Reviews in Antiviral Therapy & INFECTIOUS DISEASES
1 2013
JOURNAL OF ABSTRACTS AND CONFERENCE REPORTS FROM INTERNATIONAL WORKSHOPS ON INFECTIOUS DISEASES & ANTIVIRAL THERAPY

Abstract Book

3rd International Workshop on HIV & Women

from Adolescence through Menopause

14 - 15 January 2013, Toronto, Canada

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Abstracts

Oral Presentations

Abstract: O_01

Prevention of HIV transmission specific to women and girls

Anti-inflammatory treatments can protect female genital tract mucosal epithelial barrier from disruption by HIV

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Background: Pro-inflammatory environment in the female genital tract is known to enhance HIV replication. Our previous studies have shown that direct interactions between HIV-1 and genital epithelial cells (GECs), the first cells that come in contact with HIV during heterosexual transmission lead to induction of inflammatory factors including TNF-alpha from epithelial cells. These inflammatory responses lead to impairment of the mucosal barrier and microbial translocation. Furthermore, inflammatory responses of GECs can also drive HIV-1 LTR in infected T cells. We designed studies to determine if treatment with IL-22, a known epithelial reparative cytokine or curcumin (diferuloylmethane), a well-known natural wide-spectrum anti-inflammatory agent could block induction of inflammatory responses in the GECs and therefore protect the mucosal barrier and block HIV-1 replication.

Methods: Primary GECs were isolated from human upper genital tract tissues and grown to confluent monolayers prior to pre-treatment with IL-22 (10ng/ml) or curcumin (5uM) for 1 hour followed by exposure to HIV-1 (R5 strain ADA, MOI of 1). Transepithelial electrical resistance (TER) was measured as an indicator of barrier function. Tight junction proteins were examined in epithelial monolyers by confocal microscopy and quantitated by Western blotting. Epithelial cytokine induction was examined by Luminex multi-cytokine bead assay. The ability of epithelial inflammatory responses to drive HIV-1 replication was measured by a proxy assay that examined HIV-LTR activity in a transfected T cell line, 1G5.

Results: GEC monolayers were protected from HIV-mediated barrier disruption following pre-treatment with IL-22, applied apically or basolaterally. TER measurements of epithelial monolayers pre-treated with recombinant IL-22 prior to HIV-1 exposure showed that IL-22 completely prevented HIV-1-mediated barrier impairment. This was confirmed by immunofluorescent staining where IL-22 epithelial monolayers exhibited completely intact tight junction staining while HIV-treatment disrupted tight junction protein localization. To begin to dissect the mechanism of protection exerted by IL-22, we examined the production of pro-inflammatory cytokine production by epithelial cells in response to HIV exposure, the key mechanism involved in barrier disruption. IL-22 treatment completely suppressed TNF-alpha production by epithelial cells indicating that protection is likely mediated by direct or indirect blocking of TNF-a pathway by IL-22. Immunoblotting experiments indicated that IL-22 treatment also seemed to upregulate tight junction proteins, Claudin1 and Claudin 2 but not Claudin-4 or occludin. Similar to IL-22, curcumin completely protected epithelial barriers against effect of HIV. GEC monolayers treated with curcumin did not show any decrease in TER and no disruption in tight junctions, indicating that barrier functions were protected by curcumin treatment. Furthermore, treatment of GECs with IL-22 or curcumin completely blocked HIV-LTR induction by GEC supernatants.

Conclusions: These studies show that treatment with factors such as IL-22, that strengthen the epithelial barrier, and curcumin, that blocks inflammatory responses can lead to protection of the genital tract mucosal barrier from HIV. This approach could form the basis of a novel prophylaxis strategy against HIV-1 infection.

No conflict of interest

Abstract: O_02

Transmission and progression in HIV infected women, role of contraception

Female sex hormones and hormonal contraceptives affect entry, but not replication, of HIV-1 in primary genital epithelial cells.

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Background: Although women constitute more than half of the estimated 34 million people living with HIV/AIDS worldwide, little is known about the early events of HIV-1 infection in the female genital tract (FGT), the mucosal surface responsible for transmission of 40% of all new HIV infections worldwide. The FGT is lined by genital epithelial cells (GECs) which are the first cells to encounter HIV-1 during heterosexual transmission. While recent epidemiological and non-human primate studies suggest that endogenous or exogenous female sex hormones may regulate susceptibility to HIV infection, it is unknown as to whether these factors regulate GEC susceptibility and permissivity to HIV-1.

Materials & Methods: Primary GECs were isolated from human upper genital tract tissues and monolayers were grown in the presence or absence of physiological concentrations of estrogen (E2), progesterone (P4) or medroxyprogesterone acetate (MPA) - the progesterone-like hormone in the contraceptive formulation Depo-Provera used by more than 100 million women worldwide - prior to apical exposure to HIV-ADA (macrophage-tropic) or HIV-IIIB (T-cell-tropic) strains of HIV-1. Entry and viral shedding were evaluated by measuring viral p24 antigen within infected GECs and cell-culture supernatants, respectively, by ELISA. The role of endocytosis and non-canonical receptors in GEC HIV-1 entry were evaluated by pre-treating cells with chemical inhibitors of these pathways/molecules prior to HIV-1 exposure. Viral replication was assessed by measuring HIV reverse transcription, viral integration and RNA splicing using standardized real time RT-PCR assay at various time-points post-HIV exposure.

Results: At 24 hours post-exposure, cell-associated HIV p24 antigen level was significantly increased within GECs grown in the presence of MPA. Pre-treatment of GEC cultures with *Heparinase III* or endocytosis inhibitor Dynasore significantly decreased cell-associated p24 levels indicating that cell surface heparan sulphate plays an important role in HIV entry into the endosomal pathways inside GECs. HIV p24 levels were also increased in the basolateral supernatants of infected GECs grown in the presence of MPA or P4. Despite detection of p24 antigen and unspliced HIV RNA within virally exposed GECs, no early or late reverse transcription products, integrated HIV DNA or spliced HIV RNA was measured at 24 or 48 hours post-infection, regardless of the viral strain used or the hormone conditioning of the cells.

Conclusions: These results suggest that female sex hormones regulate HIV entry into, and transcytosis across, primary GECs via non-canonical pathways. Despite entry into the genital epithelium, HIV-1 undergoes a non-productive infection with the block in replication taking place prior to reverse transcription. Increased entry and transcytosis under the influence of hormones may result in increased infection, depending on the availability of target cells in the FGT. Ongoing studies are investigating the significance of MPA-enhanced HIV entry and transcytosis in the absence of productive infection.

No conflict of interest

Abstract: O_03

ARV therapy for women -- efficacy, toxicity, pharmacokinetics

Nevirapine-containing ART does not reduce combined oral contraceptive effectiveness: results from South Africa and Uganda

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Background: Effective contraception is an essential component of family planning and prevention of mother-to-child HIV transmission. An increasing number of HIV-positive women receive ART, yet desire effective contraception, raising the potential for drug interactions and reduced contraceptive efficacy. No adequately powered studies have assessed clinical outcomes such as ovulation in these women. This study measured the impact of nevirapine-containing ART on COC effectiveness.

Methods: We conducted a non-randomized clinical trial among HIV-positive women aged 18 – 35 years who had regular menses, were sexually active, and had no medical contraindications to COC use in South Africa and Uganda. We enrolled 196 women taking nevirapine-containing ART and 207 women currently ineligible for ART as a COC-only control group. We treated all women with COCs containing 30 mg of ethinyl estradiol and 300 mg of norgestrel. We estimated ovulation in the first two treatment cycles using weekly serum progesterone and tested for pregnancy monthly for 24 weeks.

Results: In the ART group, 43/168 (25.6%) ovulated in cycle one, 30/163 (18.4%) in cycle two, and 18/163 (11.0%) in both cycles. In the COC-only group, 26/168 (15.5%) ovulated in cycle one, 31/165 (18.8%) in cycle two, and 20/165 (12.1%) in both cycles. We found no statistically significant difference in ovulation rates between groups: unadjusted odds ratio = 1.4 (95% CI: 0.9 – 2.2, p = 0.21). Pregnancy rates also did not differ significantly between groups: 10.0 per 100 WY in the ART group (95% CI: 4.6 – 19.1) and 10.1 per 100 WY in the COC-only group (95% CI: 4.6 – 12.1). Self-reported pill adherence, condom use and vaginal bleeding patterns did not differ between groups. The most common adverse events reported (most unrelated to COC use) were respiratory tract infections, infections (such as malaria) and gastrointestinal disorders, with no notable differences between groups. Three unrelated serious adverse events were reported in COC-only group (malaria, cellulitis and fracture) and none in the ART group.

Conclusions: Rates of ovulation and pregnancy were similar in HIV-infected women, regardless of ART use, suggesting that nevirapine-containing ART does not interfere with the contraceptive effectiveness of COCs.

No conflict of interest

Abstract: O_04

Transmission and progression in HIV infected women, role of contraception

Systematic review of HIV transmission between heterosexual serodiscordant couples where the HIV-positive partner is fully suppressed on ART

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Introduction: Combination antiretroviral therapy (cART) can markedly reduce sexual HIV transmission in heterosexual serodiscordant couples, but the risk is still undefined when the HIV-positive partner has fully suppressed virus. Our objective was to systematically review publications reporting on rates of sexual HIV-1 transmission between serodiscordant couples where the HIV-positive partner has an undetectable plasma viral load on cART.

Materials & Methods: In consultation with a librarian, we searched electronic databases for all relevant observational studies and randomized controlled trials (RCTs) from 1950 to January 2012 without regard to language of publication or country. To heighten sensitivity, we reviewed the reference lists of identified studies and review articles, and conducted a hand search of selected journals to identify recently published articles that may have been missed by the literature search., Studies included in the analysis reported HIV transmission rates, cART history and viral load of the HIV-positive partner. Two reviewers extracted methodological characteristics and outcomes. Meta-analytic techniques measured heterogeneity and combined rates of transmission per 100-person years and risk ratios across publications. Methodologic quality was reasonable.

Results: Of 17,408 citations, 3 studies met all eligibility criteria with confirmed full virologic suppression in the HIV-positive partner; an additional 3 (2 cohort studies, 1 RCT) had cART and viral load data but unconfirmed viral suppression and were included in a secondary analysis. The 3 studies with confirmed undetectable virus reported on 991 heterosexual couples with 2,064 person-years of follow up available. The additional 3 with unconfirmed virus offered 8,170 person years of follow-up based on 2 observational studies reporting on 3,470 couples and the RCT (HPTN 052) reporting on 1,763 couples. The cART-treated patients with confirmed viral suppression yielded 0.1 HIV transmissions per 100-person years (95% CI=0-0.5), with low heterogeneity (I^2=0%). When we included the 3 studies that did not confirm virologic suppression, the rate of transmission of all 6 studies was 0.2 per 100 person-years (95%CI=0-0.4) (I^2=0%). Limitations included lack of data on same-sex couples, type of sexual intercourse (vaginal vs. anal), direction of HIV transmission, exact viral load at the time of transmission, sexually transmitted infections, and extent of condom use.

Conclusions: Based on a transmission rate of 0.1 per 100-person years (95% CI=0-0.5), our findings suggest that there is a minimal risk of sexual HIV transmission for heterosexual serodiscordant couples when the HIV-positive partner has an undetectable viral load on cART. These data facilitate fertility counseling as well as inform women's sexual health on the risk of contracting HIV during unprotected intercourse.

No conflict of interest

Abstract: O_05

HCV coinfection in Women

Poorer cognitive performance in HIV+ women coinfected with Hepatitis C (HCV) relative to control (uninfected) and monoinfected (HIV+) women

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Introduction: Cognitive functioning in HIV-positive (HIV+) women has not been comprehensively evaluated relative to studies conducted in HIV+ men. Even fewer studies have examined the additional effect of Hepatitis C (HCV) infection, despite the high prevalence of coinfection and evidence suggesting an adverse impact of HCV on brain and neurocognitive functioning. The aim of this study was to examine the effect of HIV/HCV coinfection on neurocognitive abilities. It was hypothesized that coinfected women would display the poorest cognitive performance relative to an uninfected control group and a HIV+ only group.

Materials & Methods: A total of 126 women were recruited from the Oak Tree Clinic in Vancouver, BC, with 64.3% being HIV+ and 21.4% having detectable HCV (PCR+). At the time of the assessment the average CD4 cell count in the HIV+ women was 516.17 cells/µl (SD = 242.99) and 76% had an undetectable viral load. A comprehensive neuropsychology battery was administered that included traditional paper and pencil tests, and subtests from a computerized battery (CANTAB). Several cognitive domains were assessed, including fine motor speed and dexterity, learning and memory, processing speed, and executive functions. To control for the effects of age and education on the cognitive scores separate regression analyses were run and standardized residuals (z-scores) were generated. A cognitive composite index (CCI) was computed by averaging the z-scores across cognitive domains. An analysis of covariance (ANCOVA) was employed to compare data between 3 groups: control (HIV-/HCV-; n = 37), monoinfected (HIV+/HCV-; n = 61), and coinfected (HIV+/HCV+; n = 20). The dependent variable was CCI, and depression self-ratings (CES-D) and substance use history were included as covariates.

Results: The groups were well-matched on age and education. The ANCOVA revealed a significant group difference on cognitive performance ($F_{(2, 117)} = 4.08$, $p = .02$). Post hoc comparisons using the LSD test indicated that the HIV+/HCV+ group (M = -0.51, SD = 1.17) displayed a significantly lower CCI than the HIV+/HCV- (M = 0.08, SD = 0.97) and HIV-/HCV- (M = 0.14, SD = 0.89) groups. The HIV+/HCV- and HIV-/HCV- groups did not significantly differ from each other.

Conclusions: The results indicate greater cognitive impairment (as summarized with the CCI) in HIV+ women with HCV coinfection, relative to HIV+/HCV- women and an uninfected control group. Interestingly, the HIV+/HCV- group did not significantly differ from the uninfected women on the CCI. These results highlight the importance of assessing for other viral infections in HIV+ women and confirm existent literature suggesting the additional, detrimental impact HCV may have on neurocognitive performance. Indeed, future research should examine whether additional viral infections are associated with greater cognitive impairment in HIV+ women.

No conflict of interest

Abstract: O_06

Social Aspects --- Mental Health

Prevalence and persistence of psychiatric and substance abusedisorders among mothers living with HIV

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Introduction: Mothers living with HIV (HIV+) face biological and psychosocial vulnerabilities that affect risk for psychiatric and substance abuse disorders. We compared the prevalence and types of these disorders in HIV+ and HIV-uninfected (HIV-) mothers. Among HIV+ mothers, we examined patterns of change in psychiatric and substance abuse disorders and biopsychosocial risk factors associated with their prevalence and persistence.

Materials and Methods: Participants included 1223 HIV+ mothers of HIV-exposed uninfected children who were enrolled in a prospective cohort study, Surveillance Monitoring for ART Toxicities (SMARTT), at 22 US sites; 128 HIV-mothers from nine sites were included as a comparison group. Mothers provided socio-demographic and health information and completed the Client Diagnostic Questionnaire (CDQ), a validated psychiatric screening interview. Fisher's exact tests were conducted to compare the prevalence of any and each disorder between HIV+ and HIV- mothers at initial evaluation. New, remitting and persisting disorders were identified for 689 HIV+ mothers who completed initial and follow-up CDQs 1-3 years later. We evaluated unadjusted associations of biopsychosocial factors with presence and persistence of disorders among HIV+ mothers; covariates with p-value <0.10 were retained in final adjusted models.

