0.01) by HIV status.**
- **HSV rates were 51.6% for persons with HIV infection compared to 25.6% for those uninfected with HIV**

### Predictors of HSV Infection – Multivariate Analysis

| | AOR | 95% C.I. | | P |
|---|---|---|---|---|
| HIV+ | 3.3 | 1.7 | 6.4 | <.001 |
| Harare Sites | 0.3 | 0.2 | 0.7 | <0.01 |
| Gonorrhea | 0.5 | 0.2 | 1.1 | 0.09 |
| Chlamydia | 0.3 | 0.1 | 1.1 | 0.06 |

AOR: Adjusted Odds Ratio 95% C.I.: 95% Confidence Intervals

The Zimbabwe STI Aetiology Study
More Information and Poster Copies:
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## Laboratory Tests

- Genital Discharge Syndromes:
  - Probetec (Becton Dickinson)
    - *C. trachomatis* and N. *gonorrhoeae*
  - Xpert CT/NG (Cepheid)
    - *C. trachomatis* and *N. gonorrhoeae*
  - Multiplex polymerase chain reaction (M-PCR, NICD*)
    - *C. trachomatis*
    - *N. Gonorrhoeae*
    - *T. vaginalis*
    - *M. genitalium*
- Genital Ulcer Disease:
  - M-PCR
    - *T. pallidum*
    - *H. ducreyi*
    - Herpes simplex virus (HSV)
    - *C. trachomatis* (LGV strains)
- HIV Serology
  - First Response
  - Determine
- Syphilis Serology
  - Treponemal: SD Bioline
  - Non-treponemal: RPR

## Conclusions

- HSV infection was the most common cause of GUD in this sample followed by primary syphilis
- No cases of *H. ducreyi* infection found
- The association of HSV infection with HIV infection and the negative association with gonorrhea and chlamydia suggests a subgroup of patients with GUD experiencing a (recurrence of a) symptomatic HSV outbreak related to their HIV status rather than a recently acquired infection
- The lower rates in the Harare clinics will be further investigated

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PEPFAR