Introduction Herpes simplex virus type 1 (HSV-1) has emerged as the leading cause of first episode genital herpes among adolescents and young adults. The natural history of genital and oral shedding after first episode genital HSV-1 must be described to understand the risk of transmission to sexual partners.
Methods Persons with laboratory documented first clinical episode genital HSV-1 infection obtained daily self-collected genital and oral swabs for two 30 day sessions starting 2 months and 11 months after the first genital HSV-1 outbreak. HSV was detected in swabs using real-time quantitative HSV-1 PCR. Rates of genital and oral shedding were compared during the first and second swabbing sessions using Poisson regression models.
Results Of 52 persons who completed the first swabbing session, 27 (52%) were HSV-1 seronegative (primary infection) at presentation and 25 (48%) were HSV-1 seropositive at initial presentation. Twenty-five persons completed both sessions (11–12 months). Genital HSV-1 shedding was detected in 176 (12.2%) of 1438 swabs from the first shedding session, and declined to 46 (7.1%) of 645 swabs in the second session. The rate of genital lesions was 61 of 1595 (3.8%) days in the first session and 12 of 746 (1.6%) days in the second session. Oral shedding was detected infrequently, with 3.6% of swabs HSV-1 positive in the first session, and 3.3% during the second session. Oral lesions were rare in both sessions.
Conclusions Genital HSV-1 shedding occurs substantially less frequently than genital HSV-2 shedding, and declines in the first year after genital HSV-1 acquisition. These results will inform counselling messages about risk of sexual transmission to persons with first episode genital HSV-1 infection.

O11.2 REPEAT SYPHILIS IS ASSOCIATED WITH AN ALTERED IMMUNE PROFILE

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Introdution There may be a difference in the immune and inflammatory response to repeat as compared to initial syphilis.
Methods Prospective study: We prospectively recruited patients with a new diagnosis of syphilis, described their clinical and demographic characteristics and tested their plasma for IFNa, IFNg, IL-1b, IL-12p40, IL-12p70, IP-10, MCP-1, MIP-1a, MIP-1β, IL-4, IL-5, IL-6, IL-7, IL-8, IL-10, IL-17A (Luminex multiplex assay (EMD Millipore) and their serum with a quantitative Rapid Plasma Reagin (RPR) test (Macrovue, Becton, Dickinson) at baseline pre-treatment and 6 months following therapy. The Mann-Whitney U-test was used to assess if cytokine levels and RPR titres differed between those with initial and repeat syphilis sampled at baseline and 6 month time points. Retrospective study: We compared RPR response kinetics between initial and repeat syphilis in persons attending our HIV/STI clinic.
Results Prospective study: 91 individuals, 36 with initial- and 55 with repeat syphilis, were included in the study. At baseline visit those with initial syphilis were more likely to be symptomatic and had higher levels of IL-8, IL-10 and MIP-1β. By the 6 month visit IL-10 remained higher in those with initial syphilis. Median RPR titres were higher at baseline in the repeat compared to the initial infection groups in those with symptomatic (primary and/or secondary) syphilis (1/128 [IQR 1/64-1/256] vs. 1/64 [IQR 1/16-1/128], p=0.016) but not those with latent syphilis. Retrospective study: Syphilis was diagnosed in 1 027/12 520 individuals tested. Repeaters had higher RPR titres at diagnosis and a stepwise increase in RPR titre with number of previous syphilis episodes. They had a different RPR response kinetic: they were less likely to be serofast and less likely to serorevert than initial syphilis. Not one of those with 4 or more episodes of syphilis seroreverted.
Conclusion Repeat syphilis has a different clinical presentation and immunological response than initial infection. We discuss the implications for clinicians and epidemiologists.

O11.3 EXTREME HETEROGENEITY IN VAGINAL MICROBIAL KINETICS WITHIN AND ACROSS WOMEN

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Introduction Incident bacterial vaginosis (BV) is associated with a shift in the vaginal microbiota from lactobacillus predominant to a diverse community of anaerobic bacteria The kinetics of this shift are poorly described. We sought to identify the dynamics of incident BV.
Methods Twenty women with frequent BV (>3 episodes per year) self-collected vaginal swabs every 8 hours for 60 days. Swabs were analysed with quantitative PCR targeting *Lactobacillus iners*, *Lactobacillus jensenii*, *Lactobacillus crispatus*, *Gardenerella vaginalis*, *Atopobium vaginae*, bacterial vaginosis associated bacterium-2 (BVAB2), and *Megasphaera spp*. We defined bacteria as absent, low (4 DNA copies), moderate (104–108 DNA copies) or high-level (108–1011 DNA copies). Participants kept detailed diaries regarding sexual behaviour, menstruation, antibiotic use and vulvovaginal symptoms.
Results We noted three states of the vaginal microbiota: three women had high-level lactobacilli with intermittent, transient low-level *G. vaginalis* throughout the sampling period (State 1); five women had high-level lactobacilli with persistent, fluctuating low to moderate-level *G. vaginalis* and other BV associated anaerobic species throughout the sampling period (State 2); two women had polymicrobial colonisation with high-level *G. vaginalis* and other BV associated species, and intermittent, transient low-level, or persistent moderate-level *Lactobacillus jensenii* and *crispatus* throughout the sampling period (State 3). Ten women shifted between States 2 and 3 on at least one occasion. Extremely rapid transition from State 2 to 3 over.
Conclusions The vaginal microbiota is extremely dynamic and BV develops over narrow time intervals. Low-levels of BV associated species in the vagina may be a risk factor for rapid, incident BV. Future studies will identify drivers of shifts in the vaginal bacterial biota.