Results: Among mothers enrolled as of January 2012, 35% screened positive for any psychiatric or substance abuse disorder at initial evaluation, with no difference by maternal HIV status (p=1.00). Prevalence of any disorder was higher than national 12-month prevalence estimates of DSM-IV disorders (26%) but lower than rates observed earlier in the epidemic. Post-traumatic stress disorder was most prevalent (HIV+=23%; HIV-=21%; p=0.66). Anxiety disorders (HIV+=12%; HIV-=13%; p=0.77), depressive disorders (HIV+=12%; HIV-=8%; p=0.19), substance abuse disorders (HIV+=9%; HIV-=9%; p=1.00), and psychosis (HIV+= 4%; HIV-=2%; p=0.48) were less prevalent. Few mothers (HIV+=11%; HIV-=7%; p=0.16) received mental health treatment within six months of evaluation. Among HIV+ mothers, presence of any psychiatric or substance abuse disorder was associated with younger age (adjusted odds ratio [aOR],1.39; 95% CI,1.09-1.75), single parenthood (aOR,1.35; 95% CI,1.08-1.68), functional limitations (aOR,3.57; 95% CI, 2.49-5.14), and alcohol (aOR,1.61; 95% CI,1.11-2.34) or illicit substance use (aOR,1.91, 95% CI,1.27-2.88) during pregnancy. Among 689 HIV+ mothers with initial and subsequent evaluations, 93 (14%) screened positive for new disorders, 93 (14%) for remitting disorders, and 145 (21%) for persisting disorders. Presence of persistent disorder (vs. no disorder) was associated with lower income (aOR, 2.44; 95% CI,1.33-4.76), functional limitations (aOR,9.14; 95% CI,3.97-22.03), and alcohol (aOR,4.01; 95% CI,1.85-8.83) or illicit substance use (aOR,2.46; 95% CI,1.12-5.46) during pregnancy. Traumatic histories were common regardless of HIV status; however, childhood physical abuse (p=0.02) and

sexual abuse during adulthood (p=0.02) were more likely among HIV+ mothers.

Conclusions: Psychiatric and substance abuse disorders among HIV+ women remain significant comorbid diagnoses, despite recognition of sociodemographic and health factors associated with their presence and persistence. Early identification of disorders and access to culturally sensitive, evidence-based treatments are essential to the well-being of these mothers and families yet rates of mental health treatment are low. Future efforts must be directed towards reducing psychological, societal, and institutional barriers to mental health care for women living with HIV.

No conflict of interest

Abstract: O_07

Social Aspects --- Mental Health

Differences in severity and correlates of depression between men and women living with HIV in Ontario, Canada

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Background: Prior investigations have not adequately addressed gender differences in severity or correlates of depressive symptoms between men and women with HIV. Our study seeks to address this gap in the literature.

Methods: Using data collected from the Ontario HIV Treatment Network (OHTN) Cohort Study (OCS), differences in severity and correlates of depression amongst 1069 men and 267 women living with HIV in Ontario, Canada were assessed. Our study was a cross-sectional analysis using the 20-item Center for Epidemiologic Studies Depression Scale (CES-D): Scores over 15 were categorized as mild depressive symptoms, while scores over 21 were categorized as severe depressive symptoms. Univariate and multivariable quantile regression models were used to estimate the

association between total CES-D depression scores and gender, after adjusting for other covariates. The use of a quantile regression model allowed for a comparison of gender differences on the distribution of depression scores across varying quantiles (10^{th}, 25^{th}, 50^{th}, 75^{th}, and 90^{th}). Covariates that previous research has found to be associated with depression were used in the multivariable regression models including age, duration of HIV infection, HIV risk factors, HIV-related stigma, and education. Multivariable models were constructed for women and men separately, and women and men together. Piecewise linear terms were used to model the effects of age and stigma scores on depression.

Results: Women had higher CES-D scores than men (median, interquartile [IQR]): 13[5-26] vs. 9[3-20], p=0.0004). Women were significantly more likely to have total CES-D scores over 15 (44% vs. 33%, p = 0.002) and over 21 (31% vs. 23%, p = 0.003). As well, at 40 years of age, women's CES-D scores increased yearly (0.4 per increased year, p = 0.005) while in men, CES-D scores remained unchanged. Overall, stigma scores over 50 were associated with higher CES-D scores in both men and women in our study (p=0.005). The impact of gender on depression varied across the distribution of total CES-D scores. While there was no difference in the 10^{th} percentile of depression scores between men and women after adjusting for other factors (0 [95% CL -1.0 – 1.0]), the 75^{th} percentile of depression scores for women was 6 (95% CL 2.0 – 10.0) points higher than that of men.

Conclusions: Gender differences exist in the severity and correlates of depression in people with HIV. Mental health programs for people with HIV need to consider active screening for depression in women, particularly women with HIV over the age of 40. In doing so, high-risk individuals may appropriately be screened in the clinical setting.

No conflict of interest

Abstract: O_08

Social Aspects --- Mental Health

Correlates of psychological distress in women living with HIV participating in the OHTN cohort study in Ontario, Canada

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Introduction: In Canada, the proportion of women testing HIV positive increased from 11.7% in 1999 to 26.2% of positive HIV tests reported in 2008. A significant number of these women experience gender-based violence, poverty, and housing instability for example which in addition to HIV impacts on their levels of psychological distress. Further adding to the levels of psychological distress are the systemic inequalities experienced by women living with HIV. Our objective was to explore the levels of psychological distress experienced by women living with HIV in Ontario, Canada.

Materials & Methods: The OHTN Cohort Study is an observational, open dynamic cohort of people living with HIV. Collected data include chart extractions, linkages with databases at the Ontario Public Health Laboratories, and structured interviews. Eligible participants included in the analysis self-identified as a woman and completed the Kessler Psychological Distress Scale (K10) between 2009 and 2011 (n=337). The K10 is designed to quantify the frequency and severity of symptoms of psychological distress including both anxiety

and depression. The K10 consist of 10 questions with a 5 point Likert-scale with scores ranging between 10 and 50 and increasing values signifying increased psychological distress. Previous studies have shown that a score > 19 is associated with a medical diagnosis of depression or anxiety. We carried out univariate and multivariable logistic regression analyses with a K10 score > 19 as the outcome and age and ethnicity were a priori exposures of interest.

Results: Women had a median age of 43 (IQR=35-50) and 46.3% were White, 28.8% Black/African, 16.9% Aboriginal, and 8.0% of multiple race. Overall, the median K10 score was 18 (IQR=13-25), with 42.4% reporting a moderate to very high level of psychological distress; and 57.6% reporting no significant levels of distress. In multivariable logistic regression, women at higher risk of psychological distress were those on disability (versus employed, student, retired, unemployed) (OR=2.7; 95%CI: 1.6-4.5), living in a household without their children (versus with children) (OR=2.0; 95% CI: 1.2-3.3), and who had an education level of some college or less (versus completed college or more) (OR=1.9; 95% CI: 1.1-3.3). A tendency towards a higher risk of psychological distress was observed in women whose CD4 count were less than 200 cells/mm^3 (versus greater than or equal to 200 cells/mm^3) (OR=2.3; 95% CI: 1.0-5.4). Age and ethnicity were not associated with psychological distress.

Conclusions: Our epidemiological findings suggest that societal, economical, and structural factors which shape the demography of women living in HIV in Ontario have a significant impact on psychological distress levels. Approaches to manage psychological distress must address and make considerations for the lived experiences of women which may act as barriers to improving psychological health. The K10 can be used as an outcome measure for anxiety and depression and inform treatment planning and monitoring of symptoms of distress within a community.

No conflict of interest

Abstract: O_09

HCV coinfection in Women

Female gender is associated with liver fibrosis progression in antiretroviral treated HIV-HCV co-infected patients.

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Introduction: In HCV mono-infection, male gender has been associated with faster progression of liver fibrosis. We examined the influence of gender on progression of liver fibrosis in HIV-HCV co-infected patients receiving antiretroviral therapy (ART).

Material & Methods: A Canadian prospective, multicentre cohort followed 1119 HIV/HCV co-infected persons every 6 months between 2003-2012. An APRI (AST-to-platelet ratio index) score ≥1.5 was considered to represent significant fibrosis (corresponds to a biopsy score ≥2). Data were analyzed from 308 HCV PCR+ antiretroviral treated participants with at least two visits and without liver fibrosis (APRI< 1.5) or history of end-stage liver disease at baseline. Incidence rates of progression to significant fibrosis were determined according to gender. Multivariate discrete-time proportional hazards models, using robust standard errors to allow for repeated measures within individuals, were used to assess the effect of gender on the risk of developing an APRI score ≥1.5. Models were adjusted for baseline age, alcohol use, cigarette smoking, HCV duration, CD4 count, lnAPRI and time-updated HIV viral load.

Results: Mean age was 44 years, 28% were female, 16% aboriginal, 83% reported a history of injection drug use and 47% currently used alcohol. Median baseline CD4 was 373 cells/µL; 73% had an undetectable viral load. Median time since ART initiation was 5.7 years; ART regimens were similar with 64% of women and 67% of men receiving protease inhibitor based therapy. Total follow-up time at-risk was 544 person-years (129 person-years in female and 415 person-years in male). Women were: younger (42 vs. 45 years, p=0.003), more likely to be aboriginal (25 vs. 12%, p=0.005), but were less likely to abuse alcohol (14 vs. 37%, p=0.023). Overall, 55 (18%) developed an APRI score ≥ 1.5 (10.1/100 person-years; 95% CI, 7.4-12.8); 18 (21%) women (14.0/100 person-years; 95% CI, 7.5-20.4) and 37 (17%) men (8.9/100 person-years; 95% CI, 6.0-11.8). Female gender (adjusted hazard ratio [aHR] 2.26; 95% CI, 1.24-4.11), baseline CD4 count per 100 cells (aHR 1.12; 95% CI, 1.00-1.24), time-updated $\log_{10}$ HIV RNA (aHR 1.35; 95% CI, 1.00-1.83), baseline lnAPRI (aHR 5.49; 95% CI, 2.75-10.97), and to a lesser extent, alcohol use (aHR 1.50; 95% CI, 0.83-2.71) and cigarette smoking (aHR 1.73; 95% CI, 0.78-3.81) were associated with progression to hepatic fibrosis. In other models aboriginal ethnicity, IDU and time-updated CD4 counts were examined and none was found to be associated with fibrosis progression nor did their inclusion in the models alter the main results.

Conclusions: Among HIV-HCV co-infected patients receiving ART, women were at significantly greater risk of progressing to liver fibrosis as measured by APRI compared with men. Excess risk was not explained by obvious differences between men and women in sociodemographics, duration of HCV infection, alcohol exposure or virologic and immunologic responses to ART as the rates of liver fibrosis remained elevated after adjusting for these factors. Our findings raise the possibility that metabolic factors or ART induced liver toxicity may differ between men and women and play roles in accelerating liver fibrosis in women.

No conflict of interest

Abstract: O_10A

Aging and co-morbidity of the HIV infected women

Sociodemographic-clinical characteristics, quality-of-life, sexual-sphere, mood-stage and neurocognitive-function in HIV+ mature women in Spain. EVhA3

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Background. The interest to study the women field in the HIV infection (HIV+) is constantly increasing. Nevertheless, there are still few specific studies analysing different age periods and comparing with HIV- women.

Methods. The EVhA-3 is an epidemiological, multicenter, cross-sectional study in Spain in 35-60 years-old HIV+ women on stable antiretroviral treatment (ART) ≥3 months and compared with HIV- controls. We described the sociodemographic characteristics of mature women HIV+ vs. HIV-; matched pairs by age and educational level. We compared in matched pairs the Quality of Life-QoL using the MOS-HIV and SF-36 questionnaires, respectively; the Neurocognitive Function-NCF using the Brief Neurocognitive Test-(BNCS), anxiety and depression using the Hospital Anxiety and Depression Scale (HADS–A and HADS-D). Aspects on the sexual sphere were assessed using an ad-hoc designed survey. The study was approved by Ethic Committees and Health Authorities.

Results. We analysed 108 mature HIV+ and 113 HIV- women who were enrolled in 29 hospital-sites (April-September 2011) - 103 HIV+/HIV well matched pairs. Age for HIV+ vs. HIV- mature women (mean±SD) was 45.3±5.6 vs. 45.1±5.6 years (p=0.84); race/ethnicity distribution was Caucasian, 89.8% vs. 82.3%l black,1.9% vs. 1.8%; and Hispanic, 7.4% vs. 15.9% (p=0.19), respectively. The mean anthropometric measures were not significantly different in HIV+ vs. HIV- women. The marital status showed less HIV+ married/living with a partner, 41.8% vs. 68.1%; more HIV+ widows, 19.4% vs. 5.3%, (p=0.002); and more HIV+ women with no children, 29.1% vs. 16.1% (p=0.02). Regarding sexual sphere, there was a trend to significance in longer mean duration since menopause first symptoms in HIV+ women, as well as a trend for more vs. HIV- women referring menopause diagnosis, and significantly less percentage of HIV+ women were sexually active, 63.9% vs. 85.8% (p<0.001) and also less had stable partner, 64.8% vs. 83.2% (p=0.003); more HIV+ had decrease in libido, 49.1% vs. 33.6% (p=0.01) and longer duration of symptoms, 41.3±47.6 vs. 22.2±18.2 months (p=0.01). Pairs HIV+/HIV- comparison showed a trend to worst QoL, significant for 'Pain' mean scores, 71±28 vs. 77±21 (p=0.03) and 'Mental health', 65±22 vs. 75±18 (p=0.001); significantly greater mean scores for HADS-A, 7.50±4.15 vs. 5.75±3.97 (p=0.002) and HADS-D, 4.38±4.18 vs. 2.41±2.57 (p<0.001). More HIV+ women had a positive screening results for NCF damage, 49.5% vs. 30.1 (p=0.003), although only the NCF (BCNS-Trail Making B test) showed worst results for HIV+, 99.14±49.09 vs. 85.66±44.39 (p=0.01).

Conclusions. Mature HIV+ women differ in social habits and sexual sphere from matched HIV- pairs. There was a trend for lower QoL scores, and significantly greater proportion with positive screening tests for anxiety, depression and neurocognitive damage (Trail Making B) were reported in HIV+ vs. matched pairs of HIV- women. A multidimensional management with special focus on mental health and mood stage of the HIV+ women might be critical to improve their wellbeing facing aging and living with HIV.

Abstract: O_10B

Epidemiology of HIV specific to women and girl

Quality of life, mood stage and neurocognitive function in HIV+ young vs. HIV+ mature women in Spain. EVhA1 and EVhA3 Studies (EVhA Stages Project)

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Background. There are few data about HIV+ women in Spain despite the fact that these comprise approximately 25% of the HIV+ population. Two studies were performed in HIV+ women vs. HIV- controls, each one in a different stage of life; young, 16-22 y/old, (EVhA-1) and mature, 35-60 y/old (EVhA-3). The objective of this sub-analysis is to compare these two HIV+ women age groups with regards to Quality of Life (QoL), mood stage (anxiety/depression) and neurocognitive function (NCF).

Methods. EVhA-1 and EVhA-3 are two epidemiologic, multicenter and cross-sectional studies conducted in HIV+ women who were on stable antiretroviral treatment (ART) ≥3 months. Questionnaires used were: MOS-HIV (QoL); Brief Neurocognitive Test-BNCS (NCF); Hospital Anxiety and Depression Scales-HADS-A (anxiety) and HADS-D (depression).

Results. We included in the analysis 54 young and 108 mature HIV+ women with mean (SD) age of 18.5±2.0 and 45.3±5.6 years; predominantly Caucasian 79.6% vs. 89.8%,

(p=0.003), respectively. The HIV transmission route was vertical transmission in 94.4% young women, and 69.4% heterosexual relationship and 22.2% intravenous drug use in the mature, (p<0.001). Mean time since HIV diagnosis was 16.4±4.1 vs. 15.1 ±6.9 years in young vs. mature (p=0.43). AIDS diagnosis in 22.2% vs. 29.6% (p=0.21) since 14.6±5.0 and 10.8±6.1 years (p=0.06), respectively. Significant differences were found in the proportion of young vs. mature women with CD4 nadir< 200 cells/µL, 25.9% vs. 47.1% (p=0.007); current CD4, 809±430 vs. 665±308, (p=0.03); and number of previous ARTs sequences, 2.74±2.25 vs. 4.08±3.49 (p=0.02), respectively. While mean time on ART was similar for both groups, the main reasons to initiate current ART differed between young and mature: virological failure, 35.2% vs. 11.1%; simplification, 16.7% vs. 40.7%; intolerance, 7.4% vs.18.5% (p=0.001). Less self-reported adherence ('none missed dose') was found in 41.5% young vs.75.0% mature (p<0.001) HIV+ women, although % with viral load <50copies/mL was similar between groups, 79.6% vs. 82.4% (p=0.41). There were no differences between age groups in mean overall QoL scores, however, there were significant differences between young vs. mature women in the MOS-HIV following components: 'global health', 69±22 and 58±28 (p=0.02); 'social function', 93±17 and 86±24 (p=0.03) and 'transitory health', 69±27 and 55±20 (p<0.001), respectively. The young women showed overall better mean scores in: HADS-A, 5.94±3.89 vs. 7.56±3.89 (p=0.02); HADS-D, 2.46±2.79 vs. 4.44±4.09 (p=0.002); BNCS (WAIS-III test), 70±18.03 vs. 61.2±19.55 (p=0.003). Significantly lower percentage of young women vs. mature scored HADS-D >8 (depression positive screening), 3.7% vs. 16.7% (p=0.01) and for damaged NCF, 11.1% vs. 50% (p<0.001). In younger women anxiety positive screening correlated with lower QoL scores in physical function, energy, mental health, cognitive function and transitional health components; while both, anxiety and depression positive screening was a related factor with lower QoL scores in all components for mature women.

