

activity, it may take months to years for host defenses to gain control of the infection. Tps unusual outer membrane architecture is believed to underlie this duality of immune evasion and recognition. To better understand the dynamics of immune evasion and Tp clearance in early syphilis, we studied immune responses of SS patients in peripheral blood (PB) and skin in relation to Tp burdens.

Methods 27 HIV(-) SS patients and 26 healthy controls were enrolled. Circulating monocytes, dendritic cells (DCs) and natural killer (NK) cells were characterised by flow cytometry and qRT-PCR. SS skin biopsies were analysed by immunohistochemistry (IHC) and microarray. Ex vivo opsonophagocytosis assays were performed with live Tp (Nichols) and purified human monocytes.

Results Despite the demonstrated presence of Tp in blood, circulating monocytes exhibited only mild activation by flow cytometry without detectable cytokine production by qRT-PCR. We also observed decreased numbers of circulating IFN γ -producing and cytotoxic NK cells along with an emergent CD16+/CD56- NK-cell population. In contrast, skin lesions, which contained abundant Tp by IHC and PCR, contained transcripts for a variety of pro-inflammatory cytokines (IFN γ , TNF α , IL1b), monocyte chemotactic factors (CCL2, CCL5 and CXCL10) and macrophage and DC surface activation markers (CD80, CD86). Transcripts for genes associated with Fc-mediated phagocytosis (Fc γ RI, Fc γ R3), endosomal TLRs (TLR7-9), and cytotoxic T cells (CD8, granzyme, perforin) also were detected in lesional skin. IHC corroborated the presence of macrophages and CD4 and CD8 T cells, but not NK cells, in the biopsies. Patient sera promoted Tp uptake and monocyte activation, although substantial proportions of Tp were capable of evading phagocytosis.

Conclusions Our results support a model in which the duality of immune evasion/recognition which occurs in SS reflects the relative burdens of Tp in skin and blood as well the presence of Tp populations with differential capacity for binding opsonic antibodies. Macrophage activation due to opsonophagocytosis of a subpopulation of Tp drives the recruitment to skin of immune cells that slowly clear infection. Results also suggest that cytotoxic cellular responses may contribute to elimination of Tp.

Clinical sciences poster session 7: vaginal infections

P3-S7.01 EVALUATION OF A SIMPLE POINT-OF-CARE RAPID TEST FOR DETECTING TRICHOMONAS VAGINALIS AMONG WOMEN IN MYSORE, INDIA

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Background *Trichomonas vaginalis* is one of the easily treatable sexually transmitted infections in the world. Current methods used to diagnose trichomoniasis rely heavily on training and experience of the technician and have low performance reliability. These methods are unsuitable for settings where accessibility to a continuous electrical source may be a challenge. We examined the performance of OSOM *Trichomonas* rapid point-of-care test (POC) as compared to the gold standard (culture) and the routine method of diagnosis in clinical laboratories (wet-mount microscopy) in Mysore, India.

Methods Sexually active women over age 18 and seeking care at Prerana Reproductive Health Clinic were enrolled into the study from July 2009 to August 2010. Clinician-collected vaginal swabs were evaluated for trichomonads using wet-mount microscopy, InPouchTM culture, and OSOM[®] *Trichomonas* Rapid Test in a blinded manner by different investigators.

Results Of the 417 women enrolled, the prevalence of Trichomoniasis diagnosed by culture was 16.3% (95% CI 12.9% to 20.3%). As compared to culture, the sensitivity, specificity, positive predictive value and negative predictive value for wet mount microscopy was 82.4%, 98.9%, 93.3%, 96.6%; for OSOM rapid test it was 88.2%, 99.4%, 96.8%, 97.8% respectively.

Conclusion OSOM Trich rapid test had very good performance with excellent sensitivity, specificity, positive predictive value, and negative predictive value of 88.2%, 99.4%, 96.8%, and 97.8%, respectively. The implementation of OSOM *Trichomonas* rapid test would significantly reduce the labour and material costs. Furthermore, frequent partner reinfection as a result of wrong or missed diagnosis can be reduced. It will also reduce other complications such as pelvic inflammatory disease and susceptibility to HIV.

P3-S7.02 PERFORMANCE OF A POINT-OF-CARE DIAGNOSTIC FOR BACTERIAL VAGINOSIS AMONG YOUNG REPRODUCTIVE AGE WOMEN IN MYSORE, INDIA

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Background Bacterial vaginosis (BV) remains the most common cause of abnormal vaginal discharge in Indian women of reproductive age and is associated with increased susceptibility to HIV/STI and preterm delivery. Diagnosis of BV in resource-poor settings is often overlooked; there is a need for cheap, rapid, objective point-of-care diagnostic test.

Methods Vaginal swabs were collected from women attending a women's health clinic. Women over the age of 18 with a pH of over 4.5 were invited to participate in the study. BV was diagnosed on the basis of the Nugent score, the Amsel clinical criteria, and results of OSOM BVBlue test independently by study clinician and laboratory personnel who were blinded to the results of the other tests.

Results From August 2009 to May 2010, 313 participants were enrolled. BV prevalence was 45.1% (95% CI 41.5% to 52.8%) according to Nugent score. When compared with the Nugent score, the sensitivity, specificity, positive predictive value, negative predictive value for Amsel clinical criteria was 61.9%, 88.3%, 81.5%, 73.7%; and for BVBlue it was 38.1%, 92.7%, 82.1%, 63.9% respectively. The performance of BVBlue can be increased if it is combined with "Whiff test where the sensitivity increases to 64.4%, sensitivity 85.6%, PPV 79.3% and NPV 73.8%".

Conclusions These results highlight the importance of systematic evaluation of rapid test kits as a low-cost alternative to laboratory diagnosis in resource-constrained settings. The BVBlue test is a simple, rapid, and objective test for the diagnosis of BV and has the potential to facilitate prompt diagnosis and appropriate treatment of BV in the absence of microscopy.

P3-S7.03 THE PREVALENCE OF BACTERIAL VAGINOSIS AMONG YOUNG WOMEN IN URBAN AREAS IN NIGERIA AND ITS MAJOR RISK FACTORS

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Issue Vaginitis is polymicrobial Sexually Transmitted Diseases (STDs), associated with some STD agents, presenting signs/symptoms such as foul smelling vaginal discharge, irritation, and itching. Among the leading infectious agents causing vaginitis among young women in urban communities in Nigeria, *Gardnerella vaginalis*