LB1.68 VAGINAL LACTIC ACID ELICITS AN ANTI-INFLAMMATORY RESPONSE FROM HUMAN CERVICOVAGINAL EPITHELIAL CELLS AND INHIBITS PRODUCTION OF PRO-INFLAMMATORY MEDIATORS ASSOCIATED WITH HIV AQUISITION

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Introduction Inflammation in the female reproductive tract (FRT) promotes while *Lactobacillus* spp. protect women from HIV acquisition. We assessed if lactic acid (LA), a major acid metabolite produced by lactobacilli, decreases inflammatory mediators produced by cervicovaginal epithelium.

Methods LA at physiological levels and pH were added apically to human vaginal or cervical epithelial cells and an organotypic tissue model cultured in transwells. Cells were stimulated apically with bacterial or viral mimicking TLR agonists, TNF or genital fluids (data collected in 2017). Cytokines and chemokines were quantified by luminex-based assays.

Results LA (pH 3.9) treatment of epithelial cell lines elicited significant increases in the anti-inflammatory cytokine IL-1RA. When added simultaneously to stimulation, LA inhibited the TLR agonist-induced production of inflammatory mediators IL-6, IL-8, TNFα, RANTES and MIP3α. The same LA anti-inflammatory effects were not recapitulated with media acidified to the same pH with HCl, and was mediated by the protonated form of LA present at pH ≤3.9. Both l- and d-isomers of LA elicited similar anti-inflammatory effects. LA pretreatment of cells for 1 hour, followed by cell washing and TLR agonist stimulation, inhibited pro-inflammatory production indicating a direct effect on cells. A similar anti-inflammatory effect of LA was observed in primary cervicovaginal cells and in an organotypic epithelial tissue model, and when FRT epithelial cells were exposed to either cervicovaginal or seminal fluids. Immune mediators were elicited by LA at physiological levels and pH that had little impact on cell viability or monolayer/tissue integrity.

Conclusion LA acts on FRT epithelial cells to inhibit inflammation that might explain in part the HIV protective properties of LA producing lactobacilli. This study highlights the potential use of LA-containing agents or LA-producing probiotics as adjuncts to female-initiated HIV prevention strategies

LB1.69 CLINICAL AND ANALYTICAL EVALUATION OF THE NEW APTIMA *MYCOPLASMA GENITALIUM* ASSAY ON THE PANTHER INSTRUMENT (HOLOGIC), *M. GENITALIUM* PREVALENCE, AND ANTIMICROBIAL RESISTANCE IN *M. GENITALIUM* IN SWEDEN, DENMARK AND NORWAY IN 2016

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Introduction: *Mycoplasma genitalium* (MG) is a frequent aetiology of urethritis and cervicitis, which can result in severe reproductive complications. Resistance in MG to first-line (azithromycin) and second-line (moxifloxacin) treatment has rapidly increased. The new CE-marked APTIMA MG assay (Hologic) is now commercially available. Our aims were to evaluate the clinical and analytical sensitivity and specificity of the new APTIMA MG assay and an APTIMA MG RUO assay, and describe the prevalence of MG, *N. gonorrhoeae*, *C. trachomatis* and resistance to azithromycin and moxifloxacin in Sweden, Denmark and Norway in 2016.

Methods From January 2016 to March 2017, first-void urine (from males) and vaginal swabs were collected from consecutive attendees at 3 STD clinics in Sweden, Denmark and Norway. All samples were tested with the APTIMA MG assay, APTIMA MG RUO assay, APTIMA CT/NG assay, and a quantitative *mgpB* PCR. Resistance was determined by sequencing of the 23S rRNA gene and *parC*. For analytical evaluation, isolates of diverse genome-sequenced MG and other mycoplasma species in different concentration were tested.

Results In total, 5269 patients were included. The rate of MG infected patients was 7.3%, however, the rate significantly varied in the different countries. The sensitivity of the APTIMA MG assay, APTIMA MG RUO assay and *mgpB* PCR ranged between 95.8%–100%, 95.8%–100%, and 73.2%–81.6%, respectively, in the countries. The specificity of the APTIMA MG assay, APTIMA MG RUO assay and *mgpB* PCR ranged between 99.6%–100%, 100%, and 99.7%–100%, respectively. The resistance level to azithromycin was 40% (18%–56% in the countries) and multidrug resistance (to both azithromycin and moxifloxacin) was found in all countries.

Conclusion Both the APTIMA MG assays had a significantly superior sensitivity compared to the *mgpB* PCR. The prevalence of MG as well as azithromycin resistance was high. Increased testing using validated and quality assured molecular tests for MG, antimicrobial resistance surveillance and routine resistance testing in MG-positive samples is crucial.

LB1.70 ABERRANT HUMORAL IMMUNE RESPONSES IN NEUROSYPHILIS: CXCL13/CXCR5 PLAY A PIVOTAL ROLE FOR B CELL RECRUITMENT TO THE CSF

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Introduction Previous studies have documented that humoral immune responses participated in neurological damage in neurosyphilis patients. However, the mechanisms that trigger and maintain humoral immunity involved in neurosyphilis remain unknown.

Methods Using flow cytometry expression of B cells was measured in neurosyphilis and non-neurosyphilis. Expression of immunoglobulin indices and CXCL13 was detected by ELISA. A modified chamber assays were used to migration and inhibition assays. The presence of $CXCL13^+$cells, $CD20^+$B cells, $CD3^+$T cells, $CD138^+$plasma cells and $CD35^+$follicular dendritic cells was studied by immunohistochemistry.

Results We found that enrichment of B cells were observed and activated in the cerebrospinal fluid (CSF) of NS patients. Immunoglobulin indices were increased and associated with