Conclusions. Young HIV+ women show less damage in their sexual sphere, better mood stage, neurocognitive function and higher QoL scores than in HIV+ mature women. How clinical-demographic differences between groups influence on these results it is something that deserves further investigation.

Abstract: O_10C

Epidemiology of HIV specific to women and girl

Sociodemographic-clinical characteristics, quality-of-life, sexual-sphere, mood-stage and neurocognitive-function in HIV+ young women in Spain. EVhA1.

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Background. The interest to study the HIV infection in women (HIV+) is constantly increasing, despite what there are still important open matters to investigate in the HIV+ women field through the different age stages.

Methods. The EVhA-1 is an epidemiological, multicenter, cross-sectional study in Spain in HIV+ young women (aged 16-22 years) on stable antiretroviral treatment (ART) ≥3 months. The study analysed sociodemographic and clinical characteristics, Quality of Life (QoL), neurocognitive function (NCF), anxiety, depression and the sexual sphere in young HIV+ women vs. HIV- women. Previous history of severe psychiatric disorder (e.g major depressive disorder, schizophrenia) was an exclusion criteria. The QoL was measured using the MOS-HIV and SF-36 questionnaires; the NCF using the Brief Neurocognitive Test (BNCS); and anxiety and depression using the

Hospital Anxiety and Depression Scale (HADS–A y HADS-D, respectively) in HIV+/HIV- pairs matched by age, education and laboral/student status. For aspects on the sexual sphere an ad-hoc designed survey was used.

Results. We analysed 54 valid out of 57 young HIV+ women and 59 HIV- controls which were enrolled in 15 hospital sites (April-November 2011) - 46 were paired. Most HIV+ women acquired HIV through vertical transmission (94.4%), and had a mean age (SD) vs. HIV- of 18.5±2.0 vs. 18.9±2.0 years, p=0.40. Comparing race and ethnicity distribution HIV+ women vs. HIV-, 79.6% vs. 79.7% were Caucasian, 16.7% vs. 8.5% black, and 1.9% vs. 11.9% Hispanic (p=0.09). Weight and height were significantly lower in HIV+, 55±8 vs. 60±13 Kg, p=0.025; 160±7 vs. 163±6 cm, p=0.02 respectively, although BMI was similar. The majority of HIV+ vs. HIV- were single and differed in living with: parents, 35.2% vs. 59.3%; father or mother, 20.4 vs. 23.7%; or tutors, 27.8% vs. 3.4%, (p=0.003). Proportion of HIV+ vs. HIV- young women who achieved primary level of education was, 16.7% vs. 8.5%; secondary, 79.6% vs. 64.4%; and university, 3.7% vs. 27.1% (p=0.002). There were no significant differences in most sexual sphere habits, although 60.7% of HIV+ women vs. 8.6% HIV- have inquired their doctor about pregnancy (p<0.001); and 25.7% vs. 5.3% have been pregnant at least once (p=0.016). The comparison between paired HIV+/HIV- young women, showed a trend to worst QoL in 'Energy and vitality' and 'Mental health', and differences were only significant for 'Pain', 77±16 vs. 86±16 (p=0.02). No significant differences in anxiety and depression (scores or % patients with positive screening), nor in NCF were observed, except for a trend of a worse Trail A score in HIV+ women 41.36±14.81 vs. HIV- 36.47±12.71 (p=0.091).

Conclusions. This cross-sectional study showed few socio-demographic differences between 16 to 22 years-old HIV+ and HIV- women including lower educational level and lower weight and height in HIV+ women. A trend to a lower overall QoL score and a higher score for Pain were found in HIV+ women. Noteworthy, HIV+ young women had more knowledge and experience in pregnancy, although further exploratory studies in this sexual sphere in young HIV+ women might be needed.

Conflict of interest
P. Arazo Garcés declares to have participated as advisor and in scientific activities sponsored by Glaxo Smith-Kline, Bristol Myers Squibb, Abbott Laboratories, Jansen Cilag, Merck SharpDohme, Gilead Sciences, Roche Pharma and Boehringer Ingelheim Pharmaceuticals
Dr. María José MelladoHas received honoraria, for participation in advisory boards and as clinical trials investigator from Bristol and Abbott Companies
Rosa Polo has received honoraria for participating in teaching materials from Gilead and Abbott.
Dr. Celia Miralles reports receiving consulting fees from Bristol-Myers Squibb, Gilead Sciences, Janssen, Abbott Laboratories and Merck, payment for development of educational materials from Bristol-Myers Squibb, compensation for advisory-board membership from Gilead Sciences, Janssen lecture fees from Merck, Bristol-Myers Squibb, Gilead Sciences, HIV, and compensation for travel, accommodations, or meeting expenses from, Bristol-Myers Squibb and Gilead Sciences. No other potential conflict of interest relevant to this article was reported.
Dr. María Jesús Pérez-Elías has received honoraria for lectures or for participation in advisory boards from Abbott, Bristol-Myers Squibb, Boehringer Ingelheim, Gilead Sciences, ViiV, and Jansen-Cilag and unrestricted grants for Abbott, ViiV, Gilead, and Jansen-Cilag
Dr. Mª José Galindo Puerto has undergone activities related to advisory for the following laboratories, Abbott Laboratories, Boehringer Ingelheim, GlaxoSmith Kline, Gilead Sciences, Janssen, Merck, Pfizer and ViiV Healthcare has received fellowships for clinical research from Gilead Sciences, GlaxoSmith Kline, Janssen has got economical compensation as speaker for Janssen, Bristol-Myers Squibb, Merck, Gilead Sciences, Pfizer and ViiV Healthcare and has received payment to develop educational presentations for Boehringer Ingelheim, Bristol-Myers Squibb, GlaxoSmith Kline, Gilead, ViiV, Abbott laboratories, Janssen and Merck.
Authors Cristina de Álvaro, Esther Cabrero and Ángel Burgos are Abbott employees and may hold stock or options

Abstract: O_11

Aging and co-morbidity of the HIV infected women

Differences by age for women in the response to initial HAARTs: Meta-analysis from clinical studies submitted to the FDA (2000 – 2010)

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Introduction: Studies in the US suggest that women with HIV-1 infection may undergo menopause earlier than the general population. Delineating potential age and/or menopause differences for women in response to initial HAARTs treatment is important to HIV clinical care, research, and drug development. Cumulative data and analyses from randomized clinical trials (RCTs) could provide clinical, scientific, and regulatory benefits.

Material & Methods: From 2000-2010, datasets of all naïve female subjects enrolled in registrational antiretroviral (ARV) therapy treatment trials were evaluated by meta-analysis method for age group differences in Week 24 and 48 responses in virologic response (HIV-RNA < 400 Copies/mL) and immunologic response (CD4 change from baseline). Age was classified into three groups: <=35 years old, 36~49 years old and >=50 years old, with the group difference between (<=35) and (>=50) being the major focus. Analyses were also performed by the types of drug combinations for nucleoside/nucleotide reverse transcriptase inhibitors (NRTIs) combined with non-nucleoside reverse transcriptase inhibitors (NNRTIs), data for NRTIs combined with protease inhibitors (PIs).

Results: The combined database had 4,414 HIV-infected naïve female in 32 RCTs. With respect to virologic responses, age<=35 group had a statistically significantly lower success rate than age>=50 group at both Week 24 and Week 48 (estimated 95% CI of the log odds ratio difference at Week 24: -0.94, -0.24, Week 48: -0.78,-0.17). With respect to the immunologic responses, however, there were no clinically or statistically significant age differences (Week 24, 95% CI: -8.21, 25.25, Week 48, 95% CI: -16, 22.76), but the younger group with NRTIs/NNRTIs showed significant better responses in both week 24 and 48 (Week 24, 95% CI: 6.43, 52.59, Week 48, 95% CI: 0.48, 53.88).

Conclusions: Preliminary analyses of the FDA database have been the most detailed review of age-related ARV efficacy data so far. These analyses suggested a favor of age>=50 group for virologic responses at both Week 24 and Week 48, but no clinically or statistically significant gender differences in immunologic responses except for those treated with NRTIs/NNRTIs. Such data could help healthcare providers and HIV-1 infected patients when considering different ARV regimens, and to identify issues in scientific and regulatory perspectives in the future.

No conflict of interest

Abstract: O_12

Angiogenesis and Adverse Pregnancy Outcomes in Women with HIV: the AAPH study.

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Background: HIV-positive women experience higher levels of adverse pregnancy outcomes. The mechanisms responsible for this remain unknown. Proper angiogenesis (the formation of blood vessels) is important for the development of a sufficient placenta vasculature. A delicate balance between pro-angiogenic and anti-angiogenic factors in required for proper placenta vascularisation. Alterations in angiogenic factors that push the balance towards an anti-angiogenic state have been associated with pregnancy complications such as low birth weight, pre-term birth, and preeclampsia. Both HIV infection and HIV antiretrovirals (especially protease inhibitors) have been reported to alter levels of some angiogenic factors. However, angiogenic factors have never been studied in HIV-positive pregnant women. We hypothesised: 1) that levels of angiogenic and anti-angiogenic factors will differ between HIV-positive and uninfected women, and 2) that changes in the levels of these factors will be predictive of adverse pregnancy outcomes. To test these hypotheses we have initiated a longitudinal cohort study of HIV-positive and HIV-negative pregnant women. This is an ongoing study.

Methods: Recruitment of 100 HIV-positive women is underway at 5 sites in Toronto. HIV-positive pregnant women are being recruited in their first trimester or early in their second trimester of pregnancy. 4-9 blood samples are collected throughout pregnancy. At delivery maternal, placental, and cord blood, and placenta tissue are collected. Women are separated into three groups: those with uncomplicated full-term pregnancies, those who delivered a small for gestational age neonate, and those that delivered pre-term. 100 HIV-negative pregnant women matched for gravidity, age, ethnicity, and educational levels are being recruited as controls.

Results: To date 46 HIV-positive women have been recruited and 26 women have delivered. Of these 26 women, 4 delivered pre-term, 5 had small for gestational age babies, and 1 experienced a fetal demise at 12 weeks. Comparing to the 50th percentile for gestational age, HIV-positive women had significantly lower birth weight (approximately 200g less, $p=0.024$), and placental weight (approximately 150g less, $p<0.001$). We observed a significant correlation between placental and fetal weight ($R^2=0.344$, $p=0.017$). Several gross placental abnormalities were present in the HIV-positive women, including fibrotic lesions, intervillous thrombi, inflammation, and higher than expected rates of succenturiate lobes, and velamentous insertions.

Discussion: Although recruitment for this study is not yet complete we have already observed a high incidence of adverse pregnancy outcomes in the HIV-positive women, including smaller placentas, increased placental abnormalities, and smaller babies.

Abstract: O_13

Progesterone level changes after cART exposure *in vitro* and *in vivo* are possibly linked to adverse birth outcomes

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Background: Combination antiretroviral therapy (cART) in pregnancy was associated with smaller birth weight and higher frequency of preterm delivery in HIV-positive women. Protease inhibitors are known to inhibit enzymes involved in the synthesis of steroid hormones including progesterone. Lower levels of progesterone have been linked to small birth weight and preterm delivery in humans. Progesterone levels and their relation to birth weight and other adverse birth outcomes have not been investigated in the context of cART.
The aim of this study was to determine how different antiretroviral drugs influence progesterone production in placental cells and to investigate how cART exposure influences progesterone levels and birth outcomes in a mouse model.

Methods: In vitro: Placental cytotrophoblast (BeWo) cells were exposed to physiological concentrations of antiretroviral drugs (the NRTIs: AZT, and 3TC; and the protease inhibitors: Atazanavir, Darunavir, Lopinavir, and Ritonavir) alone or in clinically relevant combinations for 24 hours; supernatant was collected for progesterone quantification. In vivo: pregnant mice were exposed to cART, consisting of human equivalent doses of AZT/3TC (Combivir) plus Lopinair/ritonavir (Kaletra) or water either throughout gestation (day 1-18), for the pre-implantation period (day 1-6), or starting post-implantation (day 6-14). Pregnancy failure, number of implantations or fetuses, viability and weight of fetuses were recorded. Placental weight was collected as a marker of placental development. Circulating progesterone levels were quantified from maternal plasma with commercial ELISA. ANOVA and Pearson's correlation was used to establish statistical significance.

Results: BeWo cells exposed to Atazanavir, Lopinavir or Ritonavir had significantly lower progesterone production, while AZT and 3TC had no effect on progesterone expression. Combination therapy resulted in lower progesterone levels in all cases. Similar tendency was found in pregnant mice exposed to Combivir +Kaletra. Mice exposed throughout gestation had more pregnancy loss, less viable pups per litter as well as significantly lower fetal and placental weights. Progesterone levels were significantly lower in the exposed group, which positively correlated with fetal weight. Exposure early in pregnancy was associated with progesterone level decrease. Exposure later (after implantation) did not affect progesterone levels, and was not associated with lower fetal weight, but did result in a decrease in the number of viable pups.

Conclusions: Our findings suggest that cART and especially protease inhibitor use may be associated with reduced progesterone levels during pregnancy, which appears to be associated with lower fetal weight in mice. Early (pre-implantation) exposure appeared to have more severe effect on birth outcomes than delayed exposure. Even with sustained progesterone levels, fetal death was present, suggesting a progesterone-independent effect of protease inhibitor exposure. Further experiments will help to clarify the mechanistic link between progesterone levels and fetal/placental development, providing information on alternative therapies, advancing our understanding on optimal therapy for HIV-positive pregnant women.

Abstract: O_14

Prevalence and predictors of adverse obstetrical outcomes in women with HIV: A twenty year chart review

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Background: High rates of adverse obstetrical outcomes (AOO) have been reported among women infected with HIV. The relative contributions of medical, social and contextual factors on AOO among women with HIV with access to health services remain poorly defined. Our study aims to estimate the prevalence and risk factors of AOO among pregnant women with HIV infection and access to comprehensive medical HIV care in Ottawa, Canada.

Methods: In this retrospective cohort study, the obstetrical outcomes of all HIV positive women treated at The Ottawa Hospital between 1990-2010 were reviewed. Adverse obstetrical outcomes investigated were low birth weight (<2500g), preterm delivery (<37 weeks), and small for gestational age (birth weight <10th percentile). Using a clinical audit of patient charts, data was collected on adverse obstetrical outcomes, demographic and individual data (age, historical parity, gravidity, marital status, ethnicity, immigration status, smoking, drug use), HIV-treatment characteristics (antiretroviral therapy (ART), era of ART, CD4 count, viral load), medical history (co-morbidities, co-infections) and socioeconomic characteristics (health insurance, employment, income, live-in partner, housing stability). The postal code of the mother's residence at the time of delivery was also used as a surrogate for income. Univariate logistic regression was used to identify factors associated with AOO.

Results: Between 1990-2010 there were 145 pregnancies and 123 live births among 87 women, with 13 (11.6%) deliveries via emergency C-section. At least one AOO was reported in twenty-four (21%) of the 114 live births for which complete outcome data was available, including 17 preterm deliveries, 11 small for gestational age (SFGA) and 9 low birth weight (LBW) outcomes. Nine live births had more than one AOO. In univariate analysis, no live-in partner (OR=4.0, p=0.011), a psychiatric history (OR=5.13, p=0.004), hepatitis C infection (OR=7.63, p=0.009) and a greater number of years in Canada among African immigrants (OR=1.21, p=0.01) was associated with AOO, when analyzed as a composite measure of any of LBW, SFGA and preterm. The correlation of all other variables with AOO did not reach statistical significance including postal code-based income estimate, which was uniformly low.

