

Conclusions: Although reduction in risky sexual behaviours was observed in the open cohort and SiVET, lower HIV and pregnancy incidence rates were observed in the SiVET. The low HIV incidence could impact on sample size estimates for a prevention trial.

P36.02

Trends of Reported HIV Sexual Risk Behaviour and HIV Incidence among Fisherfolk in Uganda Receiving Clinic-based Routine HIV Counseling and Testing

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Background: HIV counseling and testing (HCT) has been shown to reduce HIV risk behaviour and is central to HIV prevention programs. We investigated risk behaviour and HIV incidence trends in a fisherfolk cohort on Lake Victoria, Uganda.

Methods: HIV negative volunteers aged 18–49 years, at high risk of HIV infection and willing to undergo HCT were enrolled. At every quarterly visit, they received HCT. Condoms and STI treatment were also provided. Risk behaviour data on alcohol consumption before sex, multiple or new sex partners, condom use and exchange of gifts for sex in the past 3 months were collected at baseline and every 6 months for 2 years. We fitted multilevel logistic regression models to investigate the trends.

Results: A total of 428 (63% men) volunteers, mean age 28 years were enrolled. There were significant reductions in reported risk behaviours over the 2-year follow-up. The proportion reporting ≥ 2 partners decreased from 80% at baseline to 45% at month 6 and to 43% at month 24 for males; for females the decrease was from 42% at baseline to 13% at month 6 and to 6% at month 24; $P < 0.01$). Similarly there were significant reductions among men ($P = 0.01$) reporting new partners but of borderline statistical significance among females ($P = 0.09$). In both sexes there were significant decreases in reported non-condom use, transactional sex and in having sex when drunk. HIV incidence (in brackets 95% CI) reduced from 8.2/100 person years (5.1-13.5), to 7.3 (5.0-10.6), 6.5 (4.6-9.1) and 6.0 (4.3-8.3) at 6, 12, 18 and 24 months respectively ($p = 0.21$).

Conclusions: In this study there was a substantial reduction in self-reported risk behaviour in the first 6 months and marginal reduction in the later period. However, a modest HIV incidence reduction was observed. This calls for an urgent need for combination prevention strategies in this population.

P36.03

Development of a Risk Scoring Tool to Predict HIV-1 Acquisition in African Women

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Background: In many African countries, women account for more than half of all new HIV-1 infections; however, not all women are at equal risk of acquiring HIV-1. A risk prediction tool that can identify women at highest risk for HIV-1 acquisition could improve prevention research efficiency and inform HIV-1 prevention activities in policy and clinical settings.

Methods: Using baseline data from VOICE (MTN-003), a randomized, double-blinded, placebo-controlled trial conducted in South Africa, Uganda and Zimbabwe that assessed safety and effectiveness of daily oral and vaginal chemoprophylaxis for HIV-1 prevention, we used standard methods for the development of clinical prediction rules to generate a risk scoring tool to predict HIV-1 acquisition over the course of one year. The predictive ability of the score was assessed by calculating area under the curve (AUC) and the score was internally validated using 10-fold cross-validation.

Results: Among 5,029 women enrolled in VOICE, 4,834 women had complete data for factors of interest and were included in the analysis; of these, 248 acquired HIV-1 within one year after enrollment (HIV incidence = 6.05% [248/4,093 person-years]). The final risk score resulting from multivariable modeling included the following baseline factors: participant age, married/living with a partner, financial or material support from partner, partner has other partners, curable STI, HSV-2 status and alcohol use. The maximum possible score was 12; 36% of participants had a score > 6 and accounted for 66% of HIV-1 infections. The AUC for the score was 0.72 and mean AUC from 10-fold cross validation was 0.70, indicating good predictive ability.

Conclusions: A discrete set of characteristics which can be easily assessed were highly predictive of HIV-1 acquisition over one year. External validation of the risk score is required to evaluate the tool's performance when applied to different populations of women at risk for HIV-1 infection in Africa.

P36.04

Age-disparate Partnerships and Risk of HIV-1 Acquisition among South African Women Participating in the VOICE Trial

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Background: Age-disparate relationships where the male partner is older than the female partner have been associated with