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Abstracts

Oral Presentations
Abstract: O_01

Epidemiology of HIV in Women/Girls

Agency Among Women Engaging in Transactional Sex: Implications for HIV Vulnerability

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Introduction: Current discourse on women who engage in transactional sex (TS) moves away from traditional constructions of these women as passive victims of dominant male biased sexual norms. Instead, women are portrayed as active agents who use sexual relationships to shape empowered social identities. What is not well established are the implications women’s agency has for their vulnerability to HIV.

This paper presents the results of two qualitative and quantitative studies in South Africa that explored women’s agency, gender empowerment the prevalence of intimate partner violence (IPV) and implications for vulnerability to HIV.

Methods: A cross-sectional survey was conducted among young women aged 16-24 residing in a peri-urban setting 60km outside Cape Town. The sample size of 270 was calculated based on an estimated antenatal HIV prevalence of 9% in the study area, with a precision of +/- 5% and a design effect of 1.5. Participants were recruited using Respondent Driven Sampling. Data were analyzed using STATA version 10 and RDSAT version 5.6. Only the results pertaining to IPV are reported from these data. Among the same population, Focus Group Discussions (FGDs) were conducted with thirty Black women aged 16-24. Informants were recruited through purposive and convenience sampling. Data were analyzed using content analysis methods.

Results: In the qualitative research, women described their initiation of sexual relationships in a hunting, predatory manner. They claimed to “use” or exploit older men for money, whilst pursuing younger male sexual partners for sexual gratification, “accessorization” and status. Women claimed to provide financially, materially and socially for these younger partners. However, these women also reported minimal control during sex; prioritization of their male sexual partner’s pleasure over sexual health; and a high prevalence of intimate partner violence. The quantitative findings also indicated a high prevalence of IPV among this population, with 85.9% (CI: 84.1-88.1) of survey participants reporting to have experienced sexual or physical violence from a sexual partner in the last 12 months. About a quarter (25.0%, CI: 22.8-27.1) of these participants experienced the incidence of sexual or physical violence more than once in the last 12 months. The high frequency of IPV was associated with a high composite risk score for age mixing and multiple concurrent sexual partnering, both HIV risk indicators.

Conclusion: The manner in which these women initiate their sexual relationships suggests notions of agency and challenges gender norms. However, within the private realm of sex not only do they acknowledge being subservient to norms that perpetuate male sexual dominance, they also report high levels of intimate partner violence, reflecting the limited extent of their agency. The association of high frequency of IPV with high HIV risk behaviors suggests that women’s agency is not protective nor does it circumvent their vulnerability to HIV. The manner in which these women are simultaneously strong and disempowered highlights important opportunities for HIV prevention efforts. Such efforts need to identify aspects of women’s agency that can be harnessed for empowerment that effectively reduces women’s vulnerability to HIV and intimate partner violence.
Abstract: O_02

Epidemiology of HIV in Women/Girls

Regional differences in demographics, antiretroviral use, and virological response to therapy among HIV-positive women in a multisite Canadian cohort

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Background: Women represent one of Canada’s fastest growing HIV-positive populations. The changing face of the Canadian HIV epidemic and the country’s regional differences in antiretroviral therapy (ART) distribution practices, alongside women’s biological and social risk factors for infection, necessitates the need for collection of further data on geographic trends in demographics, risk factors, and treatment outcomes. The objectives of this study are to evaluate the interprovincial differences in demographics, ART use, and virological responses (suppression and rebound) to ART among HIV-positive women across Canada.

Materials & Methods: Eligible participants included ART-naive women enrolled in the Canadian Observational Cohort (CANOC) collaboration who started combination ART on or after 1 January 2000, with at least one follow-up viral load (VL) measurement. Currently, nine cohorts contribute data to CANOC, representing the country’s three largest provinces [Ontario (ON), British Columbia (BC), and Quebec (QC)]. Of note, BC data represents the entire sample of people on ART in the province, while data from ON and QC are based on a selection of clinics. Categorical demographic and clinical characteristics were compared using the Pearson χ² test or the Fisher’s exact test, and continuous variables using the Wilcoxon rank-sum test. Contingency tables and Cox regression were used to determine time to virological suppression (two consecutive HIV-1 plasma RNA measures <50 copies/mL and rebound (>1000 copies/mL after suppression). The primary covariate of interest was province.

Results: In total, 874 women met the inclusion criteria, including 389 from BC (45%), 271 from ON (31%), and 214 from QC (24%). Participants’ median age was 36 years (IQR=30-43) and the median follow up time was 39 months (IQR=20-63). At baseline (prior to ART initiation), the median CD4 count was 199 cells/mL (IQR=110-290) and median viral load 4.7 log10 copies/mL (IQR=4.0-5.0). Provincial variation existed (all p<0.001 unless noted) in age (p=0.025), HIV risk factor, history of injection drug use (IDU), hepatitis C status, presence of a baseline AIDS-defining illness, baseline VL, initial ART regimen, rate of VL testing, most recent VL and CD4, and total follow-up time (p=0.035). In multivariate models, women from ON were more likely to achieve virological suppression than women in BC (AHR=1.25, 95% CI 1.00-1.57), after adjustments for history of IDU, baseline VL, rate of VL testing, and initial third antiretroviral agent (ARV). In terms of VL rebound, women from ON (AHR=0.38, 95% CI 0.21-0.67) and QC (AHR=0.51, 95% CI 0.30-0.87) were less likely to experience rebound compared to women in BC, after adjusting for history of IDU, baseline CD4, rate of VL testing, and initial third ARV.

