

**Results** At least one HR-HPV was identified in 264 HIV-negative men (37.6%, 403 genotypes total) and 164 HIV-positive men (70.4%, 399 genotypes total) at enrollment. Among HIV-negative men, younger and unmarried men were more likely to have higher viral loads. HR-HPV genotypes with high viral load (grade:3–4) at enrollment were more likely to persist than HR-HPV genotypes with low viral load (grade:1–2) among HIV-negative (month 6: adjPRR = 1.80, 95% CI: 1.31–2.47; month 12: adjPRR = 2.04, 95% CI: 1.39–3.01), and HIV-positive men (month 6: adjPRR = 1.33, 95% CI: 1.06–1.67; month 12: adjPRR = 1.70, 95% CI: 1.16–2.50). Long-term persistence of HR-HPV was more frequent among HIV-positive men compared to HIV-negative men (month 24: adjPRR = 2.24, 95% CI: 1.46–3.45), and HR-HPV infections with low viral loads were detected more frequently among HIV-positive men at all follow-up visits (6 months: PRR = 1.81, 95% CI: 1.17–2.97; 12 months: PRR = 1.43, 95% CI: 0.8–2.4; 24 months: PRR = 2.9, 95% CI: 1.53–5.53)

**Conclusions** HR-HPV genotypes with high viral load are more likely to persist among HIV-negative and HIV-positive men, though persistence was more common among HIV-positive men. The results may explain the association between high HR-HPV viral load and transmission to women and increased levels of HR-HPV persistence in HIV-positive men.

### P3.223 HPV GENOTYPE DISTRIBUTION IN HIV-POSITIVE AFRICAN WOMEN AND ASSOCIATIONS WITH HIGH GRADE HISTOLOGICAL LESIONS BY CD4+ COUNT

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**Background** To assess the prevalence, genotype distribution and risk factors for high-risk HPV among HIV-positive African women, and associations with cervical histological lesions.

**Methods** The HARP study enrolled HIV-positive women aged 25–50 in Burkina Faso (BF) and South Africa (SA). A stratified sampling strategy was used, with 2/3 of women on ART. Cervical HPV genotyping was performed using InnoLipa. Four-quadrant cervical biopsies were obtained among women with abnormalities detected by at least one test or by colposcopy.

**Results** 628 and 624 women were enrolled in BF and SA, respectively. The distribution of CD4+ count (cells/ $\mu$ L) was similar in both sites: 68% with CD4+  $\geq$  350 and 10% with CD4+ < 200. Prevalence of HR-HPV genotypes was 62% among women in BF and 78% in SA, and, overall, 67%, 73% and 84% among women with CD4+  $\geq$  350, 200–349 and < 200, respectively (Table). The 4 most common genotypes in BF were HPV52 (20%), HPV51 (12%), HPV35 (9%), HPV66 (8%); and in SA, HPV52 (24%), HPV16 (15%), HPV51 (14%) and HPV35 (14%). Multiple types were observed in 41% and 55% of HR-HPV-positive women in BF and SA, respectively; and increased with decreasing CD4 count (46%, 52% and 63%, respectively, P-trend = 0.004). HPV types 58, 33 and 16 were most strongly associated with CIN2+ (OR = 5.06, OR = 4.62, OR = 4.02) and types 16, 35 and 58 were most strongly associated with CIN3+ (OR = 4.59, OR = 3.36, OR = 2.96). Decreasing CD4+ count and younger age were associated with higher HR-HPV prevalence in both countries (Table). Multiple sex partners, smoking and lower income were also significantly associated with HR-HPV in SA.

**Conclusions** HR-HPV prevalence is high among HIV-positive women with genotype distribution similar in both countries. HR-HPV prevalence is associated with young age and lower CD4+ count. Whilst HPV52 is the most prevalent type, HPV16 is most strongly associated with increasing lesion severity.

### Abstract P3.223 Table 1 Table. Association of HR genotypes with site, CD4+ count and age in Burkina Faso and South Africa

| Site                        | High risk HPV genotypes |                  |
|-----------------------------|-------------------------|------------------|
|                             | n/N (%)                 | OR (95% CI)      |
| Burkina Faso                | 285/463 (62%)           | 1                |
| South Africa                | 385/492 (78%)           | 2.24 (1.69–2.99) |
| CD4+ count (cells/ $\mu$ L) |                         | P-trend = 0.001  |
| < 200                       | 76/90 (84%)             | 1                |
| 200–349                     | 151/206 (73%)           | 0.51 (0.26–0.97) |
| $\geq$ 350                  | 442/658 (67%)           | 0.38 (0.21–0.69) |
| Age group                   |                         | P-trend = 0.002  |
| 25–29                       | 140/178 (79%)           | 1                |
| 30–34                       | 184/254 (72%)           | 0.71 (0.45–1.12) |
| 35–39                       | 158/237 (67%)           | 0.54 (0.35–0.85) |
| 40–49                       | 188/286 (66%)           | 0.52 (0.34–0.80) |

### P3.224 EFFECT OF HERPES SIMPLEX VIRUS TYPE 2 (HSV-2) INFECTION ON PROGRESSION OF HIV INFECTION AMONG FEMALE SEX WORKERS IN BURKINA FASO

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**Background** The effect of HSV-2 on the natural history of HIV-1 remains unclear. Although trials have shown a modest but significant impact of HSV-2 suppression on HIV-1 disease progression, the sub-optimal antiviral efficacy of aciclovir and its potential antiretroviral effect have limited our ability to measure the true effect of HSV-2 on HIV-1 disease progression. This study aimed to assess the effect of untreated HSV-2 infection on the time to ART.

**Methods** From December 2003 to February 2012, HIV-1 infected female sex workers were enrolled in a prospective open cohort in Burkina Faso. At each 3-month follow-up visits, CD4 count and HIV-1 plasma viral load were done. Participants were offered care including ART and psychological support. Participants not on ART and having at least 350 CD4 cells/ $\mu$ L at enrolment (the current CD4 count threshold for ART initiation) were included in this analysis, which was censored at 36 months of follow-up when the assumption of proportional hazard was no longer met.

**Results** Overall, 164 co-infected women and 20 HIV-1 mono-infected women were enrolled in this study. At enrollment, the only difference between the two groups was a younger age of HIV-1 mono-infected women (median age 24 versus 31 years,  $p < 0.001$ ). In linear mixed models, the age-adjusted mean CD4 count at baseline (intercept) was significantly lower among HSV-2 positive women ( $-211$  cell/ $\mu$ L,  $p < 0.001$ ), but no difference in baseline CD4-adjusted plasma viral load was observed. During follow-up, 3 out of 20 HIV-1 mono-infected women initiated ART versus 52 out of 164 HSV-2 co-infected women. After adjustment for baseline CD4 count and age, HSV-2 infected women were still much more likely to initiate ART over 36 months (HR = 4.6, CI 95%: 1.04–20.5,  $p = 0.04$ ).

**Conclusion** HIV-1 disease progression, as assessed by time to ART eligibility, was much accelerated for women co-infected with HSV-2.

### P3.225 HSV-2 SEROPREVALENCE AMONG CURRENT INJECTION DRUG USERS IN ESTONIA

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