Conclusion: There is a high prevalence of AOO among women with access to comprehensive care for HIV. In our retrospective cohort study, social and contextual factors, not medical and anti-HIV treatment factors were more strongly associated with AOO. Given access to medical healthcare services, maternal-child health promotion in HIV positive women should focus on the social domain.

Abstract: O_15

ARV therapy for women -- efficacy, toxicity, pharmacokinetics

Systematic review of the safety and efficacy of Lopinavir/ritonavir-based antiretroviral therapy in pregnant women

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Background: The protease inhibitor, lopinavir, co-formulated with ritonavir (LPV/r) plus two nucleoside reverse transcriptase inhibitors is recommended by the US Department of Health and Human Services Perinatal Guidelines as one of the preferred regimens for HIV treatment in pregnant women. Pharmacokinetic studies suggest that the LPV/r standard dose of 400/100mg twice-daily during pregnancy results in reduced plasma LPV/r exposure in the third trimester; however, these declines do not appear to impact maternal clinical outcomes or MTCT rates. Pharmacokinetic studies are not designed nor powered to assess clinical outcomes.

Methods: We conducted a systematic review to assess maternal and infant clinical and safety outcomes in pregnant women treated with LPV/r-based regimens. PubMed, EMBASE, and HIV congresses were searched for studies published through May 31, 2012. Studies were selected if they included HIV-1-infected pregnant women treated with LPV/r-based therapy and reported maternal and infant outcomes as a primary objective. Data were extracted from publications and tabulated for analysis.

Results: Ten publications/presentations describing 9 studies were identified. These studies included 2675 women treated with LPV/r: 1618 received LPV/r 800/200mg/day, 70 received >800/200mg/day, and 987 received an unknown LPV/r dose.

Overall, >80% of women (65%-97%) achieved viral suppression below the threshold for the study in which they enrolled. There was no significant difference in the number of women with HIV-1 RNA≥1000 copies/mL in the one study evaluating both standard and high doses of LPV/r. Eight studies reported MTCT, measured at times ranging from birth to 18 months. MTCT rates ranged from 0-3.3% and in the one trial comparing standard to higher-dose MTCT was 0.6% (1/164) and 0.0% (0/70), respectively.

Maternal serious adverse events (SAE) reported in 5 studies (n = 1045) ranged from 0%-36%. In the two studies (n =687) reporting types of events, infectious diseases (8%, 34/412) and obstetric pathologies (3%, 8/275) were the most commonly reported. In three studies (n = 845) reporting laboratory events, grade 3-4 events occurred in 4.3% (7/164), 4.4% (18/405), and 12% (32/275) of women. The most common laboratory events in each study were increased cholesterol levels (3%, 5/164), decreased hemoglobin (3%, 10/377), and anemia (4%, 12/275), respectively. Two studies reported discontinuations. There were 7/412 (1.7%) and 1/285 (0.4%) discontinuations; however, reasons for discontinuation were not reported.

Conclusions: This systematic review of 2675 pregnant women suggests no unique safety or efficacy concerns with the use standard dose LPV/r-based ART in pregnant women. Despite decreases in LPV/r plasma exposure during the third trimester, maternal plasma HIV-1 RNA levels and rates of MTCT in this review were consistent with or below those observed with alternative antiretroviral regimens. Although high dose LPV/r use was limited to one study in this analysis, the safety and efficacy outcomes reported, including MTCT rates, were similar to those obtained with standard dose.

Conflict of interest
financial relationship(s): All authors are employees of Abbott and may own Abbott stock or stock options. Medical writing support was provided by Rebecca Maag, who is also an Abbott employee and owns Abbott stock.

Abstract: O_16

ARV therapy for women -- efficacy, toxicity, pharmacokinetics

Total and unbound darunavir pharmacokinetics in HIV-1–infected pregnant women

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Introduction: Antiretroviral therapy during pregnancy is recommended to reduce the risk of mother-to-child transmission (MTCT). Physiologic changes during pregnancy can affect pharmacokinetics. Total and unbound (pharmacologically active) darunavir pharmacokinetics in HIV-1–infected pregnant women receiving twice-daily darunavir/ritonavir was investigated.

Material & Methods: This Phase IIIb study enrolled HIV-1–infected pregnant women ≥18 years old in the 2nd trimester of pregnancy receiving darunavir/ritonavir 600/100mg twice-daily and other antiretrovirals. Darunavir (total and unbound) and ritonavir (total) plasma concentrations were obtained predose and 1, 2, 3, 4, 6, 9 and 12 hours postdose during the 2nd and 3rd trimesters and postpartum. Total darunavir and ritonavir plasma concentrations were determined using a previously validated LC-MS/MS assay (lower limit of quantification 5.00 ng/mL). Unbound darunavir was determined by fortifying plasma samples with 14-C darunavir and separating total and unbound darunavir using ultrafiltration. Total and unbound 14-C darunavir were measured using liquid scintillation counting. Total and unbound pharmacokinetic parameters were derived using noncompartmental analysis (WinNonlin®). Safety and efficacy were investigated at each visit and summarized using descriptive statistics.

Results: Sixteen women (10 black, 4 Hispanic, 2 white) were enrolled; 11 had evaluable pharmacokinetic data. Total darunavir AUC_{12h} was 24% and 17% lower during 2nd and 3rd trimesters, respectively, vs postpartum. Total ritonavir AUC_{12h} was 28% and 33% lower during 2nd and 3rd trimesters, respectively, vs postpartum. Unbound darunavir AUC_{12h} was unchanged during 2nd and 3rd trimesters vs postpartum. Total and unbound darunavir C_{min} increased by 43% and 10%, respectively, during 2nd trimester and by 86% and 14%, respectively, during 3rd trimester vs postpartum. Albumin and α_1-acid glycoprotein (AAG) concentrations were 22%–29% lower during pregnancy vs postpartum. Mean $\log_{10}$ viral load was 2.17, 1.99 and 1.88 at baseline, 2nd trimester and 3rd trimester, respectively. Median CD4+ cell count was 419, 429 and 470 cells/mm^3 at baseline, 2nd trimester and 3rd trimester, respectively. One serious adverse event was reported (increased transaminase). Three of 12 infants were born prior to 37 weeks (30, 36 and 36 weeks), and, all 12 infants were HIV-1–negative by standard PCR testing.

Conclusions: Total darunavir and ritonavir exposure decreased during pregnancy likely due to pregnancy-related dilution of albumin and/or AAG. No clinically relevant change in unbound darunavir AUC_{12h} and C_{min} occurred during pregnancy, and there was no MTCT; therefore no dose adjustment is required for darunavir/ritonavir 600/100mg bid in pregnant women. This ongoing trial will further evaluate the effects of pregnancy on darunavir/ritonavir once daily, etravirine and rilpivirine pharmacokinetics.

Conflict of interest
financial relationship(s): Dr. Osiyemi received research grants from Janssen, GSK, Merck, Pfizer and honoraria from Gilead and Abbott

Abstract: O_17

Transmission and progression in HIV infected women, role of contraception

Pregnancy outcomes among HIV-infected women in Uganda and Zimbabwe

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Background: Understanding pregnancy outcomes and rates among women living with HIV have significant implications on sexual, reproductive and HIV health services, particularly in high HIV prevalence settings with limited access to adequate antiretroviral treatment. We describe pregnancy outcomes in a longitudinal cohort of HIV-infected women in Uganda and Zimbabwe and examine the factors associated with a live birth outcome among women receiving HAART and HAART naïve.

Materials & methods: In Uganda and Zimbabwe, HIV-1 infected women were recruited following seroconversion into a longitudinal study evaluating hormonal contraception and HIV genital shedding and disease progression (GS Study). Women enrolled in the GS Study from 2001-2007 were examined quarterly and incident pregnancies (urine Hcg testing) and birth outcomes were recorded. Kaplan-Meier method was used to estimate pregnancy probabilities, and logistic regressions with generalized estimating equation to evaluate factors associated with birth outcomes (i.e. live birth vs. miscarriage or fresh stillbirth).

Results: Among the 306 HIV infected women, a total of160 pregnancies were recorded (82 from Uganda and 78 from Zimbabwe). The median age at estimated infection date and first pregnancy were 26 years [ID IQR: 24-29, FP IQR: 24-29] for both countries. Women received antenatal care by month 5 in 61% (N=86) of pregnancies from either a hospital or health center (93%). The median CD4 t-cell count for both countries was 548 cell/mm^3 [IQR: 413-684 cell/mm^3]. Of the 152 known birth outcomes, in Uganda 42 (54%) were live births, 13 (17%) were miscarried, 1 (1%) was stillbirth and 22 (28%) were induced abortion; while in Zimbabwe, 52 (70%) were live births, 14 (19%) were miscarriages, and 3 (4%) were stillbirth and 5 (7%) were induced abortion. All births were vaginal deliveries, with the exception of 10 (11%) Cesarean deliveries, 8 in Uganda and 2 in Zimbabwe. Pregnancy probability was higher in Ugandan than Zimbabwean women ($p<0.01$). The pregnancy incidence rate was higher ($p = 0.04$) among ART-naïve women at 10.7 per 100wy than among women taking HAART (5.5 per 100wy). In bivariate analysis, antenatal care (OR=71.9, $p<.01$), illness during pregnancy (OR=0.27, $p<0.01$), and pregnancy complications (OR=0.20, $p<0.01$) were statistically associated with live birth outcome, while HAART use during pregnancy, baseline CD4 count, and age were not significantly associated.

Conclusion: HIV-infected African women, HAART-naïve have a higher pregnancy rate than women on HAART; although results also indicate that HAART status may not affect the risk of adverse pregnancy outcomes among HIV positive, including fresh stillbirth and miscarriage. Reproductive and HIV care and treatment services should target HIV positive women to address their fertility desires/intentions and contraceptive needs, regardless of HAART status. The bivariate analysis emphasizes the need for timely and appropriate antenatal care and monitoring of pregnancy complications and illnesses for HIV-infected women. Strengthened antenatal care services should be rapidly integrated with prevention of mother-to-child transmission services in high HIV prevalence settings. Ultimately, women living with HIV require strongly linked services addressing fertility-related issues to optimize health outcomes for mother and baby.

No conflict of interest

3rd International Workshop on HIV & Women

14 - 15 January 2013, Toronto, Canada

Abstracts

Poster Discussion Presentations*

lacking abstract numbers are numbers of abstracts that have been withdrawn

Abstract: PP_02

Epidemiology of HIV specific to women and girl

Gender differences among newly diagnosed HIV-1 infected patients in the Russian federation

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Introduction: Women represent one a fast-growing population with human immunodeficiency virus 1 (HIV-1) infection in the Russian Federation. While many of the clinical manifestations of HIV/AIDS in women are similar to men, substantial gender-based differences in HIV disease exist. The objective of this epidemiologic study was to describe and, thus, better understand gender differences among newly diagnosed HIV-1 infected patients in the Russian Federation.

Materials and Methods: This was a cross-sectional, multicenter, epidemiologic study. Adult patients newly diagnosed with HIV-1 infection and naïve to highly active antiretroviral therapy were identified at twelve centers/regions (Moscow, St Petersburg, Leningrad, Ufa, Kazan, Ulyanovsk, Volgograd, Yekaterinburg, Kemerovo, Krasnoyarsk, Irkutsk and Vladivostok) of the Russian Federation. CD4+ T-cell counts and HIV-1 RNA were measured cross-sectionally at baseline. Categorical variables were compared with the chi-square test, or if it was judged not to be a valid test, Fisher's exact test was used. An independent 2-sample t-test with unequal variances was used for the comparison of quantitative variables. All tests were to be two-sided and performed at the 5% unadjusted significance level.

Results: A total of 4540 patients were included: 2251 (49,6%) patients were women and 2289 (50,4%) were men. HIV-1 infected women were younger than men overall (mean age 31.1 years vs 34.1 years, p<0,05) and across a number of age categories (% women versus % men, respectively): 27,5% vs 12,4% 18-25 years; 59,3% vs 69,3% 26-40 years and 13,2% vs 18,3% >40 years. More women compared to men declared being in a stable relationship (60% vs 46%, p<0,05; married or civil partnership). We observed differences regarding probable mode of HIV-1 transmission: heterosexual contact was more likely for women (78,5% vs 45,1%, p<0,05) and intravenous drug use more likely for men (16,2% vs 44,7%, p<0,05). 31.1% of women included were diagnosed in the context of HIV screening during pregnancy. Women were less likely to have a history of AIDS defining illness (8,4% vs 12,2%, p<0,05), chronic HCV infection (23,6% vs 44,0%, p<0,05) and chronic HBV infection (2,4% vs 5,5%, p<0,05). Overall, 16.3% patients presented CD4+ T-cell count </=200 cells/mm^3 (advanced stage of HIV disease). Fewer women had CD4+ T-cell count </=200 cells/mm^3 compared to men (12,4% vs 20,2%, p<0,05). Women had lower mean HIV-1 RNA viral load compared with men (4,23 log_{10} vs 4,59 log_{10} copies/ml, p<0,05) and higher mean CD4+ T-cell count (475,1 vs 424,7 cells/µl, p<0,05).

Conclusions: In this large epidemiologic study in the Russian Federation, we found that newly diagnosed HIV-1 infected women were younger than men, and had lower mean HIV-1 RNA viral load and higher mean CD4+ T-cell count compared to men. The higher prevalence HIV-HCV and HIV-HBV co-infection in men may be due to IVDU as a frequent mode of HIV-1 transmission.

No conflict of interest

Abstract: PP_03

Research agenda; what are we doing, what more can/should be done

Effective recruitment strategies for HIV-positive women in a province-wide cross-sectional study

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Background: Women, particularly from minority groups, have historically been under-represented in clinical and epidemiologic research studies of HIV/AIDS. This under-representation is believed to partially be due to ineffective recruitment strategies. However, there are few published scientific studies exploring recruitment issues related to the inclusion of women in HIV/AIDS research. Furthermore, while a limited number of studies have been published that assessed recruitment barriers and strategies in HIV/AIDS research from the perspectives of the participants, the perspectives of the recruitment personnel have been unstudied. Thus, we aimed to assess recruitment barriers and identify successful recruitment strategies for HIV-infected women in order to facilitate the research agenda on women and HIV by expanding enrolment in HIV/AIDS research.

Materials and Methods: A survey was emailed to all site coordinators (n = 38) who recruited participants in a study on fertility intentions involving HIV-positive women of reproductive age living in Ontario, Canada. The survey consisted of questions regarding the important recruitment barriers and successes. Survey data were entered twice and verified prior to analysis. Baseline characteristics of the study population were summarized using means (and standard deviations) and frequencies (and proportions) for continuous and categorical variables. The responses for the recruitment barriers and strategies were reported as frequencies and proportions and using the rank correlation test.

Results: Completed surveys were received from 89% of site coordinators (34/38); 98% (31/34) were women. The most important recruitment barriers identified were: sensitivity of the research topic (59%), time/availability constraints (59%), language barriers (53%), HIV disclosure/stigma issues (47%), lack of trust of research personnel (41%), inaccessibility to child care and transportation (41%) and fear of research (41%). The respondents felt that most important factor for recruitment was trust between her and the research personnel (85%). For successful recruitment, a need for a strong rapport between the research personnel and the participant (85%) which is facilitated by empathetic (100%) and flexible (82%) personnel was identified. The most successful recruitment strategies identified were: flexibility when scheduling study visits (79%), offering a comfortable environment (79%), and providing financial compensation for transportation (71%).

Conclusion: In order to advance the research agenda on women and HIV, increased representation of women in clinical and epidemiologic research studies is essential. This will require effective recruitment strategies. For successful recruitment of HIV-positive women into studies, a strong rapport between the research personnel and study participants is important. Having study personnel who are trustworthy, empathetic, and flexible facilitates this rapport. Population-specific recruitment strategies are important to ensure generalizability of study findings to minority groups such as women. The current study provides a better understanding of the recruitment barriers and successful recruitment strategies used from the perspectives of the study coordinators involved in HIV research enrolling women from minority groups. It is important to address recruitment barriers, preferably a-priori, for HIV-positive women to be

included in research by developing strategies that are specific to the needs of women.

No conflict of interest

Abstract: PP_04

ARV therapy for women -- efficacy, toxicity, pharmacokinetics

Severity and impact of antiretroviral-associated lipodystrophy in HIV-positive women

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Background: Lipodystrophy, a side effect of antiretroviral therapy (ART), refers to pathological changes in body shape including peripheral fat loss and/or central fat accumulation. This study assessed the prevalence, nature and severity of lipodystrophy and the impact on quality of life QOL among HIV-positive women in Toronto.