Conclusions: Defining the differences in the characteristics of HIV-positive women among provinces is an important first step in developing targeted prevention and management programs that will have an impact on the lives of Canadian women. As documented here, women in Canada vary in terms of demographic characteristics and baseline clinical circumstances. Responses to ART also differed by province, indicating
the need for further research exploring these differences.

Abstract: O_03

Epidemiology of HIV in Women/Girls

HIV-positive women from adolescence through menopause accessing care and treatment in Central Africa

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Introduction: The International Epidemiologic Databases to Evaluate AIDS (IeDEA) provides a unique opportunity to examine characteristics of women enrolled from adolescence through menopause in HIV care and treatment.

Material & Methods: Data were obtained from 11,657 HIV+ women at enrollment into 10 HIV treatment centers since 2005 and 41 HIV+ adolescent girls enrolled at 4 treatment centers since 2009 in Burundi, Cameroon, and the Democratic Republic of Congo (DRC) as part of the IeDEA Central Africa database. We examined socio-demographic, behavioral and clinical variables to characterize HIV+ women and adolescent girls.

Results: Of the 11,698 HIV+ women and adolescent girls in the IeDEA Central Africa database, 41 (0.4%) were 12-17 years, 848 (7%) were 18-24 years, 9,381 (80%) were 25-49 years, and 1,428 (12%) were 50 years old or older. About half (54%) of women age 18+ and 73% of adolescent girls entered HIV care through voluntary counseling and testing (VCT) while few women (3%) and no adolescent girls entered HIV care through prevention of mother-to-child transmission (PMTCT). None of the adolescent girls reported ever having been pregnant while 86% (N=10,020) of women reported having one or more births resulting in a live infant. Only one adolescent girl reported being sexually active and she reported condom use. 10% of women perceived themselves to be in discordant partnerships and 39% did not know their partner’s serostatus though only 15% of women reported using condoms with their regular partner. 63% of women and adolescent girls had moderate to severe HIV disease progression classified as WHO clinical stage 3 or 4 at enrollment. Of the 4,793 women with baseline CD4 results, 41% had CD4 cell counts less than 200 cells/mm3 while 30% of the 10 adolescent girls with CD4 results had counts less than 200.

Conclusions: A considerable number of HIV+ women and adolescent girls were enrolled into these care and treatment programs. Though 86% of women reported having children, very few entered HIV care through PMTCT suggesting that there may be missed opportunities for HIV testing and referring seropositive pregnant women to HIV care. Couples VCT, family-centered care and counseling for discordant couples should be considered in this setting given half of women perceived themselves to be in discordant partnerships or did not know their partner’s serostatus. The reality that many clinicians in the Central Africa region rely on WHO clinical staging to inform treatment decisions is reflected in our data given less than half of women and girls had CD4 cell counts at enrollment.
Abstract: O_04

Epidemiology of HIV in Women/Girls

Comparison of HIV-positive women with children and without children accessing HIV care and treatment in the IeDEA Central Africa cohort


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Background. Globally, women comprise half of all people living with HIV, but in sub-Saharan Africa, women are disproportionately affected by HIV. This population is of particular interest as the HIV status of women affects not only their health but potentially, that of their children. The Central Africa region of the International Epidemiological Databases to Evaluate AIDS (IeDEA) gives insight into the population of HIV-positive women accessing care in Cameroon, Burundi and the Democratic Republic of the Congo (DRC).

Material & Methods. Data were obtained from 8,181 HIV+ women at enrollment into 10 HIV care and treatment programs in Cameroon, Burundi and DRC as part of the IeDEA Central Africa database. We used chi-square tests to determine if distributions between women with children and those without children differed in regards to socio-demographic and behavioral characteristics including adherence to antiretroviral therapy (ART).

Results. Of the 8,181 women analyzed, 6,689 (82%) reported having living children, and 1,492 (18%) reported having no living children. The majority of women in both groups entered HIV care through voluntary counseling and testing (VCT) and only 4% of women with children entered care through prevention of mother-to-child transmission (PMTCT). The women with children were older; 22% of these women were 46+ years, as compared to 8% of the women without children (p<.05). Women with children were more likely than women without children to have no formal education (14% vs 6%, respectively) and less likely to have attended university (5% vs 15%, respectively) (p<.05). Women without children were also more likely to be single (58% vs 22%, respectively) and less likely to be widowed (8% vs 27%, respectively) (p<.05). Women with and without children reported nearly equal alcohol usage; approximately 69% of both groups reported never using alcohol, 15% of both groups reported drinking once per month, and about 17% of both groups reported never using alcohol. Of the 5,540 women for which adherence data are available, there was no difference between women with children and without children in self-reported adherence; 95% of women in both groups reported adherence to their regimens.

