the progress to neurosyphilis. Moreover, high expression of CSF CXCL13 mediated B cells migration both *in vitro* and *in vivo*. More importantly, there was a positive correlation between the CSF B cells, immunoglobulin indices, and CSF CXCL13 levels. Interestingly, ectopic germinal centres (EGCs), the important structures for the maintenance of humoral immunity, were observed in the intracranial syphilitic gumma.

Conclusion CXCL13/CXCR5 mediated the aggregation of B cells, which directed the aberrant humoral immune responses via the formation of EGCs. Our observations suggest a molecular mechanism of neurological damage in neurosyphilis.

| LB1.71 | **VAGINAL MICROBIOTA CONTROLS EPITHELIAL CELL PROLIFERATION AND SUSCEPTIBILITY TO *C. TRACHOMATIS* INFECTION** |

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Introduction Dysbiotic states of the vaginal microbiota, including bacterial vaginosis (BV), are characterised by a paucity of *Lactobacillus* spp., the presence of an array of anaerobes, a pH >4.5, and are associated with increased susceptibility to STIs. The mechanisms by which vaginal microbiota protect or increase the risk to STIs remain unknown. By characterising the *in vivo* host miRNA response to different types of vaginal microbiota, we gained insight into functions that play a role in epithelial homeostasis. Understanding the molecular mechanisms driving vaginal dysbiosis may help develop strategies reduce the risk of STIs.

Methods Leveraging prospectively collected daily vaginal swab samples, miRNA-seq profiling was used to gain insight into host regulatory mechanisms controlled by vaginal microbial communities. Random Forest miRNA feature ranking was used to identify miRNAs expressed in response to different types of vaginal microbiota. *In vitro*, VK2 epithelial cells were exposed to vaginal bacteria culture supernatants, and miRNA expression was measured by qPCR, while cyclin D1 was measured by Western blot. Cell proliferation was quantified using scratch and EdU assays. Cell proliferation's effect on *C. trachomatis* infection was performed on cervical A2EN epithelial cells.

Results We leveraged daily collected vaginal samples in conjunction with a machine learning approach to discover eight miRNAs differently controlled by vaginal microbiota. Of these, expression of miR-193b, known to regulate host cell proliferation, was increased by *Lactobacillus* spp.-dominated microbiota. Recently, *in vitro*, VK2 cells exposed to *Lactobacillus*-conditioned supernatants exhibited reduced proliferation, high miRNA-193b expression and decreased abundance of cyclin D1. Importantly, epithelial cell proliferation was required for efficient *C. trachomatis* infection.

Conclusion These findings contribute to the vaginal microbiota's role in cellular homeostasis and susceptibility to STIs, which may lead to improved preventive strategies by modulating vaginal microbiota composition.

| LB1.72 | **PREVALENCE OF HUMAN PAPILLOMA VIRUS INFECTION AND DETECTION OF HPV TYPES IN HIV- POSITIVE MALE PATIENTS FOLLOWED BY ANAL CYTOLOGICAL ABNORMALITIES IN EASTERN INDIA** |

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Introduction India has a third large population of people living with Human Immunodeficiency Virus (HIV) in the world. Incidence of Human papilloma virus (HPV) infection anal cancer is high among People Living with HIV/AIDS (PLHIV). However, there are very few studies among HIV positive men in India. Thus this cross-sectional study was performed to assess the prevalence and risk factors of anal HPV infection and anal HPV types in HIV positive males attending the Anti-retroviral therapy (ART) centre.

Method We screened HIV positive men with Anal Papanicolaou smear cytology and HPV testing. HPV DNA was detected by Consensus Polymerase Chain Reaction (PCR) using dissimilar E6 consensus and MY09/11 consensus primers followed by sequencing for confirmation the type of HPV.

Results 126 HIV-positive men were included in the study. Mean age was 35.37 ± 8.2 years. Median CD4+T cell counts were 253/μL. Mean weight and mean Haemoglobin was 49.53 ± 8.45 Kg and 11.2 ± 1.73 g/dl respectively.74 patients were treatment naive and 52 were on Anti-Retroviral Therapy (ART) 48 (38%) gave positive for history of anal intercourse with other men although 91% were married. Anal cytology was done in 95 patients, out of which 61 (64.2%) had cytological abnormalities, of which 28 (29.4%) cases had LSIL, 33 (34.7%), had ASCUS. In multivariate analysis, an only risk factor for cytological abnormality was a history of anal intercourse Odds Ratio (OR) 0.122 (95% 0.036–0.410). HPV DNA was detected in 25.21% patients. The most prevalent HPV type in the study group was HPV-16 (10%) followed by HPV-18,31,35,17,66,72,52,68 and 107 (15.21%) genotypes were detected in anal pap samples.

Conclusion In our study, the prevalence of HPV infection was 25.21% and anal cytological abnormality was 64.2%, which is high. Anal Pap smear screening should be done especially in HIV positive males with the history of bisexuality. HPV DNA screening by using consensus PCR method followed by sequencing more beneficial and cost-effective for HPV genotyping HIV infected men on antiretroviral therapy.

