Immunization with RG1-VLP adjuvanted with human-applicable alum-MPL induced robust L2 antibodies (ELISA titers 2,500–12,500), which cross-neutralised mucosal high-risk HPV26/33/35/39/68/59/68/73/69/53/34, low-risk HPV6/11/32/40/44/70, and cutaneous HPV2/27/3/76 (titers 25–1,000), and a vigorous CTL response. *In vivo*, mice were efficiently protected against experimental vaginal challenge with mucosal high-risk PsV types HPV16/18/45/31/33/52/58/35/39/51/59/68/56/73/26/53/66/34 and low-risk HPV6/43/44. Enduring protection was demonstrated 1 year after vaccination.

RG1-VLP is a promising next-generation vaccine with broad efficacy against all relevant mucosal and also cutaneous HPV types.

001.6 PERSISTENT SIV-SERONEGATIVE MACAQUE MONKEYS GENERATE MULTI-CYTOKINE ANTI- SIV MUCOSAL IMMUNE RESPONSES FOLLOWING SERIAL LOW-DOSE SIV MUCOSAL CHALLENGE

doi:10.1136/sextrans-2013-051184.0088

[1,2]**K S MacDonald**, [1,2]K Haq, [1,2]J Chan, [1]O Iwajomo, [3]M Janes, [2]C Perciani, [3,4]R Pilon, [4]D Caldwell, [3]P Sandstrom, [1,2]D O Willer. *[1]Dept.of Microbiology, Mount Sinai Hospital, Toronto, ON, Canada; [2]Depts of Medicine and Immunology, University of Toronto, Toronto, ON, Canada; [3]National HIV & Retrovirology Laboratories, Public Health Agency of Canada, Ottawa, ON, Canada; [4]Scientific Services Division, Health Canada, Ottawa, ON, Canada*

Background There are no systematic prospective human or simian studies on the effects of repeated sub-infectious doses of HIV/SIV on mucosal and systemic immunity. The capacity and mechanism of how these responses may impact acquisition and subsequent disease course are also unknown.
Methods To address this, we examined cynolmolgus macaques as part of a vaccine trial, for their ability to generate mucosal and systemic immune responses following repeated ultra low-dose mucosal SIVmac239 challenge. Animals were challenged intra-rectally weekly according to a 24-week dose-escalation. Blood was obtained weekly, and rectal biopsies were obtained 18 to 24w post SIV challenge and analysed by flow cytometry for anti-SIV T-cell responses. Intracellular cytokine responses (IFN-γ, IL-2, TNFα and CD107a) were measured.
Results Total CD4+ responses against two distinct antigenic targets correlated with apparent resistance to infection as measured by the number of challenges, total dose and infecting dose. Moreover, CD8+ responses were also predictive of susceptibility to infection. Both CD4 and CD8 T cell effectors were observed secreting IFN γ, TNF α, IL2 and CD107a in response to SIV gene products not present in the SIV vaccine that the animals received. Placebo-vaccinated animals did not have significantly fewer mucosal immune responses than vaccinees but they did have fewer blood responses suggesting that mucosal responses were generated by the SIV exposure while systemic responses were generated by the vaccine. Multiple sub-infectious SIV challenges did not induce humoral responses in the blood, as determined by western blot assay.
Conclusions Together, this data suggests that these mucosal immune responses are the predominantly the result of priming by repeated low dose SIV challenge. Such an effect alters subsequent susceptibility to infection which has implications for vaccine studies and for understanding the biology of transmission since it increases the resistance to infection of both vaccinees and placebo recipients unpredictably.