Conclusions. As women account for a substantial proportion of HIV cases in sub-Saharan Africa, a broader understanding of their characteristics will be beneficial for informing testing, treatment, and support services. Women with children in this setting do not always differ from their counterparts without children, but they do appear to be older, have lower levels of education and are living with fewer amenities. Additional inquiry into the nuances of women living with HIV in sub-Saharan Africa is necessary to further understand the needs of this population.
Abstract: O_05

HIV prevention for Women

Trial participation disclosure in the CAPRISA 004 Tenofovir gel trial

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Introduction: The recent success of the CAPRISA 004 clinical trial in South Africa, which tested the safety and effectiveness of tenofovir 1% gel, a vaginal microbicide, indicates that microbicides may be a viable female-controlled HIV prevention method. However, interpersonal communication in sexual relationships regarding microbicide trial participation may affect product use among study participants. Thus, it is important to understand interpersonal communication between female gel users and their male sexual partners surrounding gel use in planning for future microbicide research.

Materials & Methods: This nested case-control study was undertaken in real time during the conduct of the CAPRISA 004 clinical trial. Trial participants with confirmed HIV-positive test results (cases, n=72) and a randomly selected, unmatched comparison group with negative rapid results (controls, n=205) were recruited. All participants were administered an in-depth adherence and product acceptability assessment consisting of both quantitative and qualitative components. We examined the quantitative association between partner disclosure of trial participation and participant HIV status. Additionally, we present descriptive findings from the qualitative data related to disclosure and gel use.

Results: Among 277 women enrolled in this study, quantitative data showed no difference in partner disclosure between cases and controls: 75% of cases compared to 76% of controls disclosed their study participation to at least 1 sexual partner (OR = 0.95, 95% CI [0.51, 1.78]). Throughout qualitative portions of the interview, 60% of all participants discussed whether or not they had disclosed their trial participation to their sexual partners (n=167). Approximately 20% of these women said that gel use was easy. Among women who stated that their partner(s) knew of their participation (n=113), about 75% said their partners responded positively or neutrally to their participation and very few (<10%) said that gel use was difficult. Among women who stated that their partner(s) did not know of their participation (n=54), nearly 30% said that they were afraid to disclose their participation to their partner(s) and approximately 40% said gel use was difficult.

Conclusions: Quantitative and qualitative data demonstrated that the majority of study participants were willing to disclose their participation in the gel study to their sexual partner(s). However, there was no evidence in the quantitative data of an association between trial participation disclosure and HIV status. Qualitative data showed that an important minority of participants felt they could not disclose their study participation to their sexual partner(s), and many of these women also reported difficulties with gel use. Therefore, as future microbicide trials and roll-out studies are planned in this population, it will be important to consider the incorporation of a component to help overcome barriers to trial participation disclosure and difficulties with gel use such as partner education, couples counseling, or interpersonal communication skills development.
Abstract: O_06

HIV prevention for Women

Use of Survey and Video to Increase Uptake of Long-term Family Planning Methods in Zambian Cohort in Preparation for HIV Prevention Studies

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Introduction: Phase I/II safety trials for HIV prevention methods, including vaccines and microbicides, must exclude pregnant women due to unknown effects on fetal development. Studies require women use contraception, and increasingly long-term contraception to prevent user failure. The Zambia Emory HIV Research Project recruits HIV discordant couples for an observational study in preparation for vaccine trials. ZEHRP offers family planning (OCP, injection, implant, IUD) to all volunteers, though a previous study showed high failure rates with OCPs. In 2009, ZEHRP began to recruit concordant negative couples in preparation for a Phase II microbicide trial; couples must use long-term FP to be eligible.

Methods: In June 2009, ZEHRP implemented a short survey on parity, current contraceptive use, fertility desires, and whether woman/couple is interested in implant/IUD. Survey was initially administered at all study visits, until couples decided to use implant/IUD or opted for no method. It continues to be administered annually. It is administered at study screening, and ZEHRP offers implants/IUDs to all couples screened, enrolled or not. Couples not enrolled that opt for other FP methods are referred to local clinics. All couples watch a short video on FP methods.

Results: From July 2009 to February 2010, the survey was administered to 1,122 women or couples; 141 implants and 34 IUDs were inserted. During an equal 8 month time period before implementation of the survey/video (October 2008 to May 2009), 4 implants and 2 IUDs were given to women in the cohort. (June 2009 excluded from analysis because survey piloted mid month.)

Conclusions: Use of a simple survey and educational video dramatically increased uptake of implants/IUDs in a large cohort of couples in Zambia. The survey identifies couples that do not want more children or do not want a child in the next 3 years, and allows them to immediately enact that reproductive decision.

Abstract: O_07

HIV prevention for Women

Scaling Up Couples Counseling and Testing in Rwanda National HIV Program

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Background/ Significance: Evidence suggests that the majority of new HIV infections in Sub-Saharan Africa occur within stable cohabiting relationships, and that there are high rates of serodiscordance among heterosexual couples. Couples HIV counseling and testing (CHCT) is one of HIV prevention initiative addressing this gap whereby couples receive joint HIV counseling and testing (HCT) and supported mutual disclosure of their HIV status. CHCT is associated with increased condom use and reduced HIV transmission among discordant couples receiving the intervention.

Program/ Intervention/ Applied Research Description: Since 2003, the National HIV Program recommended that CHCT should be one of the cornerstones of HIV
Prevention interventions. With support from partners, was integrated into both Voluntary Counseling and Testing (VCT) and Prevention of Mother to Child Transmission (PMTCT) programs. High-level government commitment and innovative initiatives such as Performance Based Financing (PBF) and performance contracts with local leaders and health care workers served as impetus for the program success.

