

**P1.60 ASSESSMENT OF E-TEST TO DETERMINE THE ANTIMICROBIAL SUSCEPTIBILITY OF *NEISSERIA GONORRHOEA***

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**Introduction** To evaluate the clinical value of E-test method to determine the antimicrobial susceptibility of *Neisseria gonorrhoeae* (*N.gonorrhoeae*) to five antibiotics.

**Methods** A total of 100 *n.gonorrhoeae* strains were collected. The agar-dilution method, E-test and K-B method were used to determine the minimum inhibitory concentration (MIC) of five antibiotics including ciprofloxacin, ceftriaxone, spectinomycin, penicillin and azithromycin. Assessment of agreement were made between the E-test and the reference agar dilution test. The comparisons include of discrepancy rate and correlation coefficients were made between the E-test and K-B method.

**Results** The MIC<sub>50</sub>, MIC<sub>90</sub> and range of MIC values were either identical or only differed by 0.5 to 1.5 dilution step. All antimicrobial agents had excellent essential agreement (72% to 98%). Ciprofloxacin had the highest essential agreement (98%), followed by azithromycin (92%), while penicillin had the lowest essential agreement (72%). In addition to the discrepancy rate with E-test for penicillin was higher than the K-B method, the other four antibiotics were just the opposite. The correlation coefficients between the E-test and the reference agar dilution test for other four antibiotics were significantly higher than the K-B method.

**Conclusion** The E-test method for ciprofloxacin and azithromycin can be used as an alternative method of agar dilution method used in clinical, but the E-test method for ceftriaxone and spectinomycin may lead the results to low. And the E-test method for penicillin is not suitable to be used in clinical because of the low essential agreement and high minor discrepancy.

**LB1.61 PREVALENCE OF *TRICHOMONAS VAGINALIS* AMONG WOMEN ATTENDING A UNIVERSITY CLINIC IN PELOTAS, BRAZIL USING MICROSCOPY, CULTURE AND THE APTIMA TV ASSAY**

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**Introduction** Trichomoniasis is a common sexually transmitted infection caused by the protozoan *Trichomonas vaginalis* (TV). In Brazil, trichomoniasis is not a reportable infection and the prevalence is underestimated, due to the poor sensitivity of routinely used diagnostic tests. Nucleic acid amplification tests (NAATs) are the most sensitive and specific tests available for TV detection, but TV NAATs are rarely used in Brazil. The objectives of this study were to investigate the prevalence of TV infection and compare the performance of the US FDA-cleared APTIMA TV NAAT (Hologic, San Diego, USA) with wet mount microscopy, Gram stained microscopy and culture for diagnosis of TV infection in women in Pelotas, Brazil.

**Methods** From August 2015 to December 2016, 499 asymptomatic and symptomatic women attending the Gynaecology and Obstetrics Outpatient Clinic of the Maternal and Child Health Department at the School of Medicine, Federal University of Pelotas, Brazil were enrolled. Vaginal swabs were collected for examination with wet mount and Gram stained microscopy, culture, and Aptima TV assay. The Aptima TV assay was used as gold standard.

**Results** Participants' mean age was 37 years, the majority were white, had a steady sexual partner and low levels of education. The Aptima TV assay, culture, wet mount microscopy and Gram stained microscopy detected 4.2% (21/499), 2.4% (12/499), 1.2% (6/499), and 0% (0/499), respectively, of women as TV infected. The sensitivity and specificity of wet mount microscopy and culture were 28.57% and 100%, and 57.14% and 99.79%, respectively. The positive predictive value for wet mount microscopy was 100% and negative predictive value was 96.95% while for culture, these values were 92.30% and 98.14%, respectively.

**Conclusion** Trichomoniasis was prevalent (4.2%) in our population and the routine diagnostic test, wet mount microscopy, had very low (28.6%) sensitivity compared to the Aptima TV NAAT. Improved diagnostic tests and enhanced testing of also asymptomatic patients are crucial to mitigate the transmission of TV infection.

**LB1.62 DETECTION OF SUBCLINICAL KIDNEY DISEASE IN HIV PATIENTS RECEIVING COMBINED ANTIRETROVIRAL THERAPY THROUGH NOVEL BIOMARKERS**

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**Introduction** Kidney disease is a well-known and frequent complication of HIV infection. The aim of this study is to investigate novel biomarkers of kidney disease in HIV patients.

**Methods** This is a cross-sectional study with HIV patients recruited in public health centres in Fortaleza city, Brazil, between January 2016 and March 2017. Three groups of HIV patients were included: I) those who have never received combined antiretroviral therapy (cART), II) those receiving cART with tenofovir/lamivudine/efavirenz or III) zidovudine/lamivudine/efavirenz. A group of 13 healthy subjects were the control group. The novel biomarkers investigated were: urinary and serum neutrophil gelatinase-associated lipocalin (uNGAL), urinary monocyte chemoattractant protein-1 (MCP-1) and urinary kidney injury molecule-1 (KIM-1), and the results were compared with the traditional biomarkers microalbuminuria and creatinine. Glomerular filtration rate (GFR) was estimated based on CKD-EPI equation.

**Results** A total of 66 HIV patients were included, with mean age of 33 ± 8 years, and 77% were male. The majority of the patients (63%) had undetectable viral load. Serum creatinine and GFR were similar in all groups. No HIV patient had GFR < 60 mL/min and only two patients (3%) had microalbuminuria > 30 mg/g-Cr. KIM-1 levels in patients using Tenofovir were higher than control group (1.25 ± 0.6 vs 0.7 ± 0.2 ng/mg-Cr, p < 0.001). MCP-1 was significantly higher among HIV patients, and the highest values were found in those with no cART and high viral load. Urinary NGAL was

also higher among HIV patients, but it only presented a tendency to significance ( $p=0.07$ ). Regarding serum NGAL, no significant difference was observed between the groups ( $p=0.417$ ). There was significant association between urinary NGAL and microalbuminuria ( $r=0.378$ ,  $p=0.003$ ) and MCP-1 ( $r=0.476$ ,  $p<0.001$ ) in all HIV patients.