Methhods: Participants were recruited from four Toronto sites. Lipodystrophy was assessed with a modified HOPS questionnaire and defined as the presence of ≥1 severe body change or two moderate/minor body changes. QOL was assessed with the Body Image QOL Inventory, which ranks 19 items on a scale from -3 to 3; mean QOL was calculated for each woman. Linear regression models were used to estimate the effects of lipodystrophy, lipoatrophy and lipohypertrophy on QOL after adjusting for covariates. Lipoatrophy severity scores assessed fat loss in extremities, hips/buttocks and cheeks and ranged from 0 to 12. Lipohypertrophy severity scores assessed fat gain in neck & back, breasts and abdomen and ranged from 0 to 12.

Results: Data was available for 114 women; median age was 41 years and median duration of HIV infection was 9 years. Seventy (61%) women had lipodystrophy; 37 (32%) had peripheral lipoatrophy, 61 (54%) central lipohypertrophy, and 28 (24%) had both lipoatrophy and lipohypertrophy. Median (inter-quartile range) severity scores for lipodystrophy, lipoatrophy and lipohypertrophy were 8(3,4), 1(0,6) and 5(2,8) respectively. In a multiple linear regression model, a higher lipohypertrophy severity score was strongly associated with a lower QOL (coeff = -0.22, p<.0001), after adjusting for clinic site. Lipoatrophy severity was not associated with QOL.

Conclusions: HIV positive women with more severe lipohypertrophy reported poorer QOL. In contrast, lipoatrophy scores were not associated with QOL, suggesting that fat gain was more bothersome to women than fat loss. Significant differences in QOL were noted among clinics, suggesting differences among these patient populations.

No conflict of interest

3rd International Workshop on HIV & Women

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Abstracts

Poster Presentations*

lacking abstract numbers are numbers of abstracts that have been withdrawn

Abstract: P_02

Aging and co-morbidity of the HIV infected women

Meta-analysis comparing safety, tolerability, and efficacy of LPV/r-containing art in women aged <50 versus ≥50 years in randomized clinical trials

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Background: Health and Human Services Guidelines state that treatment of older HIV-positive patients requires management of aging-related comorbidities (particularly heart, liver, renal disease, cancer, and bone demineralization) in addition to HIV-infection, and that HIV itself may affect the biology of aging. This meta-analysis compared women aged <50 and ≥50 years receiving Lopinavir/ritonavir (LPV/r)-containing anti-retroviral therapy (ART) to evaluate potential effects of age on safety, tolerability, and efficacy in women.

Methods: Meta-analysis included Abbott or Abbott-supported AIDS Clinical Trials Group (ACTG) randomized clinical trials (RCTs) in adult subjects including women, LPV/r 800/200 mg/day as part of a 3-drug regimen, and follow-up duration 48 weeks. A random-effects meta-analysis was performed to evaluate virologic efficacy; other endpoints were analyzed using pooled subject-level data.

Results: 992 women from 11 RCT (7 Abbott, 4 ACTG) were included, with 889 women <50 (mean age 34.7) and 103 women ≥50 (mean age 55.2) years old. Baseline characteristics, including HIV-1 RNA level, were similar between women <50 and ≥50 years, respectively, except for: proportions of black subjects (71.5% versus 51.5%), Hispanics (13.2% versus 29.1%), baseline $CD4^+$ T-cell count <200 cells/mm^3 (66.2% versus 52.9%) or <50 cells/mm^3 (12.2% versus 20.6%). 79.6% and 75.7% of women were ART-naïve in the <50 and ≥50 age groups, respectively. Baseline mean laboratory differences ($P \leq 0.05$) included: amylase (87.3 and 105.8 U/L), lipase (37.1 and 56.9 U/L), creatinine clearance (117.0 and 96.7 mL/min), cholesterol (152.1 and 166.7 mg/dL), triglycerides (112.8 and 164.0 mg/dL), glucose (85.2 and 96.6 mg/dL), uric acid (4.5 and 5.0 mg/dL), and aspartate aminotransferase (32.4 and 37.7 U/L).
59.2% of women <50 and 69.2% of women ≥50 years had plasma HIV-1 RNA <50 copies/mL at 48 weeks (meta-analysis: 95% CI for difference [younger minus older] = -28.7% to +0.5%, $P=0.058$). Mean $CD4^+$ T-cell count changes from baseline were similar: +193.3 (from 182.1) and +176.3 (from 199.2) cells/mm^3 for women <50 and ≥50 years, respectively, ($P=0.278$).
Overall discontinuation rates were similar; however, a smaller proportion of women <50 years discontinued due to adverse events (AEs)/HIV-related events (3.5% versus 10.7%, $P=0.002$). Overall, 18.9% reported ≥1 moderate-to-severe AE possibly related to study drug (16.6% versus 37.9% in women <50 compared to ≥50, $P<0.001$). Significant differences ($P<0.05$) were observed between women <50 and ≥50 years, respectively, in the proportion of subjects with post-baseline grade 3+ laboratory abnormalities for amylase (1.6 % versus 6.8%), lipase (0.6% versus 6.4%), creatinine clearance (2.0% versus 12.1%), and cholesterol (3.2% versus 14.9%).

Conclusions: Women aged <50 and ≥50 years had similar virologic and immunologic response, and overall discontinuation rates. Women ≥50 had a higher incidence of moderate-to-severe treatment-related AEs and abnormalities in amylase, lipase, creatinine clearance, and cholesterol. These observations are consistent with baseline comorbidities and laboratory measures. Interactions between ART agents and other medications, differences in baseline laboratory values, additional comorbidities and differences in baseline CD4+ T-cells counts could contribute to these findings.

Conflict of interest :All authors are employees of Abbott and may own Abbott stock or stock options. Medical writing support was provided by Rebecca Maag, who is also an Abbott employee and owns Abbott stock.

Abstract: P_03

ARV therapy for women -- efficacy, toxicity, pharmacokinetics

CD4 responses to long term cART- do women perform better?

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Introduction: Insufficient data is available from present studies for allowing a comprehensive analysis of HIV patients on long-term treatment with cART (Combination Antiretroviral Therapy). There exists an ambiguity in the reports of efficacy of long term use of cART, whether the CD4 gain and immune reconstitution continues significantly or not. Literature review reveals equally convincing data debating the issue.

Materials and Methods: Based on the data collected in routine HIV care in Kasturba Hospital, Manipal, a tertiary care hospital in South India, this observational study was done with 66 patients fulfilling the inclusion criteria and study the response of CD4 counts to cART and to study the profile of Opportunistic Infections (OI's) occurring in the setting of long-term cART. Statistical analysis was done using the SPSS16.0 software.

Results: We found that the CD4 counts show robust increase in the 1st 6 months of cART initiation (p=0.000) and a small gain continues till 4 years. We found that women mounted better CD4 responses (p=0.016). Those with an advanced disease, having lower CD4 counts at initiation of therapy show the highest absolute increases in CD4 as compared to those with less advanced disease (p=0.055), as seen in Graph 1. But, they tend to achieve lesser peak CD4 counts at 5 years. About 79% and 35% patients ended up gaining CD4 counts >250 and >500 respectively at the end of 5 years. Also, OI's are seen to occur at higher CD4's (Graphs 2,3) while patients are on therapy possibly indicating incomplete immune restoration on cART. Patients mounting a better CD4 response tend to have lesser or no OI's at 5 years (p=0.003), but this same does not translate for CD3 or CD8 trajectories drawn for the corresponding groups.

Conclusions: We conclude that responses to cART continue in small amounts after the 1st year, when it is the maximum. The net gain differs with respect to genders and the stage of HIV infection at the initiation of therapy. CD4 counts, though a convenient practical marker for immune reconstitution may not reflect the actual immune status, as OI's are seen to occur even with higher CD4 counts in patients who have been on long term therapy.

No conflict of interest

Abstract: P_04

ARV therapy for women -- efficacy, toxicity, pharmacokinetics

Association between HIV-infection and serum leptin levels

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Introduction: Leptin is an adipocyte-secreted hormone regulating multiple physiological functions, primarily in states of energy deficiency. HIV disease is a a wasting disease associated with deterioration of immune function. Further, HIV-lipodystrophy is associated with selective loss of adipose tissue. Therefore, leptin may play a role in HIV infection. The objective was to study leptin levels in HIV-infected men and women as compared to non-infected individuals and the association of leptin with HIV-disease progression and lipodystrophy

Materials & Methods: After informed consent, HIV-infected and non-infected men and women were recruited from Namakkal district, TamilNadu, India.WHO staging and lipodystrophy details were noted. Anthropometric measurements were obtained and CD4 counts were measured. Statistical analysis: t-test, analysis of variance, Pearson's correlation, and multivariate regression analysis.

Results: Among 297 subjects (45.8% men, 54.2% women), 146 (41.1 % men, 58.9% women) were antiretroviral-naive, 79 (46.8% men, 53.2%women) were on antiretroviral therapy (ART) and 72 (54.2% men, 45.8%women) were HIV- negative. Mean age was 33.5 ±6.5 years, and mean Body Mass Index (BMI) was 22.0 ±4.6 kg/m^2. Mean serum leptin levels were significantly lower in HIV-positive group compared to HIV-negative controls (ART-naïve=18.62± 33.62, ART+ve= 8.98 ±14.13, HIV-ve= 51.89± 69.43 ng/ml, p=0.01). Among ART-naive patients, leptin showed a significant positive correlation with CD4 counts (r=.197,p<0.05) and decreased significantly from asymptomatic to advanced HIV disease groups (r=-.269, p<0.01). Even asymptomatic HIV-positive patients had decreased serum leptin levels compared to HIV-negative controls (29.83±46.57 vs 51.89± 69.43 ng/ml, p=0.059). Among women, the HIV-infected had lower leptin levels (ART-naïve= 26.04±41.05, ART+ve= 13.13±17.71, HIV-ve= 74.36±77.07 ng/ml, p=0.00) with even asymptomatic women having lower levels than HIV-negative women (34.25±50.5 vs74.36± 77.07 ng/ml, p=0.011). Among patients on ART, leptin levels were 5.6 times increased in non-lipodystrophic subjects compared to lipodystrophic subjects, even after controlling for BMI, sex, and age (p=0.090). When correlation analysis was performed for lipoatrophy and leptin, lipoatrophy negatively correlated with leptin in men (r=-.329, p=0.050) and women(r=-.326, p=0.035) separately. Even after controlling for BMI, sex and age, lipoatrophy was significantly associated with decreased leptin levels (p=0.026). Leptin levels were also significantly associated by univariate analysis with BMI in the total study group (r= 0.617, p<0.01), ART-naïve group (p<0.01), and HIV-negative controls(p<0.01). Multivariate regression analysis was performed by taking leptin as dependent variable and BMI, sex and age as independent variables. It was seen that for every unit increase in BMI, the leptin concentration increased 5.3 and 1.1 fold in ART-naïve and ART patients respectively. Even gender wise, leptin showed a positive correlation with BMI among ART-naive (r=.455, p=0.001) and ART women(r=.219, p=0.163).

Conclusions: HIV-infected subjects, in particular women, with lower BMI, lower CD4 counts, advanced HIV disease, and HIV-lipodystrophy had lower leptin levels, suggesting that HIV infection and antiretrovirals may alter leptin levels. The data further suggests that circulating leptin levels reflect body fat content among HIV-infected patients. Adequate nutritional support is needed in the ART centers despite access to therapy, and even among asymptomatic HIV-infected patients.

No conflict of interest

Abstract: P_05

Epidemiology of HIV specific to women and girl

Determinants of HIV risky behaviors among female aged 15-24 years in Rwanda

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Background: Youth have great difficulty getting needed sexual health services. Cultural, social, and economic norms and pressures often put young African women at excess risk for HIV infection. Adolescents often engage in risky behaviors such as drinking alcohol, using drugs, early unprotected sexual activity and the non use of condom.

Risky behaviors might pose a threat to adolescents' future health and the adverse health consequences of these behaviors have been recognized as important public health issues. Demographic and health survey 2010 in

Rwanda showed that the HIV prevalence is higher in women than in men. (3,7%vs 2,2%)
The 2009 Rwanda behavioral surveillance survey (BSS) has shown that the use of condom in adolescents was very low: only 37% reported the use of condom in the last 12 prior to the study. Overall 31% reported ever having sex; Among youth who participated in BSS, 30% self reported having consumed alcohol while 9% marijuana or hashish and 6% reported having tried other drugs.
Although, various studies were carried out on HIV epidemic among youth in Rwanda and elsewhere in Africa, little were done to analyze factors influencing HIV risk behaviors among youth.

Methods: A cross sectional, analytical design was applied to analyze determinants of HIV risky behaviors in adolescents 15 and 24 years attending VCT in 2011 international tradefair in Rwanda. The study was conducted within two weeks from 29th July to 10th August 2011. A face-to-face interview with selected adolescents was conducted to obtain the required information and 234 boys and girls participated in the study.

Results: The majority of our population (100%) reported ever heard about HIV. The HIV comprehensive knowledge of adolescents was 22% and was high in female (29,33% and 18.8% respectively).
The median age at the first sex was 16,5 years and was 15 in female. The use of condom at the first sex was 37,5% . The use of alcohol and other drugs was 41%, and 5, 17% respectively. Circumcision was done to only 48% of male participants. The overall HIV prevalence was 2, 13%. Female were more likely to have HIV (3, 84%) while in male it was 1, 28%. Considering age groups, the HIV prevalence was high in youth aged 15-19 than in those aged 20-24 years (5, 88%vs 1,09%).
22,11% were classified at low risk, 70% at moderate HIV risk and 7,9% were classified at high risk of contracting HIV. Profession, age and the transactional sex were factors which mostly influenced HIV risky behaviors.(P<=0,05).

Conclusion: Some factors were found being determinants of HIV risky behaviors among them: profession, the age of participants and the transactional sex. Although the poor comprehensive knowledge is known as one of determinants of HIV risky behaviors, its relation with HIV risky behaviors was not statistically significant in our study.

No conflict of interest

Abstract: P_06

Epidemiology of HIV specific to women and girl

Disclosure of HIV serostatus to sexual partners among women in Kisii district Western Kenya

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The prevention and control of HIV infection depends on the success of strategies to prevent new infections and to treat currently the infected individuals. These strategies emphasize the need for disclosing serostatus especially seropositive status among sexual partners, as a pre-requisite for appropriate health care for those infected and an important challenge for behavior change for those with risky sexual behaviours. Serostatus disclosure among HIV infected women is associated with less anxiety, ultimately leading to better psychological health and improved access to HIV prevention, treatment and support programmes. Despite the benefits, the rate of disclosure to sexual partners among women is imperatively low, especially in developing countries where women face difficult challenges with HIV infection. The objective of this study was to establish factors, which determine serostatus disclosure to sexual partners among seropositive women in Kisii Central District.
The study was carried out in Kisii District Hospital. A cross sectional design was used to collect both quantitative and qualitative data from a total of 304 respondents. Quantitative data was collected by use of semi-structured

interview schedule, while qualitative data was by focus group discussions and key informants interviews. The purpose of the study was explained to each eligible respondent and only those who gave informed consent were required to participate. Quantitative data was analyzed by SAS programmes while the qualitative data was analyzed manually. Correlation and logistic regression tests were done in both bivariate and multivariate analysis. Only variables with *P* values ≤ 0.05 were considered statistically significant. Respondents aged between 18-62 years. The majority (79.3%) were married, 48% had only primary education and 61.2% were unemployed. Most of the respondents (92.8%) had been HIV diagnosed between 1 month to 3 years. The biggest proportion of the respondent's sexual partner had gone for HIV testing and 81% had tested seropositive. Prevalence of disclosure to sexual partners among HIV infected women was found to be 67.8%. Disclosure was found to be determined by; length of time the respondent had lived with the sexual partner (OR= 6.20), serostatus of the partner (OR= 2.98), knowledge in the benefits of disclosure (OR=4.88) as well as involvement in social support groups (OR=3.28). The study concludes that, if these determinants are looked in to and appropriate interventions sought, then, level of serostatus disclosure to sexual partners among HIV infected women may notably improve, and so would be the efficiency of HIV prevention and control programs.
The study therefore recommends; the government to design policies in work places that advocate for sexual partners staying together whenever possible, promote VCT and serostatus disclosure among men, designing strategies to increase knowledge in the benefits of disclosure and promotion of social support groups. These findings may be utilized by policy makers in developing mitigating strategies aimed at encouraging HIV infected women in disclosing their serostatus to their sexual partners. Such disclosure may impact positively in prevention and control of HIV infection among sexual partners and ultimately in the general population.