Findings/ Results: CHCT has increased significantly in Rwanda. The proportion of male partners who received HIV testing and results through PMTCT has increased from 16% in 2003, to 84% in 2009. Discordant couples identified in PMTCT have increased over time (~2,655-6,085/year); whereas the numbers identified in VCT have been variable (3,215-4,566/year). As scale up of HCT extended to rural areas with lower HIV prevalence, the prevalence of discordance has declined over time, from 6% in 2005 to 2.5% in 2009. The cumulative numbers of discordant couples identified since 2005 are 19,816 and 24,294 from VCT and PMTCT respectively.

Effects of the intervention on prevention behavior: Rwanda is launching a program to promote systematic follow up of discordant couples, including the following prevention interventions: counseling for facilitated disclosure of HIV serostatus between the partners, if it has not yet occurred; routine retesting every three months; family planning services; condom provision; and access to care and treatment for HIV-infected individuals. Monitoring tools are also being employed to document the uptake of HIV prevention services, as well as HIV transmission over time.

Lessons Learnt: Rwanda's national program achieved excellent results in testing couples and identifying discordant couples. These cohorts of discordant couples identified over time warrant systematic, robust follow up interventions and further understanding of HIV Prevention for couples.

Abstract: O_08

HIV prevention for Women

HIV Screening in the Emergency Department: Does Testing Methodology Impact the Refusal Rate in Women Screened?

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Introduction: According to the Centers for Disease Control and Prevention (CDC), if the worldwide incidence of Human Immunodeficiency Virus (HIV) infection continues at its current rate, than infection among women may soon surpass those of men. [1] In the United States (US), women account for approximately 27% of new HIV infections as well as 25% of individuals currently living with HIV.[2] In the District of Columbia (DC), an epicenter of HIV infection with a prevalence rate of 3.2%, Black women are 17 times more likely to be living with HIV/AIDS compared to White women.[3] In 2006, the CDC recommended the implementation of routine HIV screening in healthcare settings, as a response to this recommendation, Howard University Hospital (HUH) implemented and continues to provide routine HIV screening to a largely minority population. In analyzing the data, we seek to identify if HIV screening in women using the opt-out methodology results in fewer refusals, thus capturing a greater proportion of individuals screened.

Methods: Free, rapid HIV screening was available in the Emergency Department to women at least 16 years of age using the OraSure OraQuick Advance® Rapid HIV-1/2 Antibody Test. Confidential and demographic information was obtained and compiled into a database.

Results: Over a four year period, 15,682 women were approached for an oral HIV screening; the ethnic/racial breakdown was
13,082 (84%) Black, 641 (4%) Hispanic, 379 (2%) White and 1,580 (10%) were classified as other. Of the women approached, 4,177 (27%) refused screening. 2,872 (69%) of those who declined did so during the first seven months when the opt-in methodology (OIM) was employed. The remaining 1,305 (31%) declined in the last three and half years with the institution of the opt-out methodology (OOM).

Conclusions: Our data demonstrates that more women declined oral HIV screening when approached in an OIM versus an OOM fashion. Additionally, it suggests that the OOM is more effective in capturing a increased number of women for HIV screening.


Abstract: 0_09

HIV prevention for Women

The impact of expanding access to HAART on fertility intentions, contraceptive use, and fertility among women in an HIV hyper-endemic setting

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Background: Given a paucity of information regarding the impact of expanding access to highly active antiretroviral therapy (HAART) on reproductive decision-making, behaviours, and outcomes of women in HIV hyper-endemic settings, the objectives of this study were: To assess whether use and duration of HAART was associated with (1) fertility intentions (2) contraceptive use and method preference and (3) livebirth incidence among women in Soweto, South Africa.

Methods: We used survey and medical record review data from 751 women (18-49yrs) attending the Perinatal HIV Research Unit in Soweto, South Africa (May-December 2007). 253 women were HAART-experienced (median duration of use=32 months [IQR=28,33]), 249 were HAART-naive, and 249 were HIV-negative. Multivariate logistic regression was used to estimate associations between HIV status, HAART receipt, and (1) fertility intentions and (2) contraceptive use. Livebirth history was determined using person-time methods. Each participant contributed woman-years of follow-up based on date of HIV diagnosis and HAART commencement (as applicable). Multivariate Poisson regression using generalized estimating equations (GEE) was used to estimate associations between HIV status, HAART receipt, and livebirth incidence.

Results: Overall, 44% of women reported intent to have children, with significant variation by HIV status: 31% of HAART users, 29% of HAART-naive women, and 68% of HIV-negative women (p<.001). In adjusted models, HIV-positive women were nearly 60% less likely to report fertility intentions compared with HIV-negative women (for HAART users, AOR=0.40; 95% CI=0.23, 0.69; for HAART-naive women, AOR=0.35; 95% CI=0.21, 0.60), with minimal differences according to use or duration of HAART. Overall, 78% of women reported using contraception, with significant variation by HIV status: 86% of HAART users, 82% of HAART-naive women, and 69% of HIV-negative women (p<.001). Compared with HIV-negative women, women receiving HAART were significantly more likely to use contraception while HAART-naive women were non-significantly
more likely (AOR: 2.40; 95% CI: 1.25, 4.62 and AOR: 1.59; 95% CI: 0.88, 2.85; respectively). Similar patterns held for specific use of male condoms, permanent, and dual protection methods. Compared with the HIV-negative time period, incidence of livebirth was 69% higher in the HAART-naive time period (adjusted relative risk (ARR): 1.69; 95% CI: 1.48-1.93) but 66% lower in the HAART-exposed time-period (ARR: 0.34; 95% CI: 0.23-0.49).