**Conclusion** HIV patients using cART presents subclinical kidney disease detected through novel biomarkers. KIM-1 may serve as early marker of tenofovir nephrotoxicity, and MCP-1 appears to be related with higher viral load.

### LB1.63 HIGH ACCEPTANCE OF CERVICAL SELF-COLLECTION FOR DETECTION OF HPV, HHV-2 AND HIV-1 IN WOMEN LIVING IN TAPAJÓS REGION, AMAZÔNIA, BRAZIL

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**Introduction** Cervical self-collection is a safe and efficient method for detecting sexually transmitted infections (STIs). The study aims to verify the acceptance of cervical self-collection and the prevalence of HPV, HHV-2 and HIV-1 infection in women living in the Tapajós region, Amazônia, Brazil.

**Methods** Cross-sectional study with women attending in Santarém-Pará. The collection was performed between August 2015 and January 2017. Participants collected cervical scrapings and peripheral blood. Those who accepted, also performed cervical self-collection. Detection of HPV DNA was performed by nested PCR with MY09/11 and GP5/6<sup>+</sup> primers and typing was done by sequencing. Detection of HHV-2 DNA was performed by real-time PCR with Taqman. Identification of anti-HIV-1/2 antibodies was made by Alere Determine Kit.

**Results** A total of 206 specimens were obtained from 112 women. The acceptance of cervical self-collection was 84% (94/112) and HPV DNA was identified in 39.4% (37/94) of the samples. While the prevalence of HPV infection in cervical scraping was 32.1% (36/112). All the women presented Papanicolaou negative for malignancy. The most prevalent types were HPV-16 and HPV-18. The overall prevalence of HHV-2 infection was 8.9%. The concordance rate in the molecular diagnosis between cervical scraping and cervical self-collection was 65% (26/40) for HPV and 50% (4/8) for HHV-2. No woman had HIV-1 reactive serology.

**Conclusion** A high prevalence of HPV infection was found in women without dysplastic lesion. Cervical self-collection had high acceptance, moderate concordance rate in the detection of HPV DNA compared to cervical scraping, and alone it was more efficient in the detection of HPV. This is the first study in women living in Tapajós region and the findings strongly suggest that cervical self-collection may be a useful tool for increasing access to diagnosis of STIs and screening for cervical cancer in women living in the Amazon.

### LB1.64 CD64-MEDIATED PHAGOCYTOSIS OF HUMAN SYPHILITIC SERUM OPSONIZED *TREPONEMA PALLIDUM* BY HUMAN MACROPHAGES REQUIRED IFN-GAMMA

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**Introduction** Syphilis is a multi-stage, sexually transmitted disease caused by the spirochete *Treponema pallidum* (*Tp*). Clinical manifestations result from the treponeme's ability to elicit a robust immune response while at the same time evading host defenses. Syphilitic lesions are comprised of a rich cellular infiltrate, which includes IFN-gamma (IFN $\gamma$ ) producing T cells, NK cells and activated macrophages. We previously, we demonstrated that human syphilitic serum (HSS) promotes efficient uptake of *Tp* by human monocytes and that opsonophagocytosis of *Tp* markedly enhances cytokine production. The purpose of this study is to establish a potential role for macrophages and opsonic Ab in clearance of *Tp* and generation of tissue-based inflammation during human syphilis.

**Methods** We used monocyte-derived macrophages to develop an *ex vivo* model for studying spirochete-macrophage interactions. We used macrophage-colony stimulating factor and IFN $\gamma$  for macrophage maturation and evaluated the immunophenotypic modulations by flow cytometry. We assessed *Tp* uptake, in the presence or absence of HSS by confocal microscopy. We also determined the cellular responses initiated by opsonophagocytosis of *Tp* using targeted transcriptional array analysis and cytokine bead array.

**Results** IFN $\gamma$  polarisation of macrophages led to an increase in Fc $\gamma$  receptors (Fc $\gamma$ R) expression, phagocytosis of HSS opsonized *Tp* and cytokine production. Blockade of CD64 significantly diminished spirochetal uptake and pro-inflammatory cytokine secretion by the macrophages.

**Conclusion** Our *ex vivo* studies provide a potential role for macrophages in clearance of *Tp* during human syphilis. These data are the first to demonstrate that CD64 in the primary FcR involved in opsonophagocytosis of *Tp* and IFN $\gamma$  plays a critical role in the macrophages responsiveness following uptake of the spirochete. Moreover, our study results also provide an *ex vivo* surrogate system for use in future syphilis vaccine studies.

### LB1.65 FREQUENCY OF BROADLY NEUTRALISING ANTIBODIES IN HIV-1 CHRONICALLY INFECTED INDIVIDUALS IN UGANDAN CLADES A & D

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**Introduction** The study was aimed at assessing frequencies of neutralising antibodies in individuals affected with the commonest HIV-1 clades A and D in Uganda.

**Methods** This was a cross-sectional study of 83 HIV-1 chronically infected Anti-Retroviral Therapy (ART) naïve adults who were enrolled from Medical Research Council (MRC) cohort and The AIDS Support Organisation (TASO) Clinic in Entebbe. Samples of Plasma were tested for the