O04.2 A PILOT RANDOMISED CONTROLLED TRIAL OF AN INTERACTIVE COMPUTER-BASED INTERVENTION FOR SEXUAL HEALTH IN ADOLESCENTS AND YOUNG ADULTS

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Introduction Interactive computer-based interventions (ICBI) are potentially scalable tools for use in real-world settings to promote sexual health and prevent sexually transmitted infections (STIs) and unintended pregnancies. We assessed the feasibility and acceptability of an ICBI for sexual health and the effectiveness of the intervention in reducing unprotected sex and biomarker outcomes of STIs and unintended pregnancy.

Methods This pilot randomised controlled trial enrolled STD Clinic patients, 14–24 years old, reporting unprotected vaginal sex during the last 2 months. The ICBI included personalised sexual health feedback from a physician avatar; instructive video modules advocating sexual health; and identification of one behaviour to change. At 3-month follow-up participants reported on interim sexual and pregnancy histories and underwent repeat urine testing. Intervention impact on unprotected vaginal sex, number of sexual partners, incident STIs and unintended pregnancy was assessed.

Results Of 272 participants, 242 (89%) completed the study, of which 65% were female. At 3-month follow-up, when compared to controls, the intervention group reported a 33% lower rate of vaginal sex without condoms [IRR = 0.67, 95% CI: 0.44–1.01]; 20% fewer partners [IRR = 0.80, 95% CI: 0.61–1.05]; 48% fewer STIs [IRR = 0.52, 95% CI: 0.24–1.13]. Intervention females reported less frequent vaginal sex without birth control [IRR = 0.78, 95% CI: 0.46–1.32]; half as many unintended pregnancies [IRR = 0.51, 95% CI: 0.16–1.6]. In exploratory analyses, intervention females reported fewer partners [IRR = 0.71, 95% CI: 0.50–1.00] and a significantly lower rate of vaginal sex without condoms [IRR = 0.50, 95% CI: 0.30–0.85].

Conclusion The intervention was acceptable to both males and females, and at 3-month follow-up, there was a non-significant but substantial trend towards effectiveness for all outcomes. Among females, in exploratory analysis, the reduction in vaginal sex without condoms was statistically significant.

Disclosure of interest statement Test kits for STI testing were provided by GenProbe.

O04.3 ADOLESCENT CARE-SEEKING BEHAVIOUR AFTER NOTIFICATION OF POSITIVE SEXUALLY TRANSMITTED INFECTION RESULTS

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Background Adolescents with pelvic inflammatory disease [PID] are at risk for recurrent sexually transmitted infections [STI]. There is limited understanding of adolescent responses to notification of subsequent STI. The objective of this study was to examine care-seeking trends after notification.

Methods This study utilised data from 59 of 153 adolescents with PID enrolled in the Technology Enhanced Community Health Nursing [TECH-N] study with positive STI results at 1-month or 3-month study visits. Participants provided vaginal specimens for *Neisseria gonorrhoeae* [GC], *Chlamydia trachomatis* [CT], *Trichomonas vaginalis* [TV], and *Mycoplasma genitalium* [MG]. Participants were called with results and an outreach worker contacted hard-to-reach participants in the field. Participants were referred for free treatment in a youth-friendly clinic. TECH-N staff tracked treatment using the electronic health record and communication with the health department. Statistical analyses were performed to evaluate responsiveness to notification.

Results Mean age of participants with positive results was 18.1 (2.1) and 44% had a prior STI. At 1-month, positives were 26% CT; 5% GC; 37% TV; 53% MG. At 3 months, positives were 16% CT; 11% GC; 49% TV; 51% MG. All adolescents with positive results were contacted and 50% sought treatment. 60% of CT 0% of GC, 55% of MG, and 57% of TV positives did not seek treatment. 42% who were positive at 1 month remained positive at 3-months. Using GC/CT treatment as a reference, documented treatment rates for positive results were CT/GC (50%) versus MG (54%) at 1 month and TV (60%) and at 3-months were CT/GC (80%) versus MG (55%) and TV (17%). Despite the 3-month trend, differences did not reach statistical significance.

Conclusion Most adolescents who tested positive for STIs after PID were responsive to notification. However, many youth did not seek treatment despite the availability of free, confidential, and youth-friendly sexual health services.

Disclosure of interest statement This study was funded by the National Institute of Nursing Research, Grant # R01NR013507, PI: Trent).

O04.4 PILL DUMPING IN ADOLESCENTS RECEIVING A BOOSTED PROTEASE INHIBITOR REGIMEN AS PART OF SECOND-LINE ANTIRETROVIRAL THERAPY: EXPERIENCES FROM AN URBAN HIV CLINIC

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Introduction In adolescents several psychosocial factors contribute to non-adherence. This study was undertaken to ascertain overall adherence of HIV infected adolescents to either boosted atazanavir (ATV/rtv) or lopinavir (LPV/rtv). The study was also conducted to compare self-report/pill counting adherence measurement techniques against the MEMS cap device technique.

Methods This was a prospective cohort study in adolescents (aged 12 to 23) receiving either boosted atazanavir (ATV/rtv) or lopinavir (LPV/rtv) as part of an antiretroviral regimen. This study was conducted at Newlands Clinic, Harare, Zimbabwe. Participants received a MEMS cap to assess adherence to the protease inhibitor (PI). During subsequent clinic visits, MEMS caps would have data downloaded before medicine was refilled. Participants were blinded to the results of the MEMS cap result. At each subsequent visit, a pill count and a self-report was also conducted to measure adherence. Viral load measurements were also recorded against the adherence data.

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 antiretroviral 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.

O04.5 THE INFLUENCE OF SEXUAL DEBUT ON SELECTED VAGINAL, RECTAL AND ORAL MICROBIOTA AND VAGINAL INFLAMMATORY MARKERS IN BELGIAN ADOLESCENT GIRLS: A COHORT STUDY

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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-1α ($p < 0.001$), IL-8 ($p = 0.002$) and MIP-1β ($p = 0.030$); 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-1α (+0.37 log; $p = 0.010$) compared to girls who remained virgin over the three visits. Similarly, in girls who reported sexual intercourse IL-1α 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.

O04.6 HIGH PREVALENCE OF BACTERIAL VAGINOSIS AMONG ADOLESCENT GIRLS ATTENDING SECONDARY SCHOOL IN TANZANIA

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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 cunnilungus. 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% 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.