Conclusions: The results revealed that women receiving HAART were more likely to use contraception overall and dual protection in particular, less likely to experience a livebirth, with minimal differences in fertility intentions relative to their HAART-naive counterparts. Overall, HIV-positive women were significantly less likely to report fertility intentions and more likely to use contraception (and condoms in particular) relative to HIV-negative women from the same community. The findings highlight the potential great value and urgent need for improved integration between HIV prevention, testing, and HAART services and sexual and reproductive health (SRH) programming to address the diverse SRH needs of HIV-infected and –affected women in HIV endemic settings. Such integration is essential to better support the rights of all women to be sexually active and safely achieve their reproductive goals, while minimizing HIV transmission risks.

Abstract: O_10

Cohort Studies

Threat to success in women: toxicity and failure. Long-term-results from the Chilean AIDS Cohort (ChiAC)

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Introduction: Very high survival rates have been reported in randomized clinical trials as well as in cohort studies, even those conducted in resource limited countries (RLC). Main reason for change of first HAART is toxicity in most cohort studies, followed by HAART failure. Women are underrepresented in randomized trials and specific results by gender are not always evident in cohort studies and often contradictory. Aim of the study: to compare rates and types of toxicity and rates of failure between men and women in a large cohort study from a single RLC.

Material and Methods: 5,120/7,007 patients nationwide initiating HAART between 2001 and 2007 prospectively followed up (FU) until December 2008 by ChiAC with 18,159 patient/year FU, median 3.6 years/patient; overall survival 90.9%. Baseline characteristics by gender, severe toxicity requiring change of HAART and failure defined as > 2 consecutive VL > 80 copies/ml with no VL < 80 afterwards on same HAART were prospectively registered. OR and CI95 for gender and toxicity and failure through univariate and multivariate adjusted analysis (age, CD4, clinical stage, VL, and third drug) were determined.

Results: Late presentation to HAART was higher among men (48.6% vs 35.9% stage C). 2,121 discontinued HAART (deaths not included), 44.9% of them for toxicity (18.9% of all patients) and 11.4% for failure, even though 18.0% met criteria of failure. Women were more likely to have toxicity (21.8% vs 18.0% - p=0.01); rash, anemia and neutropenia were more frequent among women. Risk for failure was not related to late presentation and significantly higher among women in multivariate analysis (OR 1.35 CI 1.03-1.73)

Conclusions: In this RLC population-based study, we found a high rate of virological success in naïve patients in spite of a large percentage of late presenters. Risk for failure and for toxicity was significantly higher among women, even though late presentation was more frequent in men. More studies are needed to look into the reasons for the high risk of failure and toxicity in women.
Abstract: O_11

Cohort studies

Violence among a cohort of HIV-positive women on antiretroviral therapy in British Columbia, Canada

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Background: Factors that put women at increased risk of violence can also be factors associated with elevated risk for HIV. Although not well documented, these factors can also have implications for women living with HIV, and can compromise HIV-related treatment outcomes and interventions. In this analysis, we sought to examine the prevalence and correlates associated with lifetime and recent violence among HIV-positive women in British Columbia (BC), Canada.

Materials & Methods: Participants included women enrolled in the Longitudinal Investigations into Supportive and Ancillary health services (LISA) cohort, a prospective study of HIV-positive persons on antiretroviral therapy (ART) in BC. Participants were ≥19 years of age and recruited through the Drug Treatment Program (DTP) of the BC Centre for Excellence in HIV/AIDS. Explanatory sociodemographic variables were collected through a comprehensive interviewer-administered questionnaire, and clinical variables were collected through linkages with the DTP. Bivariate analyses compared differences between women who had 1) ever experienced violence with those who had not, and 2) experienced recent violence (within the last six months) with women ever experiencing violence. Violence was defined as being attacked, assaulted (including sexual assault) or suffering any kind of abuse. Multivariate logistic regression models were used to examine correlates of ever experiencing violence and experiencing recent violence.

Results: In total 249 women were included, of median age 42 years (IQR 35-46). One hundred and sixteen women (47%) self-identified as being of Aboriginal ancestry, 62 (30%) were currently in relationships, and 154 (62%) reported stable housing. Two hundred and three women (82%) reported ever having experienced violence, and 44 of these women (22%) reported violence within the last six months. One hundred and twenty-six women (62%) reported experiencing violence before the age of 16. Over half of the women (56%) reported more than five violent episodes. In multivariate analysis, lifetime experience of violence was associated with reporting high stigma (adjusted odds ratio [AOR]=2.18, 95% confidence interval [CI]=1.03, 4.59), previous marijuana and tobacco use (AOR=2.55, 95% CI 1.14, 5.70 and AOR=2.79, 95% CI=1.10, 7.07, respectively), ever having had a drinking problem (AOR=2.82, 95% CI 1.28, 6.23), and ever having received care for a mental health condition (AOR=2.42, 95% CI 1.06, 5.52). Recent violence was associated with current illicit drug use (AOR=2.60, 95% CI 1.14, 5.90) and currently residing in unstable housing (AOR=2.75, 95% CI 1.31, 5.78).

