

Results Fifty-two participants with a median age of 18 (range 12–23) years participated in the study with 53.8% being female. Utilising a pill count to assess adherence, 45 (86.5%) participants had a greater than 95% adherence to their PI regimen. However using the MEMS cap only, 4 (7.7%) participants had a greater than 95% adherence. Twenty-three of the 52 participants had a viral load greater than 50 (median = 21,228 cells/ml; range = 52–1,884,215) with a median adherence level of 100% (range = 93–100%) as determined by a pill count and a median adherence level of 41% (range = 3–100%) as determined by the MEMS cap.

Conclusion Pill counts and self-reported adherence overestimated adherence in adolescent patients on PIs as part of an anti-retroviral regimen. Pill dumping phenomenon was observed in participants with high viral loads and greater than 95% adherence when assessed by pill count.

Disclosure of interest statement The authors have no conflict of interests to declare.

004.5 THE INFLUENCE OF SEXUAL DEBUT ON SELECTED VAGINAL, RECTAL AND ORAL MICROBIOTA AND VAGINAL INFLAMMATORY MARKERS IN BELGIAN ADOLESCENT GIRLS: A COHORT STUDY

¹V Jespers*, ²L Hardy, ¹A Buvé, ¹J Loos, ³A Tsoumaris, ³J Buyze, ²T Crucitti. ¹Unit of Epidemiology and Control of HIV/STD, Department of Public Health, Institute of Tropical Medicine, Antwerp, Belgium; ²HIV/STI Reference Laboratory, Department of Clinical Sciences, Institute of Tropical Medicine, Antwerp, Belgium; ³Clinical Trials Unit, Department of Clinical Sciences, Institute of Tropical Medicine, Antwerp, Belgium

10.1136/sextrans-2015-052270.101

Introduction Little research has been done on the composition of the vaginal microbiota and vaginal inflammatory markers in adolescent girls and how these are affected by initiation of sexual activity.

Methods We conducted a cohort study for which we recruited adolescent girls at 4 sary schools in Antwerp. Three times over a period of 8 months, participants completed an electronic questionnaire and self-collected vaginal, rectal and oral swabs. Five vaginal *Lactobacillus* species, *G. vaginalis*, and *A. vaginae* employing qPCR; eight inflammatory markers by Luminex; and BV by Nugent score 7–10 were measured in the vaginal specimens. In the oral and rectal specimens, measurements were limited to *Lactobacillus* genus, *G. vaginalis*, and *A. vaginae*. The association of sexual activity (none, penetrative sexual intercourse and non-penetrative activity) with the vaginal, oral and rectal microbiota, BV and vaginal inflammatory markers was assessed by bivariate analysis.

Results Of the 93 adolescents (14–20 years), 53 (57%) were virgins, 35 (37.6%) had had penetrative sexual intercourse and 5 (5.4%) had engaged in non-penetrative activity. Cross-sectional, sexual activity was associated with an increased presence of vaginal *G. vaginalis* ($p = 0.016$), rectal *G. vaginalis* ($p = 0.027$), and rectal *A. vaginae* ($p = 0.010$); with higher IL-1 α ($p < 0.001$), IL-8 ($p = 0.002$) and MIP-1 β ($p = 0.030$); and with BV ($p = 0.009$). During follow-up, 9 (9.7%) participants had penetrative sexual intercourse for the first time. At individual level this was associated with a higher IL-1 α (+0.37 log; $p = 0.010$) compared to girls who remained virgin over the three visits. Similarly, in girls who reported sexual intercourse IL-1 α and IL-8

was higher (+0.39 log; $p < 0.0001$; +0.43 log; $p = 0.003$) compared to the virgins.

Conclusion Sexual debut is associated with the presence of BV related species and the inflammatory status of the vaginal milieu. Consequently, around this period in life adolescent girls have increased vulnerability to HIV and other sexually transmitted infections.

Disclosure of interest statement This work was supported by the European Commission on the grand Combined Highly Active Anti-Retroviral Microbicides (CHAARM) N° 242135. No pharmaceutical grants were received in the development of this study.

004.6 HIGH PREVALENCE OF BACTERIAL VAGINOSIS AMONG ADOLESCENT GIRLS ATTENDING SECONDARY SCHOOL IN TANZANIA

¹SC Francis*, ^{1,2}C Hansen, ²J Irani, ^{1,2}A Andreasen, ³V Jespers, ⁴S Nnko, ³T Crucitti, ⁴C Chungalucha, ^{1,2}D Watson-Jones, ³A Buve. ¹London School of Hygiene and Tropical Medicine; ²Mwanza Intervention Trials Unit/National Institute of Medical Research; ³Institute of Tropical Medicine; ⁴National Institute of Medical Research

10.1136/sextrans-2015-052270.102

Introduction Prevalence and incidence of HIV infection and other sexually transmitted infections (STI) are particularly high among adolescent girls in sub-Saharan Africa. One area in need of further research is the role played by the vaginal microbiota in the susceptibility to HIV and other STI in adolescent girls. The aim of this study was to characterise the vaginal microbiota of adolescent girls in Tanzania around the time of their sexual debut.

Methods Girls attending secondary schools in Mwanza City, ages 17 and 18 years old, were invited to join a cross-sectional study. After informed consent/assent, girls were interviewed and nurse-assisted, self-collected swabs were obtained for STI and BV testing. BV was considered as a binary outcome: Nugent scores 7–10 were considered BV positive. Factors associated with prevalent BV were analysed using multivariable logistic regression.

Results Of the 403 girls who enrolled in the study, 176 (44%) reported having had sexual intercourse and 8 (2%) reported receiving cunnilingus. Ninety-five (25%) girls had BV, 9 (2%) were infected with *Chlamydia trachomatis*, 8 (2%) had *Neisseria gonorrhoea*, 18 (5%) had *Trichomonas vaginalis*, 85 (21%) had Human papilloma virus and 6 (2%) *Mycoplasma genitalium*. Six (2%) girls were infected with HSV-2. Among girls who were sexually naïve, 19% had BV compared to 32% in sexually active girls. BV was independently associated with sexual debut (aOR = 2.11; 95% CI: 1.32,3.39); oral sex (aOR = 7.94; 95% CI: 1.53,40.3); >1 sex partner (aOR = 2.55; 95% CI: 1.21,5.39); and HPV (aOR = 1.73; 95% CI: 1.02,2.94).

Conclusion In this study among girls attending secondary school in Mwanza, Tanzania, sexual debut was associated with BV; however, 19% of girls who were sexually naïve had BV. This suggests that sexual intercourse may not be a prerequisite for BV. Oral sex was also associated with BV although the reported prevalence of this sexual behaviour was low.

Disclosure of interest statement The authors do not have a conflict of interest. No pharmaceutical grants were received in the development of this study.