P162 UNSUPPRESSED VIRAL LOAD (VL) BY HIV EXPOSURE CATEGORY AMONG PEOPLE LIVING WITH HIV IN BRITISH COLUMBIA(BC), CANADA: 2005–2015

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Background We examined trends and determinants of unsuppressed VL among PLWH stratified on the basis of HIV exposure category over 10 years in BC, Canada.
Methods The analysis included all PLWH in BC from 04/2005 to 03/2016 identified in the provincial STOP-HIV database. This database includes: positive HIV test results, antiretroviral therapy (ART) dispensing information, laboratory data, physician billing data, hospital discharge abstracts and vital statistics linkages. For each year, individuals were classified as having an unsuppressed VL if they: 1) were newly diagnosed; 2) had any VL $\geq$200 copies/mL measure; or 3) did not have a VL measured. We examined factors associated with unsuppressed VL using generalized estimating equations to build a multivariable logistic regression model.
Results Among 9778 PLWH in BC during the study period, 80.7% were male and the median age at diagnosis was 37 years. Among those with HIV exposure information, 49.0% were men who have sex with men(MSM), 33.6% were people who use injection drugs(PWID), 16.0% had only heterosexual exposures and 1.4% had other exposures. 16.4% had missing exposure information. The proportion of those with unsuppressed VL decreased from 66.5% in 2005 to 24.5% in 2015 ($p<0.001$, test of trend). Among MSM, unsuppressed VL declined from 60.0% to 19.8%; among PWID from 75.6% to 33.3% and among heterosexuals from 62.0% to 24.5%. In the multivariate model, PWID (aOR=1.72; 95% CI 1.58–1.88) and heterosexuals (aOR=1.20; 95% CI 1.10–1.32) had increased odds of unsuppressed VL, compared to MSM. Age, sex, year ART initiation, ethnicity, health authority residence and hepatitis C antibody status were also associated with unsuppressed VL ($p<0.01$ for all).
Conclusion Across BC, the proportion of PLWH with unsuppressed VL fell markedly between 2005 - 2015 from 66% to 25%. However, PWID and those with heterosexual exposures require additional supports to maximize the benefits of ART.
Disclosure No significant relationships.

P163 HIV CARE AND TREATMENT SERVICES FOR FEMALE SEX WORKERS: UTILISATION OF AND SATISFACTION WITH THE SERVICES IN KAMPALA, UGANDA

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Background We estimated the prevalence and factors associated with utilisation of HIV services among FSW in Kampala, Uganda.
Methods Between October 2017 to January 2018, we conducted a cross sectional study among FSW aged 18+ years at a research clinic. The women were enrolled through their routine three monthly visits. At each visit, women received a comprehensive HIV prevention, care and treatment package, peer-led -health education sessions, psycho-social support, sexually transmitted infections (STIs) screening and treatment, general health care and reproductive health services. We defined utilisation as clinic attendance for services by FSW at least once within the last six months. Data on socio-demographic characteristics, clinic attendance, HIV sero-status, sexual behaviour, illicit drug and alcohol use were collected. We used log binomial model to identify factors associated with utilisation of clinic services.
Results Eight hundred and seventy four women were included in the analysis, mean age was 32 years (SD= 6.98). The overall prevalence of utilisation of clinic services was 708/874(81%) and 662/874(76%) reported satisfaction with the clinic services. Forty percent reported poor accessibility to the clinic, and of these 222/324 (69%) reported high transport-costs challenges. All women (100%) knew their HIV status, of these 463(53%) were HIV positive, of whom 455/463(98%) were receiving ART. Seventy six percent had been treated for STIs in the last three months, and 454 (52%) reported partner violence. In the adjusted analysis, utilization of clinic services was more likely among HIV positive women (aRR=1.19; 95%CI: 1.11–1.28) and those who had been treated for STIs in the last three months (aRR= 1.32; 95%CI: 1.18–1.48).
Conclusion Prevalence for utilisation of clinic services was relatively high. Those who utilised the clinic were more likely to be HIV positive women and those treated for STIs. However, interventions targeting FSW to improve utilisation of HIV care services should be considered.
Disclosure No significant relationships.

P166 DETERMINANTS OF VIRAL NON-SUPPRESSION AMONG CHILDREN IN A HIV PROGRAM IN KENYA: A CROSS-SECTIONAL STUDY

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Background Kenya has an estimated 86,300 children living with HIV (CLHIV) on antiretroviral therapy (ART) of whom a third are not virally suppressed. Looking at predictors of viral non-suppression guides the program in designing intervention strategies to abate inauspicious treatment outcomes.
Methods This was a cross-sectional study that used de-identified electronic medical records of the Christian Health Association of Kenya HIV/AIDS project database. We included all CLHIV aged 9 years and below who were active in care as of 30thSeptember 2018 and had been on ART for at least 6 months with a recent viral load result. We defined non-suppression as a result of $\geq$1000 copies/mm^3 which was our

outcome of interest. Predictor variables studied were age, sex, duration prior to ART initiation and duration on ART, ART regimen, orphan status, baseline WHO staging and adherence. Bivariate analysis and multivariate logistic regression were used to establish determinants of non-suppression.