Conclusions: The women in this cohort experience high levels of lifetime and recent violence. Although our data cannot determine whether violence is a predictor or outcome of HIV, these unacceptably high rates of violence demonstrate the need for improved access to targeted services. However, the effects of such programs on the prevalence and outcomes of violence among HIV-positive women will not be optimized unless the broader social and structural contexts within which violence occurs, such as gender inequity and poverty, are also addressed.
Abstract: O_12

Cohort studies

Women with a history of injection drug use at greatest risk for poorer clinical outcomes in a cohort of HIV-positive individuals in Canada

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Background: Women have unique experiences with HIV infection and antiretroviral therapy (ART), yet cohort data examining sex differences in response to therapy and disease progression remain inconsistent, and are likely context-dependent. Importantly, social determinants and gender inequality increase women’s vulnerabilities towards HIV infection. In Canada, women represent one of the fastest growing HIV-positive populations, and notably, injection drug use (IDU) is becoming an increasingly more prominent risk factor among women. This study investigates sex differences in virological responses to ART and mortality amongst HIV-positive IDU and non-IDU in Canada.

Materials & Methods: Participants included persons enrolled in the Canadian Observational Cohort (CANOC) collaboration, a study of HIV-positive individuals initiating combination ART (cART) on or after 1 January 2000. Currently, nine cohorts contribute data to CANOC from the country’s largest provinces: Ontario (ON), British Columbia (BC), and Quebec (QC). Of note, BC data represents all persons on ART in the province, while ON and QC data are from a selection of clinics. To be included in this analysis, participants had to have at least one follow-up viral load (VL) measurement and a known IDU history. Piecewise exponential hazard regression was used to evaluate time to VL suppression (two consecutive measures <50 copies/mL), Weibull hazard regression to determine time to VL rebound (>1000 copies/mL after suppression), and Cox proportional hazard regression to investigate mortality. The primary covariate of interest was sex by IDU status, with the inclusion of a four level sex/IDU variable: male non-IDU (reference), male IDU, female non-IDU, and female IDU.

Results: Of the 3902 individuals included, 818 (21%) were female. The median follow-up time was 37 months (IQR=18-61). At baseline, more women than men had an IDU history (27% vs. 17%; p<0.001). Also, women were younger (median, 36 years vs. 41), had higher CD4 counts (median, 199 cells/mL vs. 180), and lower VL measures (median, 4.7 log10 copies/mL vs. 5.0) (all p<0.001). In multivariate analyses adjusted for age, province, baseline CD4 and VL, VL testing rate, year started cART, and third antiretroviral agent, female IDU and male IDU were less likely to suppress than male non-IDU (AHR=0.51, 95% CI 0.42-0.61 and AHR=0.74, 95% CI 0.66-0.83, respectively) and, in rebound analysis, female IDU (AHR=2.96, 95% CI 2.15-4.08), male IDU (AHR=1.96, 95% CI 1.52-2.53), and female non-IDU (AHR=1.40, 95% CI 1.08-1.83) were more likely to rebound. In time to death analysis adjusted for age, province, baseline CD4, VL testing rate, year started cART, and third antiretroviral agent, female IDU and male IDU were at greater risk than male non-IDU (AHR=1.77, 95% CI 1.22-2.57 and AHR=1.64, 95% CI 1.24-2.16, respectively).

Conclusions: HIV-positive individuals with a history of IDU in CANOC are at heightened risk for poor clinical outcomes. Importantly, female IDU were the least likely to virologically suppress, most likely to experience rebound, and had a greater risk...
of mortality. Further understanding of the intersections between sex and other factors augmenting risk is needed in order to develop approaches to retaining female IDU in care and maximizing the benefits of ART.

Abstract: O_13

Cohort studies

HPTN 064 (ISIS): Identifying and Retaining US Women at Greatest Risk of HIV Infection

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Background: HIV/AIDS is a leading cause of death among young women of color in the US; two-thirds of new infections in US women occur in Black women, despite the fact that Black women constitute only 13% of the US female population. To realize major reductions in new HIV cases among women, evidence-based approaches must be found that reliably diminish HIV incidence in at-risk women. However, scant HIV incidence data exist for US women, impeding the ability to design robust HIV prevention trials. In addition, women considered most at risk for HIV are also some of the most difficult to retain in HIV prevention trials, further hampering the ability to not only define HIV-incidence among women in the US, but to also identify the characteristics that put these women at greatest risk of infection. HPTN 064, the Women's HIV SeroIncidence Study (ISIS), has applied novel methodology to both enroll and retain women at risk for HIV infection in a longitudinal HIV incidence study.