No conflict of interest

Abstract: P_07

Epidemiology of HIV specific to women and girl

Epidemiological characteristics of women after first detection of HIV antibodies at single virology clinic

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Background and aims: Routine HIV testing resulted in increased identification of HIV/AIDS cases, rapid entry into the healthcare system, improved clinical outcomes and decreased transmission rates. Women's risks of exposure may not receive sufficient attention as long as the perception persists that the epidemic is predominantly among young males. Our objective is to describe the characteristics of women shortly after their initial diagnosis of HIV seropositivity, including CD4 count.

Patients and methods: All medical records of HIV infected female patients at virology clinic, central hospital of Tripoli from April 2002 to March 2010 were reviewed and data extracted about marital status, risk behaviours, co-infection, and CD4 count at presentation.

Results: During this period a total of 227 patients were registered, age was ranged from 17years to 75years (mean 35.1year), 48% were married, 25% single, 20% widow, 7% divorced. Husband was the only risk factor in 77%, 75%, and 80% of married, divorced, and widow respectively. In single patients 28% gave history of heterosexual relations, 40% deny any risk behaviour, 3(5%) were nurses. Intravenous drug abuse recorded in 1(1.7%) of single, and 1(2%) of widow patients. In 2002 only 1 patient was registered, then 3, 7, 12, 20, 32, 41, 85 patients in years 03, 04, 05, 06, 07, 08, 09 respectively, 25 patients registered during 1st quarter of 2010. 22(9.7%) were HCV antibody positive, 5(2%) were HbsAg positive. CD4 count was known in 216 patients; <100 in 33(15%), 100-350 in

97(45%), 350-500 in 35(16%), and >500 in 52(24%).

Conclusions: Women are increasingly at risk of HIV transmission because they are not aware of risks, do not protect themselves but that risk is under-reported and under-recognized, policy-makers can develop better prevention and care programs.

No conflict of interest

Abstract: P_08

Prevention of HIV transmission specific to women and girls

Knowledge, attitudes and behaviours regarding vaginal practices in Zimbabwe: a qualitative exploration with urban women and men

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Introduction: Vaginal practices (VPs) include all practices and products used to cleanse, dry, or tighten the vagina. VPs of different types are commonly performed by women worldwide. Abrasive VPs may directly increase HIV risk by causing vaginal inflammation and abrasions. Abrasive VPs may also disrupt vaginal flora and thereby increase risk of bacterial vaginosis (BV); BV is an independent risk factor enhancing HIV acquisition and transmission. Thus VPs may have important direct and indirect effects on women's HIV risk. Our ultimate research goal is to develop a culturally-acceptable intervention on cessation of abrasive VPs for women in Zimbabwe. We undertook this qualitative study to better understand women and men's knowledge, attitudes and behaviours related to VPs.

Materials and Methods: Participants included women seeking family planning services at a large hospital and men recruited from shopping centres in urban Harare, Zimbabwe. Ten in-depth interviews (IDIs) and 3 focus group discussions (FGDs) of 7-10 participants each were conducted among women who reported abrasive VPs in the last three months. Five IDIs and 2 FGDs were conducted among women who did not report abrasive VPs in the last three months. Five IDIs and 3 FGDS were conducted among men. Ethical approval was obtained from all participating institutions and all IDIs and FGDs were conducted in Shona. IDIs and FGDs were recorded, transcribed, translated into English and analyzed manually using framework analysis. All IDIs and FGDs were independently coded by at least two staff members. Common responses were grouped and coded into emerging themes.

Results: According to both men and women, the primary reason that women perform VPs is to create a tight and dry vagina to please men sexually. Both men and women stated that VPs help to ensure men's faithfulness. Very few participants thought women performed VPs for their own sexual satisfaction. Many women directly stated that they did not like these practices and only engaged in them to preserve their relationships. Men and women discussed the cultural value of VPs to older generations, but some reported that perhaps these practices should not be held in such high cultural regard. Most female participants were aware of the dangers of VPs, but many men were not aware of potential negative health effects. Men overall reported feeling comfortable with women stopping VPs once the potential harmful consequences were explained, but some men did not approve of women stopping these practices because of the expected effect on their enjoyment of sex. Women expressed mixed feelings about stopping VPs, primarily citing fear of losing sexual partners as a consequence.

Conclusions: In this qualitative study, women appeared to perform VPs predominantly to

enhance their partner's sexual satisfaction and thereby to preserve their marriages. Upon learning more about the negative health effects of VPs, men were largely supportive of women stopping VPs. Women generally disliked performing abrasive VPs but were comfortable stopping only if their fears about relationship dissolution could be assuaged. These formative results are critical for shaping a future intervention focused on cessation of abrasive VPs.

No conflict of interest

Abstract: P_09

Prevention of HIV transmission specific to women and girls

Risk factors contributing to HIV vulnerability of immigrant women of South Asian descent in the greater Toronto area (GTA)

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Background: This doctoral thesis focuses on HIV-positive South Asian immigrant women in the Greater Toronto Area (GTA) in order to better understand the factors that increase women's vulnerability to HIV infection. The main objective of this study is to explore how male power in South Asian communities, legitimized by hegemonic masculinity contributes to South Asian women's risk of being infected with HIV. Informed by Connell's social theory of gender (1998, 2009), this study has attempted to explain how social norms interact with both personal beliefs and social structures (power relations, emotional relations, and gendered division of labour) to generate different constraints that influence South Asian immigrant women's risk for HIV.
There is scarcity of published research on HIV/AIDS-related issues among South Asian women in Canada, particularly those in the GTA. While a few studies identified structural factors contributing to and/or affecting the HIV risk of South Asian women, they fail to explain how structural factors influence individual behaviour, particularly sexual behaviour. This dissertation has attempted to fill that gap.

Materials & Methods: This study followed the principles of community based research, with the researcher having a working relationship with the Alliance for South Asian AIDS Prevention (ASAAP) in the early stages. The study sample consisted of 11 HIV-positive South Asian immigrant women to Canada and 1 second-generation South Asian woman ranging in age from 28–50 years, residing in the GTA. Qualitative study methods in the form of in-depth, one-on-one semi-structured interviews were used. An inductive approach was employed and an iterative process was followed, the primary purpose of which was to allow research findings to materialize from the prevailing themes built in the raw data. Data collection was stopped when saturation was achieved.

Results: The structural relations of power in the lives of these women were accompanied by a belief system that valued male power, thus reinforcing a hierarchical gendered relationship. The women's strong ties to their religious institutions and to their ethnic/religious communities reinforced their beliefs, which in turn reinforced the beliefs of others and helped sustain acceptance of a gender-based social hierarchy, demonstrating the interdependence of the social structures (power relations, emotional relations, and gendered division of labour) and social norms. Through this interaction hegemonic masculinity was legitimized and the women were controlled by the men in their lives and the social norms by which they lived.

Conclusions: All culturally relevant and appropriate HIV-education for this group should be supported by influential social institutions such as places of worship, community and health centres, public schools, and the media.

Key messages should address violence against women, while recognizing and attending to interconnected issues (i.e., housing, poverty, etc.). The study was, by design, GTA specific and as such findings cannot be transferable to South Asian women living with HIV in other contexts. The new data resulting from this study will be helpful for Ontario's HIV prevention strategy, South Asian women, women with HIV, and the field of women's sexual health in general.

No conflict of interest

Abstract: P_10

Prevention of HIV transmission specific to women and girls

The frequency of cesarean delivery among HIV-infected women in the US

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Introduction: Birth rates among women living with HIV/AIDS (WLHA) have varied over the past decade, with certain groups, specifically commercially-insured WLHA, demonstrating an increase in births relative to non-infected women. This indicates that for some, HIV-infection does not appear to be a substantial barrier to reproduction.
Risk of vertical transmission is <1% when recommendations on interventions to reduce perinatal transmission of HIV are implemented; including delivery by elective Cesarean section at 38 weeks' gestation for women with HIV RNA levels >1,000 copies/mL or unknown levels near time of delivery.
The extent to which this particular recommendation is implemented in the US is unknown. European surveillance data spanning between 1997 and 2006 suggest that the majority of WLHA deliver by Caesarean section, with around a quarter to a third delivering vaginally. Therefore, the objectives of this study were to: 1.) Compare the percentages of Cesarean deliveries in 2010 among WLHA and uninfected women in 11 US states; 2.) Determine whether there are variations by state in use of Cesarean delivery; and 3.) Determine what variables are associated with Cesarean delivery among WLHA.

Materials and Methods: 2010 Healthcare Cost and Utilization Project (HCUP) data for 11 US states were utilized, yielding a total of 14.1 million hospital admissions. States included: Arizona, California, Florida, Maryland, North Carolina New Jersey, New Mexico, Rhode Island, South Carolina, South Dakota, and New York. Multivariate logistic regression was utilized in order to identify variables associated with Cesarean delivery among WLHA. Baseline characteristics including age, race (Black, Hispanic, Caucasian and Native American), HCV co-infection, and type of insurance (Medicaid, Medicare, or private) were considered for these analyses.

Results: Of the 14.1 million hospital admissions examined, 1.3 million were admissions for delivery, 1,462 (0.11%) of which occured to WLHA. The mean percentage of deliveries that occurred via Cesarean section in 2010 was greater for WLHA than non-infected women in all states except New Mexico. Significant variations between states were observed and ranged from 25% (New Mexico) to 70% (Florida) for WLHA and 26% (New Mexico) to 41% (New Jersey and Florida) for non-infected women. In five states, the percent of Cesarean deliveries occurring to WLHA was ≤50% (Arizona, New Mexico, Rhode Island, South Carolina and South Dakota). WLHA who were admitted for delivery were significantly older than non-infected women (29.6yrs vs 28.4yrs, p<.0001), but the only variables associated with increased odds of delivering via Cesarean section were Black race (OR 1.28; 95% CI 1.03-1.59) and/or having private insurance (OR 1.39; 95% CI 1.05-1.83).

Conclusions: In general, the percentage of deliveries that occur via Cesarean section appears higher among US WLHA than non-

infected women. However, these percentages are lower than published estimates for other developed regions of the world. As HIV-1 RNA viral load and maternal utilization of anti-retroviral therapy (ART) at birth could not be ascertained, whether these lower percentages of Cesarean deliveries are the result of a higher proportion of vaginal deliveries due to effective ART that decreases plasma viral load to undetectable levels requires further assessment.

Conflict of interest : financial relationship(s): Employee and Shareholder: Abbott

Abstract: P_12

Prevention of HIV transmission specific to women and girls

Reducing HIV risk of women who use drugs: how and why women use drugs differently

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Background: Harm reduction is a key strategy for prevention of HIV infections among women who use drugs, yet it is steeped in a history based on gender assumptions, or it may ignore gender altogether. Gender is also often ignored in research and policy on drug use. In order to understand drug use patterns and their associated risks, and create effective harm reduction practices, it is critical to evaluate drug use through a gender-based lens.

Methods: The Gender and Drug Use Study, a partnership between the University of Toronto and South Riverdale Community Health Centre (SRCHC) explores drug use patterns including prescribed and non-prescribed drugs, reasons for use, and potential gendered practices in drug use. This study explores these gender differences, drawing on pre-existing research conducted across Canada. The study merges a quantitative research model with a community based participatory research approach. Eight self-identifying drug users were hired and completed an 8 session training program covering research basics, biases and assumptions, ethics, personal safety and boundaries, triggers, drugs and drug classifications and managing difficult situations. These community researchers then conducted n=102 interviews with current drug users at SRCHC, with a final count of 53 males and 49 females.

Results: Women were significantly younger (mean 43.9 years compared to 50 years, $p<0.01$) than men, more likely to identify as a sexual minority (24.5% compared to 5.7%, $p<0.01$) and to be receiving government assistance as their primary form of income (83.7% compared to 71.7%, $p<0.05$). The most commonly used drugs in the previous six months among all participants were alcohol, benzodiazepines, crack-cocaine, powder cocaine, codeine, oxycodone, sleeping pills and marijuana. Significantly more women than men reported use of alcohol, codeine and benzodiazepines in the previous six months ($p<0.05$). Women and men reported approximately the same number of lifetime overdoses and overdoses in the last six months. For benzodiazepines and oxycodone, women and men differed in their primary mode of use, with more women popping/eating pills (96.4% vs. 82.4% for benzodiazepines; 64.3% vs. 38.5% for oxycodone) and more men injecting pills in both cases (0% vs.5.88% for benzodiazepines; 25.0% vs. 38.5% for oxycodone), though these differences were not statistically significant, likely due to the small number of users (n=46 benzodiazepine users, n=54 oxycodone users). More men compared to women also identified their primary mode of use as injecting for cocaine, but again this was not statistically significant with the small number of cocaine users (n=48).

Conclusions: Women in the present sample presented different patterns of drug use, including frequency, mode of use and drug of choice. Findings will be used to examine the

existing ways that drug policy and harm reduction reflects the gender dynamics of drug use patterns and better tailor harm reduction services based on gendered use.

No conflict of interest

Abstract: P_13

Prevention of HIV transmission specific to women and girls

Exploring HIV risk among pregnant "second generation" young women in KwaZulu-Natal, South Africa

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Introduction: Despite concerted prevention efforts, young women in South Africa remain at the epicenter of the HIV epidemic. Young South Africans bore witness to an era where their communities were powerfully affected by HIV, yet systematic investigation into how growing up as the 'second generation' of HIV-affected youth and its impact on explosive rates of HIV is lacking. The current study used qualitative methods to explore factors influencing HIV risk in the 'second generation' of young, sexually-active women with recent pregnancies in an HIV hyper-endemic setting.

Materials and methods: We conducted one-time, individual interviews with 35 pregnant women (22 self-reported as HIV-negative and 13 as HIV-positive), aged 18-21, enrolled from a peri-urban antenatal clinic in the Province of KwaZulu-Natal, South Africa. We explored the context and nature of HIV risk behavior, with a focus on novel risk factors that may affect this generation. Interviews were semi-structured and contained open-ended questions on: attitudes towards HIV infection/prevention, sexual risk behavior, substance use, childhood experiences, psychological distress, social relationships and fertility desires. Transcribed interviews were analyzed using NVivo 10. Differences across HIV related experiences, HIV knowledge, and HIV risk by serostatus were explored for these analyses.

Results: Mean age was 19.3 (SD=1.1) and all participants identified as black South African. 60% were currently enrolled in or had completed secondary/high school, while 40% were on leave from or had terminated schooling before completing secondary/high school. All participants identified the father of the baby as a current partner; none of the pregnancies were planned. Most participants reported personal experience with HIV (aside from their own serostatus) that often included an HIV-infected family member, some of whom had died. All participants described knowledge of basic HIV prevention strategies including the importance of using condoms and limiting the number of sexual partners. Most participants described their current partnered-relationships as a very important aspect of their lives. Most participants reported taking regular steps to protect themselves from HIV, however, these reports were inconsistent with their pregnancy and/or HIV status. Thus, despite high HIV knowledge and no desire for pregnancy, implementation of safer sex and pregnancy prevention behaviors remained challenging. Clear differences in HIV knowledge, HIV experiences, or HIV risk behavior did not emerge between HIV negative and positive participants. Some barriers to condom use (principally related to male partner preference) were identified, but participants struggled to identify other factors that negatively impacted their implementation of safer sexual practices.

Conclusions: Participants described first-hand experiences with HIV, which often included death of a family member. Despite these formative experiences, participants were not

able to routinely engage in safer sex practices that would reduce risk of HIV, pregnancy or both. Existing HIV prevention interventions successfully imparted HIV-related knowledge, but barriers to routine implementation of prevention strategies (such as ability to manage partner preferences in a context where partnered relationships are highly valued) exist. Helping young women identify and intervene upon these barriers is essential to implementation of behavioral and biomedical prevention strategies for this high risk population.