Results We included 1,066 CLHIV of whom 51.3% were female, median age was 7.5 years (IQR 5.7– 9) and a quarter were orphans. Median duration on ART was 51 months (IQR 31–79), 20.4% were on second line ART regimen with an overall viral suppression rate of 88%. Children who had been on ART for a longer duration (>5 years) were more likely to be suppressed [aOR=0.38, (95% (CI)=0.17–0.86), p=0.02]. A protease inhibitor containing regimen was associated with non-suppression on bivariate analysis [OR=2.43, (95% CI = 1.04–5.65), p=0.039] however this was not significant in multivariate analysis. Non-adherence to ART increased five-folds the odds of non-suppression [aOR=5.47, (95% CI = 1.12–26.69), p=0.035] whereas those who were orphans were more likely to be suppressed [aOR=0.56, (95% CI = 0.37–0.86), p=0.007].

Conclusion CLHIV within our study population had sub-optimal viral suppression. Innovative strategies to address adherence remains crucial in addressing non-suppression.

Disclosure No significant relationships.

P167 PCR DETECTION OF HIV PROVIRAL DNA IN BRAIN TISSUES FROM DEAD HIV/AIDS IN ZAMBIA

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Background The prevalence of HIV-associated neurocognitive disorders (HAND) was highly prevalent In Zambia. But very little is known about the effect of ART on HIV subtype C associated neurological disease.

Methods Brain and lymphnotes tissues: from autopsies of dead HIV+/AIDS patients, provided by local hospitals. First, frozen tissue blocks were cracked, DNA was extracted. Then, Env V2-V5 region of HIV proviral DNA was amplified by PCR with clade C specific primers. 2.0 μg of template DNA was employed with Fast Start HF and platinum pfx DNA. Finally, phylogenetic trees were drawn.

Results Out of 12 HIV/AIDS cases detected, 6 cases were found to be HIV DNA positive for at least 1 positive in total 7 different brain tissues (FL,PL,TL,OL,H,C,BG), and their lymphnote samples were also HIV positive the same time. So HIV infection rate of brain was 50%. For the 2 ART non-treated cases, 85.7% (12/14) of the samples of different tissue was HIV positive, while it was 17.6% (6/34) in 7 ART treated cases. All DNA sequences were blasted as HIV subtype C, and clustered with subtype C reference strains.

Conclusion In this study, the HIV infection rate in all brain tissue samples in untreated cases (87.5%) was much less than that in treated cases(17.6%), It suggested that ART may help control the spread of HIV infection in brain tissues.

Disclosure No significant relationships.

P168 MULTIDRUG RESISTANT TUBERCULOSIS IN TB/HIV CO-INFECTED PATIENTS IN RIVERS STATE, NIGERIA

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Background Tuberculosis poses a serious health problem worldwide with a high mortality rate, especially in immunocompromised individuals. The emergence of drug-resistant forms of tuberculosis further burdened with high prevalence of HIV threatens to make this important human disease difficult to manage. Nigeria is currently listed among the 30 high burden countries for TB, TB/HIV and DR-TB. This study was carried out to determine Mycobacterium tuberculosis resistance pattern to first-line anti-TB drugs (rifampicin and isoniazid) in TB patients who were HIV seropositive in Rivers State.

Methods Two hundred and sixty HIV sero-positive patients ≥ 18 years old were recruited from three health care facilities in Rivers State. The subjects were separated into two groups consisting of 130 TB/HIV co-infected patients on anti-tuberculosis treatment and 130 HIV seropositive patients, suspected of having tuberculosis and yet to commence anti TB treatment. Sputum samples were processed by line probe assay (MTBDRplus by HAIN Lifescience). Analysis were carried out with the SPSS v20 software.

Results Of the 260 recruited HIV seropositive subjects, 159 were positive for TB: 127 from the treatment exposed group and 32 from the treatment naïve group. Among all the TB/HIV co-infected subjects, MDR-TB was detected in 10.1% (16/159) of the study subjects. Among the treatment experienced group, MDR-TB was detected in 11.0% (14/127), INH-monoresistance in 15.7% (20/127) and RIF-monoresistance in 11.8% (15/127) while 6.3% (2/32) of treatment naïve subjects had MDR-TB, 12.5% (4/32) had INH-monoresistant TB and 6.3% (2/32) had RIF-monoresistant TB.

Conclusion Primary MDR-TB was prevalent in Rivers State (6.3%). This implies a high level of ongoing transmission of MDR-TB in TB/HIV co-infected individuals within the community. The DOTS program needs to be strengthened to capture TB/HIV co-infected individuals early enough to manage them promptly.

Disclosure No significant relationships.

P169 ASSOCIATION BETWEEN CXCR4 AND TRAIL PATHWAY EXPRESSION IN CD4 T LYMPHOCYTES FROM HIV+ ART-NAÏVE PATIENTS

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Background HIV infection is characterized by immune cells depletion, apoptosis is one of the main mechanisms described. It has been reported that, the union of HIV to coreceptor CXCR4 can induce Fas independent apoptosis on T cells. In a few *in vitro* studies it has been proved that stimulation of