Methods This study investigated CD4 T cell immune activation based on intracellular IFN-γ and Ki-67 expression, after ex-vivo cryptococcal antigen stimulation of whole blood samples taken from HIV-1 positive adult patients infected with or without cryptococcal meningitis, initiated on ART.

Results In the CM positive group at pre-ART visit; stimulation with C.neoformans crude cell wall (CW) induced a significant increase in CD4 IFN-γ production ($p < 0.05^{****}$), as compared to C.neoformans glucuronoxylomannan (GXM) polysaccharide antigen ($p < 0.05^{*}$), whilst C.neoformans mannoprotein (MP) stimulation failed to induce greater than baseline IFN-γ expression. The effector memory T cell subset was the major contributor to the IFN-γ elevation exhibited in CW stimulated samples. Interestingly, T cell responses to CW were found to be significantly higher in the CM positive group compared to the CM negative group ($p < 0.05^{*}$). Furthermore, stimulation with CW and GXM exhibited higher frequency of terminally differentiated effector memory T cells (TDEMS) compared to either negative control or MP stimulation.

Conclusion Immune activation of CD4 T cells can be achieved by C.neoformans CW rather than purified MP antigen, by inducing the effector memory subset to produce IFN-γ.

P5.075 BIOPLEX® 2200 HIV AG-AB: AN AUTOMATED SCREENING METHOD PROVIDING DISCREET DETECTION OF HIV-1 P24, HIV-1 ANTIBODY, AND HIV-2 ANTIBODY

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Background Develop an automated HIV assay with 4th generation sensitivity that can report antibody and antigen results individually, and distinguish HIV-1 from HIV-2 positives.

Methods The BioPlex 2200 HIV Ag-Ab assay uses multiplex flow immunoassay to detect HIV-1 p24 antigen, HIV-1 antibody (Groups M and O), and HIV-2 antibody in a single reaction vessel using a mixture of four populations of dyed microparticles. Each population is coated with a different HIV antigen or with p24 antibody. Results for each marker can be reported individually, and antibody-reactive specimens can be typed as HIV-1 or HIV-2. Specimens with similar levels of HIV-1 and HIV-2 antibody reactivity are reported as reactive but undifferentiated.

Results of in-house testing: To assess specificity, 5239 samples of unknown risk were tested resulting in specificity of 99.83%. To assess sensitivity, known positive specimens (209 HIV-1 Group M, 21 HIV-1 Group O, and 177 HIV-2) were tested and all were reactive. All HIV-1 samples (209 Group M and 21 Group O) were correctly identified as HIV-1, and 153 of 177 HIV-2 samples were correctly identified as HIV-2. Of 24 that were undifferentiated, 18 could not be typed by Orgenics Immunocomb®. Among 26 commercial seroconversion panels, BioPlex 2200 detected HIV-1 infection one donation sooner than Abbott Architect Combo HIV (4th generation) in three panels. In one panel, BioPlex 2200 missed one donation positive by Architect. Both tests gave equivalent results for 22 of the 26 panels.

Conclusion The BioPlex 2200 HIV Ag-Ab assay, which is currently in development, is highly sensitive and specific, and can also provide detailed screening results that will assist in identifying specimens from primary infection and HIV-2 positives and guide selection of of supplemental testing.

P5.076 DEEP MYCOSES IN PATIENTS INFECTED WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV) IN MONTEVIDEO, URUGUAY

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Background Deep fungal infections have been a major cause of morbidity and mortality in HIV-infected host, gaining importance due to their severity and poor prognosis. Because instituted antiretroviral therapy in patients infected with HIV in the last decade, it is expected that the profile of the deep mycoses in our country has changed, despite the increase in cases of HIV infection registered. The objective of this study was to report the frequency of deep mycosis in a population of HIV-positive patients in Montevideo, Uruguay.

Method The clinical fungal isolates obtained from biological samples, in HIV positive patients, processed in Section Mycology, Laboratory of Pathology University Hospital, between 2008 and 2012. The diagnosis of deep mycoses, was established by conventional mycological study (direct examination and culture). This was complemented by detection of antigen of Cryptococcus spp. in CSF samples, and direct immunofluorescence for Pneumocystis jirovecii in bronchoalveolar-lavage specimens.

Results Of 479 studies in HIV-positive patients, 248 were of cerebrospinal fluid, 83-bronchioloalveolar washes, 42 biopsies, 36 blood, 24 bone marrow, skin 20, and 26 belonged to other locations. 89 samples were found positive, of which 76 were from Cryptococcus spp.; 6 to Histoplasma capsulatum, Pneumocystis jirovecii 6 and 1 to Candida albicans isolated from the peritoneal fluid. Discussion: The frequency of deep mycoses was 18.6% of the samples studied. Cryptococcosis and meningo-encephalic presentation was the most frequent (75% of samples positive for Cryptococcus spp.), histoplasmosis, and pneumocystosis represented 7% each of the total positive samples. The deep mycoses remains so similiar to previous periods in our country, persisting as a real problem in this population. The distribution of etiologic agents remained significantly unchanged as Cryptococcus spp. main exponent, but still keeps a significant decrease in the frequency and Pneumocystis jirovecii, Histoplasma capsulatum, and the absence of cases of aspergillosis.

P5.077 NUCLEIC ACID AMPLIFICATION TEST (NAAT) DIAGNOSTICS COMBINED WITH DELAYED *NEISSERIA GONORRHOEAE* CULTIVATION OF NAAT POSITIVE SAMPLES USING THE ESWAB™ SYSTEM - THE SOLUTION FOR FUTURE GONOCOCCAL ANTIMICROBIAL SUSCEPTIBILITY SURVEILLANCE?

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Background Antimicrobial resistance (AMR) in *Neisseria gonorrhoeae* (Ng) is a major public health problem worldwide. Nucleic acid amplification tests (NAATs) have rapidly replaced cultivation for detection of Ng. We have evaluated the ESwab system for NAAT diagnostics combined with delayed Ng cultivation of NAAT positive samples for gonococcal AMR surveillance.

Methods Based on clinical indications, a urethral, cervical or anal swab was collected from patients with purulent discharge. Gold standard for diagnosis was the APTIMA Combo 2 assay (Gen-Probe). In another study, swabs from urine (UR) and urine sediment (US) were collected if Gram-negative diplococci were observed in direct smears. Flocked swabs were stored in ESwab Liquid Amies (Copan) at room temperature (RT) and 4°C and cultured after 1, 24 and 48 hours.