Results Compared to unimmunized, treponemal burden by DF in lesion aspirates at Day 19 was significantly lower in animals that received both Natural and Synthetic adjuvant groups. By qPCR, treponemal burden was significantly lower in the Natural group. At day 19 and 30, respectively, the proportion of lesions ulcerating was significantly lower in the Natural group, compared to Unimmunized. At day 30, the proportion of lesions ulcerating in the Natural group was significantly lower than in the Synthetic group. Mean lesion volume was smaller in immunized groups versus unimmunized on days 10–25 post-challenge. RIT indicated the lowest number of disseminated T. pallidum in rabbit tissues from the Natural group, followed by the Synthetic group, then the unimmunized group.

Conclusion Immunization with the three-antigen cocktail significantly attenuates syphilis infection: enhancing T. pallidum clearance, promoting lesion healing, and reducing dissemination. In rabbits, Natural adjuvant was more effective than Synthetic adjuvant in inducing protective immunity.

Disclosure No significant relationships.

S12.3 THERAPEUTIC VACCINATION TO TREAT HPV DISEASE: LESSONS LEARNED FROM HIGH GRADE INTRAEPITHELIAL LESIONS

Margaret M Madeleine*, Fred Hutchinson Cancer Research Center, USA

10.1136/sextrans-2019-sti.59

Malignancies caused by HPV represent a model clinical setting in which to test principles of immunotherapies, and to discover the consequences of interactions between tumors and their attendant immune milieu. A tumor-specific, non-‘self’ antigenic target is known, as HPV cancers are driven by constitutive and functionally obligate expression of the E6 and E7 viral oncoproteins, which bind and inactivate p53 and pRb, respectively. HPV disease can also be immunogenic; a growing body of evidence demonstrates that HPV-specific T-cell responses can mediate concomitant histologic regression and clearance of detectable virus in subsets of patients who have cervical HSILs. However, HPV researchers are faced with issues common to the development of effective immune-based therapies for every solid tumor, including determining the mechanisms that shape how a tissue microenvironment renders immune cells dysfunctional, decapuring the immunomodulatory effects of other treatment modalities such as targeted therapies, chemotherapy, and radiation, and identifying contributions to immune functional polarization mediated by tissue-specific microbiota. Insights gained from deconvolution of the cervical lesional microenvironment will be discussed.

S13 – CONTROVERSIES IN CLINICAL STI CARE

Tuesday, July 16, 2019 4:15 PM – 5:45 PM

S13.1 DOES AZITHROMYCIN HAVE A FUTURE IN THE TREATMENT OF GONORRHOEA AND CHLAMYDIAL INFECTION?

Jane Hocking*. University of Melbourne, Melbourne School of Population and Global Health, Carlton, Australia

10.1136/sextrans-2019-sti.61

Azithromycin, a second generation macrolide antimicrobial, has been widely used as a first line treatment for chlamydia and non-gonococcal urethritis and as part of dual treatment with ceftriaxone for gonorrhoea. Its unique pharmacokinetic properties including its extensive tissue distribution and long half-life, have enabled it to be administered as single dose treatment making it preferred for many STIs, particularly when there are any concerns about treatment adherence. A single dose regimen of azithromycin gives a larger maximum tissue concentration and has more rapid bacterial clearance than longer courses of the same overall dose suggesting that shorter durations of larger doses (>1g) will increase treatment efficacy and reduce the induction of resistance. However, the evidence suggests that the efficacy of azithromycin may vary by site of infection, particularly for chlamydia infection, with observational data finding that it might not be as effective for...
rectal chlamydia infections. The pharmacokinetic properties of azithromycin may also contribute to the development of macrolide resistance in other STIs including gonorrhoea and Mycoplasma genitalium. It has extensive tissue distribution with the majority of the drug confined to the intracellular space. After entering the acidic compartments of cells, it becomes trapped leading to its slow release from the tissues contributing to its long half-life. While this is effective for treating chlamydia, the long half-life results in sub-inhibitory levels in the extracellular space, potentially contributing to the development of macrolide resistance in other organisms. This is particularly an issue when new infections are acquired during the two weeks following azithromycin treatment when sub inhibitory concentrations exist. This presentation will discuss how the pharmacokinetic properties of azithromycin affect its efficacy for treating chlamydia infections and whether it should have an ongoing role as part of a dual treatment regimen with ceftriaxone for gonorrhoea infections.

Disclosure No significant relationships.

### S13.3 DO RECTAL BACTERIAL STIS IN WOMEN MATTER? WHO SHOULD WE TEST AND WHEN?

Christine Khosropour*. University of Washington, Epidemiology, Seattle, USA

10.1136/sextrans-2019-sti.63

Rectal bacterial STIs are increasingly recognized as common infections among clinic-attending women, with estimated prevalences of 5% for rectal Neisseria gonorrhoeae (GC) and 9% for rectal Chlamydia trachomatis (CT). Although these prevalences are similar to urogenital GC and CT among these same populations of women, we know very little about the health implications or epidemiology of rectal STIs among women. Rectal STIs are typically asymptomatic and the infections themselves may not be morbid conditions. However, some investigators have hypothesized that women could autoinoculate bacteria from the rectum to the vagina which may result in reproductive tract sequelae in the absence of vaginal sex. Even if there were strong evidence to suggest this does occur, it is unclear which populations of women should be targeted for rectal screening. Employing current screening guidelines for urogenital STIs would assure treatment of women with concurrent rectal STI, but would miss women with isolated rectal STI. Further, the efficacy of azithromycin for CT may be lower in the rectum than the urogenital tract, suggesting that screening and treating women for urogenital STI without regard to the presence of rectal CT may result in a persistent rectal infection. Alternatively, rectal STI screening could be limited to women who report anal sex. However, the prevalence of rectal STIs is similar among women who do and do not report anal sex, suggesting that this screening strategy would miss a substantial proportion of cases. Finally, some have hypothesized that oral acquisition of CT may lead to rectal infection. If this route is possible, rectal screening for women who report penile-oral sex may be warranted. This session will review the epidemiologic and microbiologic evidence on these topics and will discuss what studies are needed to address the gaps in our understanding of these infections and define a way forward.

Disclosure No significant relationships.

### S13.4 HPV VACCINATION IN MSM: WHO SHOULD BE VACCINATED AND IS THERE A ROLE FOR VACCINATION OF OLDER AND/OR HIV-POSITIVE MSM IN PREVENTING INITIAL, PERSISTENT AND RECURRENT HPV AND RELATED DISEASES?

David Templeton*. RPA Sexual Health, Sydney, Australia

10.1136/sextrans-2019-sti.64

Background Anogenital infection with human papillomavirus (HPV) disproportionately affects men who have sex with men (MSM), especially those living with HIV. It remains unclear whether HPV vaccination of older MSM and/or MSM living with HIV is beneficial in terms of preventing new HPV infections, reinfections with the same HPV subtype, new diagnoses or recurrence of HPV-related lesions or anal cancer. Results HPV16 causes most anal squamous cell cancer worldwide. However, other high-risk HPV (hrHPV) types contained in the 9-valent vaccine (9vHPVvax) cause a substantial minority of anal cancers in HIV-positive MSM. In the landmark...