Materials/Methods: Ten US communities with high rates of poverty and HIV seroprevalence located in the following municipalities (Atlanta, Decatur, Baltimore, Newark, New York City, Raleigh-Durham, and Washington, DC) were selected to enroll a large cohort of women at risk for HIV infection. Eligibility criteria included age 18-44 years, residing in a geographically defined “high risk area” (HRA), and reporting at least one behavior related to HIV acquisition, or a recent sexual partner with at least one behavior related to HIV acquisition risk (e.g., partner with incarceration history, drug use, alcohol etc.). HRAs were defined by combining US Census poverty data with state health department HIV prevalence data and using a standardized algorithm to identify census tracts or zip codes where there is a high risk of HIV transmission. Ethnography was conducted within the highest ranking HRAs in each community to identify community gatekeepers and venues where women most at risk congregate. Venue-based sampling was used to recruit women who will be followed six to twelve months to determine HIV incidence. Retention has been monitored continuously throughout the study and has been maintained throughout a variety of approaches, including constant community engagement and presence of study staff, phone and written contacts, in person "door knocking", social media, public transport advertisements, posted flyers and inter-team recruitment workshops.

Results: A cohort of 2,100 sexually active women, median age 29 years was enrolled over approximately 14 months. Race of study participants is as follows: Black or African American 88%, White 8%, American Indian/Native Alaskan 1.7%, Asian 0.3%, Other 5%. Twelve percent of participants were Hispanic. Of the 1785 women who have been in the study for more than 6 months, 92.5% have completed their 6-month follow up visit, and of 512 women who have reached the 12-month timepoint, 90% have been retained in study.

Conclusions: Excellent study retention rates in populations of women from marginalized communities may be attained but require multiple strategies including effective community outreach and collaboration with community organizations.
Abstract: O_14

Prioritizing Care

Association of sex and race with health-related quality of life in patients treated with darunavir/ritonavir-based therapy in the GRACE trial

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Introduction: GRACE (Gender, Race And Clinical Experience) was designed to investigate sex- and race-based differences in outcomes with darunavir/ritonavir (DRV/r; 600mg/100mg twice daily)-based therapy in treatment-experienced patients. We report health-related quality of life (HRQoL) results from GRACE by sex and race over 48 weeks.

Methods: HRQoL was measured by the validated Functional Assessment of HIV Infection (FAHI) questionnaire, which was completed at baseline and Weeks 4, 12, 24 and 48. Subscales included physical (PWB), emotional (EWB), functional and global (FGWB), and social (SWB) well-being and cognitive functioning (CF). Analyses were performed on the observed population.

Results: 429 patients enrolled in GRACE: 66.9% women, 61.5% black, 22.4% Hispanic and 15.2% white. At baseline, total FAHI scores were: overall 118.1 (n=423); women 116.8 (n=283); men 120.8 (n=140); black 119.5 (n=261); Hispanic 114.1 (n=94); white 119.5 (n=64). The overall total FAHI score of the GRACE population improved significantly by Week (Wk) 4 (mean change from baseline, 3.0*; * = P < 0.05). Near-maximum changes were achieved by Wk 12 (7.1*), and were consistent through Wk 24 (7.6*) and Wk 48 (7.2*). Similar patterns of improvement (mean changes from baseline) were observed for both sexes (women: Wk 4, 3.3*; Wk 12, 8.4*; Wk 24, 8.5*; Wk 48, 8.3*; men: Wk 4, 2.4; Wk 12, 4.6*; Wk 24, 5.8*; Wk 48, 5.4*) and all races (black: Wk 4, 3.3*; Wk 12, 8.1*; Wk 24, 8.6*; Wk 48, 8.9*; Hispanic: Wk 4, 1.0; Wk 12, 4.7*; Wk 24, 6.7*; Wk 48, 5.1; white: Wk 4, 4.8*; Wk 12, 6.5*; Wk 24, 5.7*; Wk 48, 4.5); improvements were larger for women and blacks. EWB and PWB showed similar significant changes from baseline as the total FAHI score; FGBW and SWB showed small improvements and CF did not change. Similar trends were seen using intention-to-treat–last-observation-carried-forward analyses.

Conclusions: HRQoL improved rapidly for patients of both sexes and all races with DRV/r-based therapy. Improvements in HRQoL were largest in women and blacks, contrary to some other clinical outcomes observed in GRACE.

Abstract: O_15

Prioritizing Care

Pilot study exploring the association between bone mineral density and lipodystrophy in HIV-positive women taking antiretroviral therapy

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Introduction: The advent of antiretroviral therapy (ART) has been associated with dramatic reductions in HIV-related morbidity and mortality. However, as the life expectancy of persons living with HIV (PLWHIV) has increased over the past several decades, a parallel increase in the prevalence of low bone mineral density (BMD) has also been noted in this population. Reductions in BMD are associated with an increased risk of pathological fracture, particularly in post-menopausal women. The literature has demonstrated a relationship between reduced BMD to both the HIV virus itself, as well as exposure to ART. Interestingly, the signaling pathways involved in the development of low BMD are similar to those involved in the pathogenesis of another ART-related side effect, lipodystrophy. Lipodystrophy is a pathological redistribution of body fat that has been associated with several classes of antiretroviral medications. The noted similarity in pathogenesis of low BMD and lipodystrophy raises the possibility of a relationship between these two adverse events. Most research regarding HIV and BMD has been conducted in men. Therefore, the purpose of this study is to explore the potential correlation between lipodystrophy and reduced BMD in HIV-positive women.