No conflict of interest

Abstract: P_14

Prevention of HIV transmission specific to women and girls

Family Planning and Preconception HIV Testing Project

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Background: Routine HIV testing provides the gateway to early detection, treatment, care, and prevention for individuals with undiagnosed infection. The Centers for Disease Control and Prevention (CDC) recommend routine HIV screening as part of health care practices for all individuals age 13-64 which includes women of reproductive age. The Family Planning Council (FPC) servicing the southeast region of Pennsylvania services approximately 125,000 females of reproductive age each year and serves as a perfect site for implement of this pilot project.

Materials & Methods: A brief clinic based intervention was developed that promotes routine testing in the preconception period. The intervention, Knowing Healthy Options for Women (Project Know-HOW) represents an adaption of OPTIONS, an efficacious, clinic based HIV risk reduction intervention rooted in the Information-Motivation-Behavioral Skills (IMB) model of health behavior change. The primary outcome was clinic-level testing. Site specific chi-square and multivariable logistic regression analyses examined the provision of unduplicated, quarterly HIV testing services among 18-39 year old female family planning patients during July 2010 through December 2011. The first quarter served as the baseline.

Results: Chi-square analyses revealed significant increases in HIV testing following implementation of Project Know-HOW at site 1 and 2. In contrast, significant declines in HIV testing were observed at site 3. The results of the site 1 logistic regression analysis indicate that, relative to Q1, the likelihood of HIV testing nearly doubled in Q2 (OR 1.97, CI 1.54-2.52) and more than tripled in Q6 (OR 3.31, CI 2.61-4.19). Increases in HIV testing at site 2 were more gradual (i.e., testing rates remained relatively stable during Q1-4, after which they began to increase). By Q6, the likelihood of site 2 patients receiving an HIV test was almost 1.5 times higher than in Q1 (OR 1.48, CI 1.21-1.82). At site 3, patients were 54% less likely to be tested for HIV in Q6 than in Q1 (OR 0.46, CI 0.33-0.65).

Conclusions: Results of this pilot study confirmed the importance of routine HIV testing in the preconception period as many participants engaged in behaviors that place them at increased risk for acquisition of HIV infection. Moreover, the juxtaposition of high rates of self-reported lifetime/recent HIV testing, lower than desired rates of HIV testing in the FPC Title X network, and observed deficits in Pap test knowledge(e.g., almost 25% of patients surveyed believed that the Pap test procedure includes testing for HIV -- or something similar) suggest that some women may over-estimate receipt of testing services. The positive changes seen in the delivery of HIV testing at sites 1 and 2 provide strong support for a larger scale, randomized trial examining the efficacy of PROJECT KNOW HOW.

No conflict of interest

Abstract: P_15

Prevention of HIV transmission specific to women and girls

Women in harmful circumcision and their role in reduction of HIV infections

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As women stand high risk to HIV infection, societies especially in Africa needs to revisit traditional and customary practices that puts women in high vulnerability position. Not until recently, it was discovered that women leaders in female circumcision ceremonies can also be agent of change, and a target group that is useful in the fight against HIV pandemic in local and grassroots communities. As a result many rural communities in Sierra Leone have become aware of Female Genital Cutting as a HIV/AIDS issue through massive awareness caused by women groups that recognized this vulnerability, and are thus making strides to change the status quo. Through support from national and local government institutions, non-governmental organizations, faith institutions and the media, many influential women in the traditional practice of female circumcision ceremonies in rural and grassroots communities have come to the realization that putting an end to these harmful practices is an important contribution in combating the prevalence of HIV. The formation of women solidarity groups across the country have resulted into tremendous awareness on the spread of HIV through FGC in many grassroots communities. Solidarity groups are also reaching more women counterparts especially in remote regions leading to gradual development of grassroots consensus on ending such traditional practice. As rural and grassroots mobilization abounds the issue of FGC and its consequences on HIV/AIDS has become topical unlike before when the practice of FGC was seen as secret society issues and a taboo to discuss in public. This paper will showcase how solidarity groups of women called Sowes who were once instrumental in Female Genital Cutting ceremonies are now playing active role in the campaign against FGC, and how such endeavors is impacting on HIV prevention. In light of this presentation, one will focus on issues such as “what is the relationship between FGC and new HIV infections. How does FGC contribute to new HIV infections? What role does Sowe solidarity groups play in the fight against HIV and what impact has been created? How has the fight against FGC impacted on the spread of HIV infection? What lessons to learn from the Sierra Leone experience? In this paper one may argue on how the intervention of Sowes women groups has impacted the spread of HIV/AID and how their work has prepared local communities against the spread of new HIV infections.

No conflict of interest

Abstract: P_16

Research agenda; what are we doing, what more can/should be done

Gender differences in health related quality of life among people living with HIV on highly active antiretroviral therapy, Northern Ethiopia

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Introduction: Health related quality of life is an important outcome measure for highly active antiretroviral treatment program. In Ethiopia, studies revealed that there are improved qualities of life among adult living with the viruses taking anti retro viral therapy but there is no explicit data showing gender differences in health related quality of life. Thus, the main aim of this study was to assess gender differences in health related quality of life and its associated factors among people living with HIV and on highly active antiretroviral therapy in public

health institutions of Mekelle Town, Northern Ethiopia.

Material and Methods: A comparative cross sectional study was conducted among 494 adult people living with HIV taking ART services in public health institutions in Mekelle town. Samples were allocated proportional to size to ART sites in Mekelle town. Computer generated simple random sampling techniques based on patients unique ART number was applied to select the study participants. Quality of life was measured using the World Health Organization's Quality of Life HIV short form instrument (WHOQOL HIV BREF). Descriptive, independent sample t test, bivariate and multivariable logistic regression analyses were performed. Data were analyzed by SPSS for windows version 16 software. All p values were two tailed and p values of 0.05 or less with 95% CI were set to determine the level of significance.

Results: The mean age of the study participants was 35.5 (SD±8.03) for females and 39.8(SD±7.85) for males. There was a statistically significant gender difference in health related quality of life among people living with HIV on HAART using physical, psychological, level of independence, environmental and spiritual domains and two general QOL items (P< 0.05). Females had low score in all domains when compared to the male counter parts. Large difference was scored in spiritual domain. High score was observed in spiritual/personal belief, and lowest in social relationships domain in both genders. Females who had high perceived stigma were 2.89 times more likely to have poor psychological health as compared to individuals who had low perceived stigma [OR=2.89 95%CI(1.69,4.96)]. The odds of having poor social relationships in young females aged 15-24 were 4.7 times higher as compared to females aged 35-44 [OR=4.7 95%CI:(1.1,20.3)].

C**onclusions:** There was a significant gender difference in all health related quality of life domains except social relationships domain. Public health interventions to improve health related quality of life of PLHIV should take in to account the physical, psychological, social, environmental and spiritual health of PLHIV during treatment, care and support.

No conflict of interest

Abstract: P_17

Research agenda; what are we doing, what more can/should be done

Gender and factors associated with late diagnosis of HIV infection in Brazzaville, Republic of Congo

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Background: Late diagnosis (LD) is an important cause of HIV-related morbidity and mortality in our facilities. We hypothesized that women will less likely be in LD, as they more often attend health care services and are more likely to accept voluntary HIV testing in urban areas in Congo. The aim of this study is to test this hypothesis, through the investigation of factors associated with LD of HIV infection in Brazzaville, Republic of Congo.

Methods: We reviewed basics data of all adults 18 years of age or older newly diagnosed with HIV infection and enrolled in Ambulatory Treatment Center of Brazzaville(ATC-BZV) the last ten years (from June 2002 to June 2012) with CD4 cell counts available. LD for HIV infection was defined as CD4 cell counts <200cells/µL prior or less than six month after antiretroviral treatment initiation. Multivariate logistic regression analysis was used to identify factors associated with LD.

Results: A total of 4162 adults have been enrolled in ATC-BZV the last ten years, 1738 were included in the study based on our criteria, 1183(68%) of them were women and 53% with LD. Of these, we found that 594(50%) women were LD, while 320(58%) men were LD. Being Women, and being west African origin were less likely associated with LD with respectively [Adjust Odds Ratio (aOR): 0.61 95%CI: 0.48-0.79 P<0.001] and (aOR: 0.27 95%CI: 0.11-0.63

P=0.002). LD increased (56%) when biological check began to be performed free of charge (since 2010) but not significantly (aOR: 1.27 95%CI: 0.99-1.67 p=0.053). In the last two years, we observed a decrease of LD in both sexes (55%, 54%).With regards to demographic parameters specifically in women, we observed that marital status of women was associated with LD, 149(58%) in divorced or separated women as opposed to 57(43%) in married women (aOR: 1.6 95%CI: 1.03-2.47 P=0.03) while level of education, unemployment or old age were not associated.

Conclusions: our hypothesis has been verified. In summary, half of the patients diagnosed for HIV are LD and the prevalence remains high. That suggests more aggressive intervention for testing to reduce LD of HIV infection both in women and in men.

No conflict of interest

Abstract: P_18

Research agenda; what are we doing, what more can/should be done

CHIWOS formative phase focus group analysis: self-care is family care for women living with HIV

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Background: With the increased number of women living with HIV and AIDS in Canada there is a call for developing targeted efforts that will improve existing health care services that are aimed at addressing the unique needs of HIV-positive women. However, more information is required in order to develop effective and appropriate services for women living with HIV. In order to achieve this goal, it is critical that HIV-positive women are involved in defining women-centred HIV and AIDS care, and to identify whether features of this definition are shared among the diversity of women living with HIV.

Materials & Methods: Women living with HIV participated in four focus groups held across Ontario (n=25) in order to contribute to the development of a definition of 'women-centred HIV and AIDS care'. Peer research associates (PRAs) co-facilitated focus groups that focused on the participants' experiences of access, barriers and opinions about women specific health related services. The PRAs, research coordinators, and investigators analyzed the focus group data and identified several major themes. In this analysis, the theme 'care, support, and programming for women, children, and family' were identified as the central concerns emerging for women living with HIV in Ontario.

Results: The women emphasized the great importance of both the social and cultural aspects of care. This included the desire to access culturally-specific and other self-care activities that focused on subjective well-being and emotional health. Moreover, programming for women living with HIV must also aim to empower women, enhance their self-esteem and self-determination in all aspects of life, and support them as they navigate systems within and beyond HIV and AIDS service organizations. The women also discussed how their view of health and well-being was intertwined with the health of their children, partners, and family highlighting the importance of developing women-centred services and programs that simultaneously accommodate the health and well-being of both themselves and their children.

Conclusions: Women living with HIV experience barriers to accessing appropriate and effective health care and support services as a result of the current framework for care that does

not reflect their multiple and holistic health-related needs. A uniform approach to programming for people living with HIV exacerbates these concerns for women living with HIV, particularly when gender, social, cultural, and other factors are excluded from the development and service process. Women-centred HIV and AIDS care must be defined and designed by women themselves and must be delivered in an environment that recognize the multiple responsibilities and diverse lived experiences of women living with HIV.

No conflict of interest

Abstract: P_19

Research agenda; what are we doing, what more can/should be done

The SHE programme: a focus on new data on women living with HIV and continuing research challenges

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Background: SHE is a European, multi-disciplinary programme that aims to improve the quality of life of women living with HIV. Ongoing review of new data relevant to women living with HIV provides medical education ('SHE scientific updates') to physicians and identifies continuing data needs. This presentation reviews the most important data identified during 2012.

Material and methods: Data relevant to women living with HIV in Europe were reviewed from five congresses held in 2012: the 2nd International Workshop on HIV and Women (IWHW); the 19th Conference on Retroviruses and Opportunistic Infections (CROI); the XIX International AIDS Conference (IAC); the 52nd Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC); and the Eleventh International Congress on Drug Therapy in HIV Infection (HIV11). PubMed searches for relevant 2012 publications were also conducted. Identified data were critically appraised and prioritised by the SHE scientific faculty, organised into topics, and included in two SHE scientific update slide decks.

Results: In total, 72 publications of interest were identified, including 27 journal articles and 45 congress abstracts. Review of HIV11 data had not been completed at the time of abstract submission. New data were mainly focused on two data gaps previously identified by the SHE faculty: treatment outcomes in women living with HIV, and reproductive choices for women living with HIV. Treatment studies focused on the overall effect of gender on outcomes, with few data on response to specific regimens. Cohort studies of treatment during pregnancy reported additional data on the effects of different factors, including the effect of antiretroviral therapy (ART) on the rate of preterm delivery, but more data are needed, particularly with newer drugs. The effect of hormonal contraceptive use on the rate of HIV infection or HIV progression continues to be explored; results to date are inconclusive. Preclinical studies identified potential mechanisms for an effect on preterm delivery by injectable contraceptives, but overall more high-quality studies are needed, particularly in non-African populations. New data addressing important additional challenges for women with HIV were also reported including data on gender-differences in adherence to ART, psychological effects of HIV, and gynaecological challenges, such as HPV infection and vaccination. New national women-specific treatment guidelines were published in the UK and Spain, highlighting the need for specific treatment strategies for women. Data on other SHE data gaps are still limited and need to be further explored. Such topics include HIV testing strategies affecting women, social and economic factors affecting women's access to care, and treatment strategies and outcomes in older women.

Conclusions: The SHE scientific updates provide HIV physicians with an overview of new data relevant to women living with HIV and how they address established data gaps, to help physicians improve their care and the quality of life of their patients. However, although more

data are becoming available, there is still an urgent need to better understand the differences between men and women living with HIV in a number of areas. More studies should be designed to allow for analysis of gender-specific outcomes as standard.

Conflict of interest : financial relationship(s): The SHE programme is funded by BMS and developed at the discretion of the faculty.

Abstract: P_20

Research agenda; what are we doing, what more can/should be done

Women for Positive Action: a unique international educational initiative addressing issues of importance to women living with HIV

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Background: Women comprise more than 50% of HIV infections worldwide, yet gender-specific data is frequently limited and guidelines for the care of women are lacking. Women living with HIV face unique challenges and often require tailored care to meet their specific needs, enabling them to live fulfilled lives. Established in 2008, Women for Positive Action is a global faculty-led initiative aiming to respond to the need to address the specific concerns of women living and working with HIV.

Materials and methods: Women for Positive Action is a unique initiative made up a fully-integrated faculty of healthcare professionals, community group representatives and women living with HIV from across Canada, Europe, Latin America and South Africa. As a truly international, multidisciplinary initiative the mission of Women for Positive Action is to empower, educate, and support women living with HIV and the healthcare professionals and community advocates involved in their care. Upholding GIPA principles, the Women for Positive Action faculty work together to address current issues facing women living with HIV, both from the perspective of clinicians and women living with HIV.

Results: Since 2008 a broad range of educational resources and events have been implemented in multiple languages including: 35 educational slide kits, 5 community-focussed articles and 19 news articles and commentaries. These have covered topics such as clinical trials, fertility and pregnancy, stigma and discrimination, faith and beliefs, emotional wellbeing, HIV testing and ageing. Materials focus on providing support and recommendations on practical management and are easily accessible to both clinicians as well as women living with HIV. To help raise awareness of the needs of women living with HIV, interactive, case-study based sessions have been held at 3 international congresses, including EACS 2011 and AIDS 2012, as well as a number of national conferences. These used materials from the initiative to discuss practical aspects of care for the challenges facing younger and older women. Women for Positive Action materials have also been made available in many countries and multiple languages through local, in-country, initiatives (these include Argentina, Chile, Denmark, Germany, Italy, Romania and Spain). The group have also published clinical manuscripts in peer-reviewed journals including an opinion piece encouraging involvement of women in clinical trials of HIV1 and a review of the literature discussing reproductive health in women living with HIV2. All Women for Positive Action materials are available for personal use, in multiple languages, through the website: www.womenforpositiveaction.org. Regular updates on the initiative are provided through Twitter (@WFPA_HIV).

Conclusions: Women for Positive Action is a multidisciplinary faculty-led initiative that explores the issues facing women with HIV globally and develops meaningful educational-based support to respond to these needs. Through providing practical materials and events the initiative aims to support those involved in the care of women living with HIV and contribute

towards an enhanced quality of life for this group.

Women for Positive Action is an educational program funded and initiated by Abbott Laboratories.

1. d'Arminio Monforte et al. 2010;24:1091-1094; 2. Loutfy et al. AIDS Care 2012. Epub

Abstract: P_21

Social Aspects --- Mental Health

Evaluation of a psycho-educational prenatal program for women living with HIV

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Introduction: In light of the growing number of women in Canada who are living with HIV and are having children, as well as data indicating low engagement with prenatal programs not specific to women living with HIV, The Teresa Group completed an evaluation of their prenatal program. The prenatal program provides women who are HIV positive and pregnant with support and education, presented by a multi-disciplinary team of professionals from the major hospitals in the city of Toronto. The study helps fill the significant gap in program evaluation and best practices literature in regards to prenatal care for mothers living with HIV.