0.02 - Antimicrobial therapy for genital tract infections

002.1 A RANDOMISED, CONTROLLED STUDY TO ASSESS THE EFFICACY AND SAFETY OF NIFURATEL VAGINAL TABLETS ON BACTERIAL VAGINOSIS

doi:10.1136/sextrans-2013-051184.0089

[1]**W Mendling**, [2]M Caserini, [2]R Palmieri. *[1]German Center for Infections in Obstetrics and Gynecology, Wuppertal, Germany; [2]Polichem SA, Lugano, Switzerland*

Background Bacterial vaginosis (BV) is a polymicrobial infection and the most common cause of vaginal discharge in women during their reproductive years. A randomised, evaluator-blinded, parallel group pivotal study was carried out to assess the efficacy and safety of the local treatment with nifuratel vaginal tablets in comparison with metronidazole vaginal suppositories in premenopausal, non-pregnant women suffering from BV.
Methods A total of 727 adult women in 38 German sites, with BV diagnosed by Amsel and Nugent criteria, were enrolled after providing their written informed consent. Patients received one course of vaginal treatment with metronidazole 100 mg once daily (o.d.) for six days or nifuratel 250 mg o.d. for ten days. The test of cure visit was performed on day 24 ± 3 after the beginning of the treatment. The efficacy was evaluated using the therapeutic cure rate defined as a combined endpoint including Amsel criteria, clinical signs and symptoms and Nugent score evaluated by a blinded central assessor. The non-inferiority of nifuratel compared to metronidazole at the pre-specified margin of Δ-15% was defined as the clinically acceptable difference between the two active treatments.
Results The therapeutic cure rate was achieved in the per protocol data set by the 53.7% of women: 54.5% in the nifuratel group and 52.9% in metronidazole treated patients (p = 0.0002). Concerning Nugent score (0–3), the two treatments had similar responder rates: 66.2% nifuratel vs. 66.8% metronidazole (p = 0.0006), same results were obtained in terms of Amsel criteria normalisation 78.9% nifuratel vs. 78.6% metronidazole (p = 0.0001). Nifuratel was slightly better to metronidazole curing vulvovaginal signs and symptoms: 81.2% vs. 78.6% (p < 0.0001).
Conclusion The study results suggest that nifuratel 250 mg vaginal tablet o.d. for 10 days may be recommended as first-line treatment in BV as well as the golden standard metronidazole since their efficacy is comparable.

002.2 SUSCEPTIBLITY OF BACTERIAL VAGINOSIS (BV)-ASSOCIATED BACTERIA AND LACTOBACILLI TO RIFAXIMIN, METRONIDAZOLE AND CLINDAMYCIN

doi:10.1136/sextrans-2013-051184.0090

[1,2,3]**S L Hillier**, [1]L Cosentino, [1]M Petrina, [1]L Rabe. *[1]Magee Womens Research Institute, Pittsburgh, PA, United States; [2]University of Pittsburgh Departments of Obstetrics, Gynecology and Reproductive Sciences, Pittsburgh, PA, United States; [3]University of Pittsburgh Department of Microbiology and Molecular Genetics, Pittsburgh, PA, United States*

Objective Rifaximin is a semisynthetic rifamycin with poor oral bioavailability, used as an oral agent for the treatment of traveller's diarrhoea and hepatic encephalopathy. Rifaximin is in development as a topical agent for the treatment of bacterial vaginosis (BV). The objective of this study was to evaluate the antimicrobial susceptibility of vaginal isolates of facultative and anaerobic bacteria to rifaximin, clindamycin and metronidazole.
Methods A total of 411 unique BV-related bacteria and 100 isolates of lactobacilli recovered from the human vagina of US women during the years 2009–2012 were tested for antimicrobial susceptibility by the agar dilution CLSI reference method to calculate MICs.
Results Overall, 142 (35%) of the BV-associated vaginal isolates tested were resistant to metronidazole, 63 (15%) were resistant to clindamycin and 11 (2.6%) were resistant to rifaximin. Metronidazole resistance was observed most frequently among *Gardnerella vaginalis* (n = 100 isolates, 69% resistant), *Atopobium vaginae* (n = 62, 87% resistant) and *Mobiluncus* (n = 40, 42% resistant), whereas most were susceptible to both clindamycin (197/202; 98% susceptible) and rifaximin (191/202; 95% susceptible). Both rifaximin and metronidazole were effective against all strains of *Prevotella bivia*