P239 GENITAL HSV-2 SUPPRESSION IS NOT ASSOCIATED WITH ALTERATIONS IN THE VAGINAL MICROBIOME: A ONE-WAY, CROSS-OVER STUDY

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Background Women infected with herpes simplex virus type 2 (HSV-2) have increased risk of incident and refractory bacterial vaginosis (BV). We hypothesized that suppression of HSV-2 would be associated with decreased Nugent score and risk of BV.

Methods HSV-2 seropositive women with a self-reported history of BV self-collected daily vaginal and anogenital swabs for 28 days. Women then initiated valacyclovir 500 mg daily for a 2 week lead-in, followed by continued valacyclovir and self-collection of swabs for an additional 28 days. Anogenital swabs were tested for HSV DNA by PCR. Nugent score was performed on vaginal swabs (score $\geq$7 denoted BV). Quantitative PCR for three *Lactobacillus* species, *Gardnerella vaginalis*, *Megasphaera*, and BV-associated bacterium 2 was performed from DNA extracted from vaginal swabs. The primary outcome, per-participant median Nugent score at baseline compared to valacyclovir, was calculated using linear mixed models. We had 80% power to detect a 50% reduction in rate of BV on valacyclovir.

Results Forty-one women collected a median of 28 days of swabs during each study period. Thirty-three (80%) had a history of symptomatic genital HSV-2 infection, with a median of 2 self-reported recurrences in the past year (range 0–12). The genital HSV shedding rate decreased from 109 (9.7%) of 1126 days at baseline to 6 (0.05%) of 1125 days on valacyclovir (RR=0.06, 95% CI=0.02–0.13). Median Nugent score was 3.8 at baseline and 4.0 on valacyclovir (predicted change=0.26, 95% CI=-0.43–0.94). Women had BV on 343 (31.1%) of 1103 days at baseline and on 302 (27.7%) of 1091 days on valacyclovir (RR=0.90, 95% CI=0.68–1.20). Average $\log_{10}$ concentrations of bacterial species did not change significantly during valacyclovir treatment.

Conclusion Use of short-term valacyclovir suppression among women with HSV-2 infection did not decrease the Nugent score or risk of BV and did not change concentrations of key vaginal bacteria.

Disclosure No significant relationships.

P241 DETECTION OF Y-CHROMOSOMAL DNA CORRELATES WITH LAST UNSAFE SEXUAL EXPOSURE

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Background When *Chlamydia trachomatis* (CT) is detected after adequate treatment, this may reflect treatment failure or re-infection due to sexual re-exposure. For sexual exposure, researchers rely on self-reported data. Biomarkers such as Y-chromosomal DNA (Y-DNA) from vaginal and rectal samples may be used to support the validity of the self-reported sexual exposure data. The aim of this study was to validate detection of Y-DNA in a cohort of treated female CT patients, the Femcure study.

Methods Participants provided self-swabs for various days after treatment. For each swab, self-reported last unsafe (vaginal or rectal) sexual exposure (LUSE) was recorded in days (range t0-t14). Samples consisted of vaginal (n=120: 20 swabs at t=0,1,2,3,4; and 20 swabs at t=7,8) and rectal (n=43, 6 swabs at t0–1; 15 swabs at t2–5 and 22 swabs at t6–14) CT negative swabs in Roche COBAS PCR uniswab media (FemCure 2016–2017). CT negative human semen was used for spiking experiments. Quantitative detection of Y-DNA was performed using Quantifiler® Duo DNA Quantification Kit.

Results Samples with realistic spiked concentrations of ~0.5 ng/microliter Y-DNA remained stable and detectable until at least 35 days in the medium at 4°C. For vaginal swabs, detection of Y-DNA correlated inversely with LUSE: the Y-DNA detection percentage was 90%, 60%, 30%,10%, 20% at t=0,1,2,3,4, and 5% at t7,8. In anal swabs, detection was 33% at t0–1 and 13% at t2–5 and t6–14.

Conclusion Y-DNA correlates strongly with LUSE in vaginal swabs, with high Y-DNA detection in the first 48 hours. Y-DNA detection data can be used to support self-reported sexual exposure data used in most research. The detection of Y-DNA in anal swabs has to be further validated as our study only included a limited number of anal samples at early timepoints.

Disclosure No significant relationships.