

activity, it may take months to years for host defenses to gain control of the infection. Tp's 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

doi:10.1136/sextrans-2011-050108.484

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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

doi:10.1136/sextrans-2011-050108.485

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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

doi:10.1136/sextrans-2011-050108.486

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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*

(cause of Bacterial Vaginosis) was found to top the list. Also, unprotected sex during first sexual intercourse and multiple sexual partners are found to be the major risk factors for the wide spread of Bacterial vaginosis among the study's young women.

Method Bacteriological and differential laboratory tests (microscopic examination, normal physiological saline wet-preparation, Potassium Hydroxide (OH) solution, whiff test, the litmus paper/PH level test, and gram staining) were carried out on High vaginal swab (HVS) specimens collected aseptically within 6 months from non-pregnant, non-menstruating young women who are not on antibiotics for a week before specimens were collected, and whose consent is sought before the study. The Study population is made up of both STD center attending and non-attending young women (mean age=25.50). In addition, a standard questionnaire ($r=0.77$) was administered to answer the major research/study questions on the major risk factors for Bacterial vaginosis.

Result From the 200 HVS collected, 68 % of primary isolates were isolated: *G vaginalis* (51.72%), *C albicans* (41.92%), and *T vaginalis* (06.36%) respectively ($p<0.0001$). According to the result from the study questionnaire, among 200 respondents, 37.71% had their first sexual intercourse without any protection, 39.16% were protected during their first sexual intercourse, and 23.13% did not recollect. Also, 31.65% had engaged in sexual intercourse with more than one sexual partner before with no protection in few occasions, 37.21% had had multiple sexual partners before with protection, 31.14% declined to provide answer to the multiple sexual partner questions.

Conclusions Bacterial vaginosis was found to be the most prevalent among young women in urban cities in Nigeria, and the major risk of contracting the infectious disease is unprotected sexual intercourse with multiple partners, and during first sexual intercourse. However, there is need for effective and efficient sex education and awareness to encourage the partners to be faithful to one another and for the promotion of safe sexual intercourse by using preventive means such as condoms.

P3-S7.04 CANDIDA SUSCEPTIBILITY TO ANTIFUNGALS IN GOMEL REGION (BELARUS)

doi:10.1136/sextrans-2011-050108.487

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Candidiasis is a fungal infection that often affects urogenital tract. About 75% of women had at least one episode of vulvovaginal candidiasis. Recent times chronic cause of candidiasis is prevalent in the clinical picture of the disease in Belarus. Along with *Candida albicans* other yeasts (*Candida crusei*, *Candida tropicalis*, *Candida glabrata*, *Candida parapsilosis*, etc) play a role in pathogenesis of the disease. Wide use of fluconazole in Belarus as well as prophylactic treatment during prolonged antibiotic use caused the grow of the resistance to the drug. Aim of our study was to reveal the incidence of urogenital candidiasis in patients who were checked up for STI in Gomel dermatovenereal hospital (Belarus), to study the resistance of *Candida spp.* to nystatin, clotrimazole, and fluconazole in vitro.

Materials and Methods We observed 4397 patients using clinical examination, microscopy, and cultural examination. Susceptibility to antifungal was studied by cultured method in vitro in 187 samples from the patients.

Results Urogenital candidiasis clinically and was diagnosed in 473 patients (10.8%) and confirmed by laboratory tests. Susceptibility to nystatin was founded in 183 cases (97.8%), to clotrimazole—in 125 cases (66.8%). Susceptibility to fluconazole was much lower and was registered only in 37 cases (19.8%).

Conclusions Candidiasis is a current problem for gynaecologists and venereologists in Belarus. Its rate reaches 10% among all patients coming for follow-up for STI. Effective treatment for candidiasis

should be developed. Wide use of fluconazole should be reevaluated because of its low susceptibility.

P3-S7.05 PHENOTYPIC CHARACTERISATION OF CLINICAL TRICHOMONAS VAGINALIS ISOLATES AMONG AAWSW IN SEXUAL PARTNERSHIPS

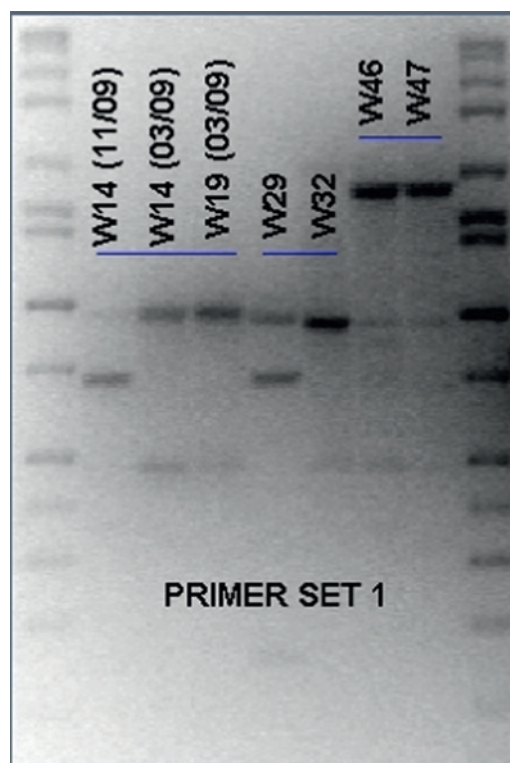
doi:10.1136/sextrans-2011-050108.488

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Background *Trichomonas vaginalis* (TV) is the most common non-viral sexually transmitted infection in the world. TV prevalence in US women is consistently highest among African Americans (AA). However, little data exists on the risk of TV infection among women who have sex with women (WSW) and the mechanism of transmission is poorly understood. The goal of this study was to evaluate the concordance of TV isolates among AAWSW involved in sexual partnerships using the random amplified polymorphonuclear DNA (RAPD) technique.

Methods AAWSW involved in sexual partnerships and participating in a cross-sectional study of STI prevalence rates at the Mississippi State Department of Health STD clinic in Jackson, MS, were selected for this study if both women in the partnership were infected with TV. All women completed a confidential survey asking detailed sexual history questions about female and male partners during the past 12 months. The RAPD technique utilising six unique PCR primers was performed on TV clinical isolates from each sexual partnership. RAPD amplicons were collated and categorised to determine genetic similarity between isolates from paired couples.

Results TV isolates from three paired couples were included in this study. RAPD profiling demonstrated that only one out of the three pairs of TV isolates was concordant see Abstract P3-S7.05 figure 1.



Abstract P3-S7.05 Figure 1 Primer Set 1.