Methods: A community-based participatory research model was adopted for this study. Data collection tools included focus groups with program participants, attendance data (2004-2011), participant feedback surveys (N=190); and semi-structured interviews with program implementers.
The study focused on the following research questions: What barriers exist for women in accessing prenatal care, and what are their motivations for attending a prenatal program? What has been the impact of prenatal programming on their lives? Has the program reached its target outcomes to enhance engagement with medical practitioners, improve mental health, social supports, and drug adherence?

Results: All survey respondents from 2004 to 2010 who responded to the question 'How would you rate the group' (N=190) provided an overwhelmingly positive review of the program. 81.6% rated the group as 'excellent' and 18.4% reported 'good'. 80% indicated that they 'definitely' received the information they needed. Qualitative data generated further insight into what features of the program contributed towards the mother's improved mental and physical health.
Study participants were invited to produce an audiovisual component of the evaluation, including artwork depicting their prenatal experiences, as well as a video highlighting the evaluation results. This audiovisual work produced will be included with the presentation.

Conclusions: The evaluation provided clear direction for enhanced prenatal support for women living with HIV, and generated evidence of improved health outcomes if women are given a space where they feel emotionally supported and where confidentiality is respected. The program was critical in allowing women to address and support each other through the complex psychosocial dimensions of HIV and pregnancy.

No conflict of interest

Abstract: P_22

Transmission and progression in HIV infected women, role of contraception

Exploring knowledge, attitudes and perceptions of women to prevent risk for STD/HIV transmission

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Background: Morbidity and mortality rates among women in Uganda due to unplanned pregnancies, STD/AIDS infection call for continued research to understand contributing factors and facilitate development of effective prevention tactics. Emergency contraception (EC) is believed to make a considerable impact on the number of unplanned pregnancies and abortions, contributing to a reduction in related morbidity and mortality. However, since EC does not r\prevent STD nor HIV, there is a concern that women may replace condoms. Or other regular birth control methods in favor of EC. There by increasing risk of infection

Methods: A qualitative analysis seeks to determine whether or not women believe that EC would serve as an incentive for condom use, or on the contrary, devalue condom use in favor of the method 120 face to face interviews were carried during a period of one month with women aged 18-45 attending Gynecological/obstetric consults at Mulago HIV center clinic, using a semi-structured questionnaire, knowledge and behavior related to contraceptive methods and STD/HIV prevention were identified as were attitudes and perceptions about EC and condom use

Results: The results obtained suggests that although women are knowledgeable about STD/HIV transmission, the majority of women perceived themselves as having little or no risk of contracting an STD (91.5%) or HIV (93.3%), and consequently are not choosing condoms as their primary birth control method. Overall, women appear to be more concerned with pregnancy than STD/AIDS infection, particularly marked by the widespread perception that women would be less likely to use condom. If they knew that EC excited, citing that EC is easier to use than condoms. As there appears to be a risk of continuous use and or substitution of condoms or other regular birth control methods for EC, educational materials about the method must emphasize correct and continuous condom use as the most effective means of preventing STD/HIV and also reinforce use of EC only in cases of emergency

Conclusions: Requests for EC should be considered as an opportunity for service providers to educate women about the risk contracting STD/HIV in cases of unprotected sex, orient them a to correct condom use and preferably, distribute condoms with EC provision

No conflict of interest

Abstract: P_23

Transmission and progression in HIV infected women, role of contraception

Assessing the risk of substance abuse, family and sexual violence among adolescents

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Objective: This assessment study was done to establish the relationship between physical and psychological violence, exerted by parents, and sexual violence with risk for illicit consumption of alcohol, tobacco and drugs amongst adolescents.

Method: A cross-sectional study using a self-administered questionnaire was carried out with adolescent students in five secondary schools (one in each state in the South-East region of Nigeria). A total of 587 students participated: 59.7% males and 40.3% females, and the age range were between 13 and 19 years of age. Some instruments such as the Performance Dashboards among other components were used to evaluate sexual violence and substance use.

Results: More than 75% of the respondents revealed that they had suffered some form of psychological or physical violence from their parents and elder siblings while about 15% of them reported sexual violence. Analysis showed that psychological violence exerted by either parent or an elder sibling, implied twice the risk for the victims to abuse any of the substances. The proportion of use of the substances was

similar in both sexes. Having suffered sexual violence increased the risk of consuming drugs various times in males; whereby, being a victim of multiple forms of violence within the family increased the risk of consuming any of the substances notably in the female; in comparison to non-victims.

Conclusion: Management protocols and treatment programs for young people who have suffered family and sexual violence should consider adolescence not only as a stage of vulnerability for substance use and abuse but also as a critical time to implement preventive measures.

No conflict of interest

Abstract: P_24

Transmission and progression in HIV infected women, role of contraception

Pregnancy and Contraception: The Perspective of HIV-Positive and Negative Women

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Objective: To understand pregnancy intentions and contraception knowledge and use among HIV-positive and negative women in the prevention of mother-to-child transmission (PMTCT) program in the teaching hospital.

Design: A cross-sectional survey of 236 HIV-positive and 162 HIV-negative postpartum women interviewed within 18 months of their expected delivery date in a public-sector health facility providing PMTCT services.

Methods: Bi-variant analyses explored fertility intentions, and family planning knowledge and use by HIV status. Multivariate analysis identified socio-demographic and service delivery-related predictors of reporting a desire for additional children and modern family planning use.

Results: HIV-positive women were less likely to report wanting additional children than HIV-negative women (8 vs. 49%, P < 0.001), and although a majority of women reported discussing family planning with a health worker during their last pregnancy (HIV-positive 79% vs. HIV-negative 69%, P = 0.0), modern family planning use remained low in both groups (HIV-positive 43% vs. HIV-negative 12%, P < 0.001). Condoms were the most commonly used method among HIV positive women (31%), whereas withdrawal was most frequently reported among HIV-negative women (19%). In multivariate analysis, HIV-negative women were 16 times more likely to report wanting additional children and nearly 85% less likely to use modern family planning. Women who reported making two or less antenatal care visits were 77% less likely to use modern family planning.

Conclusion: Our results highlight success in provision of family planning counseling in PMTCT services. As family planning use was low among HIV-positive and negative women, further efforts are needed to improve uptake of modern methods, including dual protection, in the PMTCT settings.

No conflict of interest

Abstract: P_25

Transmission and progression in HIV infected women, role of contraception

Few HIV-positive women report sexual activity: An analysis of sexual behaviours of women living with HIV enrolled in the OHTN Cohort Study

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Introduction: Women living with HIV are an understudied population, yet comprise one quarter of all HIV+ people in Ontario. A better understanding of sexual behaviours and their determinants is required to adequately address issues that are unique to HIV+ women. This analysis aimed to explore the effects of viral load, relationship status and partner's HIV status on the sexual behaviours of women living with HIV in Ontario by analyzing data from those who completed a questionnaire with the OHTN Cohort Study (OCS) in 2010.

Materials & Methods: We analyzed data from the OCS, a longitudinal observational cohort of persons living with HIV in Ontario. Participants were women recruited from specialized HIV clinics and primary care practices. Data were obtained from medical charts, interviews, and data linkage with the Ontario Public Health Laboratories. Analysis was restricted to 405 women interviewed in 2010. Descriptive and standard statistics were used to characterize relationship status and sexual behaviours reported in the past 3 months, and how these varied with partner's HIV status.

Results: The majority of women were heterosexual (92%). 28% (113/405) reported a sexual partner. Sexually-active women were significantly younger (mean age=38.5 years; CI=36.8-40.3) than women who were not (mean age=43.4 years; CI=42.3-44.6) ($p<0.0001$). The majority (81%) of sexually-active women (n=113) had only regular partners, most of which were long-term relationships (12+months). Only 19% reported casual partners. 9% did not report vaginal/anal intercourse. Among women who did (n=91), for 36%, her partner was also HIV+. Women were more likely to use a condom with casual partners ($p=0.06$), or with HIV-/status unknown partners ($p<0.01$). Of those who had intercourse with a discordant HIV-status partner, 43% (25/58) reported unprotected sex and of these, 74% had undetectable viral load (VL). Only 6% of sexually-active women reported unprotected sex with a discordant HIV-status partner when their viral load was detectable.

Conclusions: These findings establish an important first step to understand the factors that affect sexual health choices of women living with HIV in Ontario, for which there is little current data. Very few women living with HIV are sexually active, and most who are have regular, long-term partnerships with HIV- men.

No conflict of interest

Abstract: P_26

Transmission and progression in HIV infected women, role of contraception

HIV infected women in the Nordic countries - focus on fertility, sexuality, menopause and aging

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Introduction: The introduction of highly active antiretroviral therapy (HAART) has transformed the lives of HIV infected individuals. With life expectancies approaching those of HIV uninfected individuals, and with the decline in morbidity, there is an increasing number of HIV affected couples who would like to have children. To minimise the risk of horizontal transmission (in case of HIV serodiscordance) and of vertical transmission (if the woman is infected), there is a need for advice and help regarding conception. HIV infected individuals seem to have an increased risk of infertility / subfertility, though data are scarce and partly inconsistent. The demands for assisted reproductive treatments in HIV infected patients are largely unknown. This study´s aim is to reveal the issues that exist among HIV infected women in the Nordic countries (Denmark, Finland, Norway and

Sweden), regarding fertility, sexuality, menopause and aging - and hopefully to erase the differences in treatments offered among the countries.

Materials and Method: The study was designed as a prospective cohort. A questionnaire regarding fertility, sexuality, menopause and aging, was handed to all HIV infected women over the age of 18, at all the outpatient clinics in the departments of infectious diseases, in Denmark. The questionnaire was developed after studying existing material on the subject. A trial of 15 HIV infected women was made, to adjust for misunderstandings and defaults. A translation into English, Swedish, Norwegian and Finnish was made, to enable the distribution of the questionnaire in all the Nordic countries, and to ensure as many inclusions as possible, as not all women were fluent in one of the Nordic languages.

Results: All women, above the age of 18 years and HIV positive, were offered to fill in the questionnaire. Most of the women accepted. Seventy percent stated to be sexually active, and 62 percent used contraception. The vast majority of those who used contraception, used condom or condom combined with another kind of contraception (89%). Seventy five percent of the women had one or more children, 7 women stated they had one HIV positive child, most had none and a few didn´t want to answer the question. Most of the women stated they got pregnant through unprotected sex. A large number of women stated that the HIV diagnosis changed their views on children, 27 percent of the women answered that the diagnosis caused them to want children later or ended the child-wish, altogether. Most of the women who answered the questionnaire, still had regular menstruation periods. Of those who had early menopausal symptoms (26 percent), most stated a decreased lust for sex, hot flushes and night sweats.

Conclusion: This study shows, that HIV positive women in the Nordic countries are affected by their HIV infection regarding issues as fertility, sexuality and menopause and aging.

No conflict of interest

Abstract: P_27

Treatment program for HIV infected women (design and implementation)

A longitudinal study to assess postpartum adherence to HIV clinical care among economically, disadvantaged HIV-positive women in Houston, Texas

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Background: Although HIV-positive, pregnant women recognize the importance of adhering to antiretroviral therapy (ART) and clinical care during pregnancy to optimize maternal-infant health outcomes, evidence suggest that continued postpartum adherence to HIV care among this population is suboptimal. Few studies, however, have elucidated factors that might predict poor retention to postpartum care among HIV-positive women.

Methods: HIV-positive, pregnant women are recruited to participate in a longitudinal study from two county clinics in Houston, Texas that provide HIV-specific obstetric care. Eligible participants are patients receiving care at the participating clinics, English or Spanish speaking and in the second or third trimester of their pregnancy. At baseline, the women are asked to complete a survey to assess demographic, psychosocial and behavioral characteristics. Follow-up occurs within six months of delivery which consists of re-administration of the baseline survey in addition to a qualitative interview which aims to obtain more descriptive information related to adherence to postpartum care that may not have been captured through quantitative instruments.

Results: As of October 1, 2012, 28 women are enrolled in the study. The sample thus far is 81.48% African American (n=22), 14.81%

Hispanic (n=4) and 3.70% Caucasian (n=1). The mean age of women in the sample is 29.48 years. At baseline, the mean CD4 count and viral load were 494 cells/mm^3 and 16142 copies/mL, respectively. To date, 21 women have given birth. Postpartum follow-ups have been completed by 33.33% (n=7) of participants; 18.52% (n=5) have not returned to the clinic for their postpartum exams; 25.92% (n=7) have not yet had their scheduled postpartum exam; and 7.41% (n=2) were not located at their postpartum appointments.

Conclusions: Preliminary results suggest that our sample reflects the disproportionate rates of HIV infection among economically disadvantaged, minority women of childbearing age in the Southern US. Based on our short evaluation period, findings suggest that postpartum follow-up, for women in this study, is suboptimal. Data from the quantitative and qualitative assessments will be used to develop a pilot intervention designed to improve retention to postpartum care among HIV-positive women. Because women may be more receptive to learning about adherence to HIV care during pregnancy, particularly to reduce perinatal HIV transmission risks, pregnancy may serve as a critical time period for health care providers to educate women on the importance of the continuity of HIV care.

No conflict of interest

Abstract: P_28

Mobility: A critical challenge for HIV prevention in intervening residence based female sex worker (RFSW)! Could be translated as opportunity through peer and power network!: Bangladesh experience.

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Background: In Bangladesh HIV prevalence remains low (<1%) among FSWs .Around 40,000 hotel & residence based FSWs are operating countrywide out of 74,300 FSWs. Significant mobility across settings makes it difficult to consistently reach RFSWs. With brothel eviction, frequent raids in hotels, public soliciting sites, sex-workers and power structure/madams/pimps found residences as safer sex-trade venues. Residence-based interventions are comparatively newer and having a risk of being under served for their hidden and transitional nature. Research was done to understand operational dynamics of residence-based sex-trade and feasible HIV interventions.

Methods: A descriptive mixed method study done among 195 RFSWs in two districts (100 in Sylhet, 95 in Dhaka) in 2008 under GFATM grant. Conducted 45 in-depth interviews with RFSW; 43 key-informant interviews with NGO-staff, National AIDS/STD Program personnel, power structure of sex-trade (madams, pimps), law enforcers, and regular clients.14 focus group discussions) with RFSWs, peer educators(PE), service providers conducted. Moreover, quantitative survey was conducted among 195 RFSW.

Results: Mobility revealed as innate characteristic of residence–based sex trade where the pattern is diverse. RFSW not only move to other residences but also to hotels within and outside districts. About half of RFSWs in Dhaka, one-third in Sylhet sold sex in hotels. 15% of both site RFSWs sold sex in street setting. 75% RBSWs reported condom use during last sex act. > 50% reported of not sharing same residence and sex-act places. About 50% RBFSW possess and use cell phones for sex-trade. Diverse mobility; intra and inter setting is influenced by client flow, economic transactions and security issues.
Network revealed as a precondition for mobility of RFSWs. During movement inside or outside city for sex trade, they try to confirm their safety and financial deal through liable network. They

made close associations and get connected with potential, powerful clients, pimps and SWs. Networking among and between SWs, clients, pimps, power structure are much regular, sustained and stronger.
Intervention not yet entailed well-planned mechanism to address mobility, encountered constraints in reaching and double counting. A mechanism to update mother list can be developed to address this.
As a part of risk of identity disclosure, RFSW & their power structure do not want PE visiting residences with official bags. Similarly, PE preferred small handbook like BCC material to conceal their identity.

Conclusion: In program, challenge of mobility transformed into opportunity by reaching SWs at different setting through representative peers and power personnel. As mobility is controlled and organized by peer and power network, power structure engaged in intervention focusing mobility; safe-sex negotiation and as condom depot. Outweighing double counting, intervention brought sex-workers under service coverage through updating and enhancing the mother-list of sex-workers. In outreach PE now equipped with no-logo bag with small handy flip chart inside. Program created opportunity through scaling intervention with customized service in variant setting/site to intervene whatever setting and site FSWs adopt for professional purpose.

3rd International Workshop on HIV & Women

14 - 15 January 2013, Toronto, Canada

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