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CORRELATION BETWEEN NUTRITION STATUS AND GENITAL SHEDDING OF HIV-1

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ABSTRACT

Background:

Correlation of nutritional status with genital shedding of HIV-1 has not been described. Genital shedding patterns have not been described in Botswana previously

Methods:

I conducted a cross-sectional study to describe genital shedding patterns in Botswana and to correlate nutritional status with genital shedding of HIV-1. Between July 2005 and December 2005, samples were collected and analyzed from 50 women participating in an ongoing micronutrient supplementation clinical trial that is examining the effect of supplementation on HIV disease progression

Results:

HIV-1 RNA was isolated from both baseline and three months CVL in 24% of the study population, and these were labelled **continuous shedders (CS).** No HIV-1RNA was isolated from both baseline and three months CVL in 64% of the study population, and these were labelled non-**shedders (NS).** In 14% of women, HIV-1 RNA was either isolated from baseline CVL only (4/50) or from the three months CVL only (3/50) and these were labelled as **Intermittent Shedders (IS).**

Women who had detectable genital HIV-1 RNA at baseline had lower haemoglobin compared to those who were not shedding (Hb11.7 (95% CI 10.8 ; 12.5) vs. Hb 12.5 (95% CI 12.0 ; 13) P = 0.0877), showing a strong trend, albeit a non significant

haemoglobin difference. Women who had detectable genital HIV-1-RNA at baseline had significantly lower CD4 cell percentage compared to those not shedding (22% (95% CI 19 ; 24) vs. 30 % (95% CI 27 ; 34) $P < 0.01$) and a significantly higher log viral load (4.7 log (95% CI 4.2 ; 5.1) vs. 3.6 log; ((95% CI 3.5 ; 4.0) $P < 0.01$). Overall there was a non significant higher prevalence of genital infection in women who were shedding HIV-1 at baseline, compared to those who were not (73% vs. 46% $P = 0.123$). No HIV -1 RNA was isolated in all the19% of the women in the study who were using some form of contraception

Conclusions:

The preliminary analysis showed three patterns of HIV shedding in this study population, namely Continuous shedders, Intermittent shedders and Non-shedders. Women with detectable genital HIV-1-RNA at baseline had more advanced disease, and by extension poor nutritional status, than those not shedding, as shown by higher plasma viral load, lower CD4 count, lower haemoglobin level and higher prevalence of genital infections. This study generates hypothesis on the role haemoglobin may play in genital shedding of HIV-1 in females

Recommendation:

Due to the small sample size, these results will need to be validated by larger studies of appropriate design. Timely treatment of anaemia in HIV positive women may be important in reducing HIV transmission associated with presence of HIV-1RNA in genital secretions