Clinical Science

| P2.01 | **ASSESSING THE IMPACT OF INDIVIDUALISED TREATMENT: AN INDIVIDUAL-BASED MATHEMATICAL MODELLING STUDY OF ANTIMICROBIAL RESISTANT *NEISSERIA GONORRHOEAE* TRANSMISSION, DIAGNOSIS AND TREATMENT IN MEN WHO HAVE SEX WITH MEN** |

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Introduction Antimicrobial resistant (AMR) gonorrhoea is a global public health threat. In London, diagnoses in men who have sex with men (MSM) have more than quadrupled from

2010 to 2015. Importantly, our last-line treatment (ceftriaxone) is used in first-line dual therapy. However, over half of tested isolates are still sensitive to older drugs, e.g. ciprofloxacin. Discriminatory point-of-care tests (POCT) to detect drug sensitivity are under development, enabling individualised treatment decisions.

Methods We developed an individual-based transmission model of gonorrhoea infection in MSM, incorporating ciprofloxacin-sensitive and resistant strains. The cumulative contact network is captured by periodically restricting active connexions to reflect the transience of high degree contacts. We explored different strategies to improve treatment selection including a) discriminatory POCT, and b) selecting partner treatment based on index case susceptibility. Outcomes included population prevalence and percentage reduction in ceftriaxone doses. Additional sensitivity analyses simulated the impact of reducing delays in the patient pathways on gonorrhoea prevalence.

Results The flexible model structure enabled us to efficiently explore a large region of parameter space, and credibly simulate London gonorrhoea transmission dynamics - assuming 2%–10% prevalence and 10–50 daily diagnoses per 100,000 MSM. Initial simulations show that a) using POCT to detect ciprofloxacin sensitive infections resulted in a 66% decrease in ceftriaxone doses, and b) using index case sensitivity profile to direct treatment of partners could reduce ceftriaxone use by 25%.

Conclusion POCT are likely to dramatically reduce reliance on ceftriaxone. In the meantime, we could use existing data more informatively. If lab turnaround times are fast enough, index case sensitivity profiles could be used to select effective treatments for partners. This new framework addresses limitations of previous models and provides a flexible platform for exploring control options for AMR gonorrhoea.

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Introduction Bearing in mind that the diagnosis of oral lesions, particularly those induced by HPV, may influence therapeutic method choice, the goal of this study was to describe the clinical and histological characteristics of these lesions in the oral cavity.

Methods A sectional laboratory research based on the reports obtained from the oral pathology laboratory of a private university of Rio de Janeiro, between 1998 to 2015 was held, with the objective of assessing the profile of 104 individuals diagnosed with HPV-induced oral lesions.

Results The lesions found were oral squamous papilloma (83%), verruca vulgaris (11,3%) and condyloma acuminata (5,6%). The sites more commonly involved were the tongue (37 lesions, 33,9%), the palate (21 lesions, 19,8%) and lip mucosa (19 lesions, 17,9%). The oral squamous papilloma was diagnosed in 87 patients, with average age of 40.3 years, race-colour white (73%), being the tongue (39,8%) and the palate (22,7%) the more commonly described sites, with asymptomatic lesions of the type exophytic (15,9%) and pedunculated (13.6%) and had whitish colour, with an average size of about 0.55 cm in diameter. As for the 12 verruca vulgaris diagnosed, the individuals had an average age of 21.3 years, most of them affecting lip mucosa region with 7 lesions (to 58.3%). The condyloma acuminata lesions were found in only 5 individuals, with ages ranging from 25 to 51 years of age, with an average of 32.8 years. The site of greatest occurrence was the lip mucous membrane with 3 lesions (50%).

Conclusion In this study, it was possible to observe that women had more lesions in the oral cavity, being the tongue the most common site, and the oral squamous papilloma the most diagnosed lesion. The description of the histological and molecular aspects of these injuries becomes necessary so that there is an effective contribution to the knowledge of factors that may be associated with the development of these lesions in the oral cavity in the era of the quadrivalent/nonavalent vaccine.

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Introduction Microorganisms associated with Bacterial Vaginosis (BV) have been isolated from the normal flora of the male genital tract, and their presence could be related to the recurrence of BV in women after antibiotic treatment. Therefore, the treatment of sexual partners could decrease the recurrence of infection. To assess the effectiveness in women and the safety in men of concurrent antibiotic treatment for the sexual partners of women treated for BV.

Search methods We searched the Cochrane STI Specialised Register, CENTRAL, MEDLINE, Embase, LILACS, International Clinical Trials Registry Platform, ClinicalTrials and Web of Science. We also handsearched conference proceedings.

Selection criteria Randomised controlled trials that compared the concurrent use of any antibiotic treatment with placebo by the sexual partners of women treated for BV.

Data collection and analysis Authors independently assessed trials for inclusion, extracted data and assessed the risk of bias. Disagreements were resolved through consensus. Quality of the evidence were assessed using GRADE.

Results Five trials (854 patients) met our inclusion criteria. High quality evidence shows that antibiotic treatment does not increase the rate of clinical or symptomatic improvement in women during the first week (risk ratio (RR) 0.99, 95% confidence interval (CI) 0.96 to 1.03; RR 1.06, 95% CI 1.00 to