Materials & Methods: Forty-seven HIV-positive women were recruited from Toronto's Maple Leaf Medical Clinic and Sunnybrook Health Sciences Centre. Each woman completed a questionnaire and data collection form that provided demographic information and assessed the presence and severity of lipodystrophy. The HIV Outpatient Study criteria were applied to determine which women experienced symptoms meeting the lipodystrophy definition; women experiencing at least one major body fat change or two minor body fat changes were considered to have lipodystrophy. Dual Energy X-Ray Absorptiometry scans were done and z-scores were used to quantify BMD. A z-score < -2.5 defines reduced BMD in a young population such as ours. Multivariate linear regression conducted to assess for a relationship between lipodystrophy and reduced BMD.

Results: Twenty-five of 47 women met the definition for lipodystrophy. There was no significant difference in age (42 vs. 39 years, p=.42), race (72% vs. 68% were Black), duration of HIV infection (7 vs. 8 years, p=.73), duration of ART (3 vs. 4 years, p=.75), or CD4 count (500 vs. 540 cells/mm3, p=.93) between women with and without lipodystrophy. Similar BMD z-scores at the L1-L4 location (-0.60 vs. -0.52, p=.86), femoral neck (-0.22 vs. 0.05, p=.27) and hip (-0.48 vs. -0.58, p=.83) were found in women with and without lipodystrophy. After adjusting for age (-0.036 per 10 years, p=.22) and race (0.13 for black vs. other, p=.01), multivariate linear regression determined that there was no association between lipodystrophy and femoral neck BMD z-scores (coeff=0.014, p=.74).

Conclusions: There was no significant association between lipodystrophy and BMD z-scores at the femoral neck, hip, or spine. Furthermore, there was no suggestion of a clinically relevant difference in BMD scores between women with and without lipodystrophy, although there was limited power. Future directions should include assessment of lipodystrophy and BMD in a larger population to determine if there is an association between these two side effects of ART.
Abstract: O_16

Prioritizing Care

Higher prevalence of lipodystrophy among HIV infected women receiving antiretroviral therapy in rural India

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Background: As antiretroviral therapy (ART) becomes more available to the HIV infected population in rural areas in India, it is important to determine the prevalence of its long term complications. Therefore, it was proposed to find out the prevalence of lipodystrophy in patients receiving ART and compare the gender differences.

Material and methods: In this cross sectional study, HIV-infected patients on ART, visiting the ART center at Namakkal District Head Quarters Hospital, Tamil Nadu, India, were recruited from February-April 2009. They were on generic first-line fixed dose combinations of ART, provided for free under the national ART program. Sociodemographic information, anthropometric measurements (body weight, height, waist and hip circumference), details of ART regimens and duration of treatment were recorded. Patients’ self-perception of lipodystrophy was obtained using standardized questionnaires and clinically confirmed by the physician at the ART center. An overnight fasting blood was drawn to determine serum lipids levels. Statistical analysis included Chi-square test and t- test.

Results: There were 145 HIV-infected subjects (46.9% males, 53.1 % females) receiving ART for a mean 29.4 months (range, 2–60 months) with 40.6% on zidovudine based regimen and 59.4% on stavudine regimen. Mean age of the subjects was 33.92±7.23 years and mean body mass index was 22.26±4.46 kg/m². Females were younger than males having a higher prevalence in the 24-35 age range (78.3% vs 21.7%; p=0.00) and were more underweight (76.2% vs 23.8%; p=0.167). The mean CD4 count was 143.23/µl at the initiation of antiretroviral therapy. In this study the prevalence of lipodystrophy was 60.69%; 22.72% with lipohypertrophy, 51.14% with lipoatrophy, and 22.72% with mixed pattern. There was a significant difference in lipodystrophy pattern between males and females having a higher prevalence (62.5% vs 37.5%; p=0.004). Prevalence of lipoatrophy was also higher in females (68.9% vs 31.1%; p=0.015) as well as mixed lipodystrophy (17.1% vs 10.6%; p=0.015). There was a higher prevalence of facial atrophy among women compared to men (68.8% vs 31.2%; p=0.029). Women also had a higher prevalence of fat loss in arms (72.2% vs 27.8%; p=0.025), fat loss in buttocks (75 % vs 25%; p=0.051) and fat loss in legs (67.9% vs 32.1%; p=0.210). By univariate analysis, lipodystrophy was directly proportional to age (r=.249; p=0.029) and CD4 counts (r=.448; p=0.006) in women, but not in men. When compared to women without lipodystrophy, women with lipodystrophy had higher weight (49.3±9.1 kg vs 45.9±4.3 kg; p= 0.005 ), BMI (21.5±3.9 vs 20.3±1.9 kg/m²; p=0.003), CD4 counts (660.2±268.9 vs 366.6±116.9 cells/µl; p=0.006), VLDL cholesterol (42.7±56 vs 24.7±11.6 mg/dl; p=0.046) and triglycerides (213.8±280.1 vs 123.8±58.1 mg/dl; p=0.046).

Conclusion: In this study women had a significantly higher prevalence of lipodystrophy than males. Considering that women were more younger and more underweight than men, this study not only highlights the need for development of inexpensive and accessible treatments for the reduction of lipodystrophy in women, but also the need for adequate nutritional support.
Abstract: O_17

Prioritizing Care

Efficacy, Safety and Tolerability of Lopinavir/ritonavir (LPV/r) in HIV-Infected Women: Meta-Analysis of 7 Randomized Clinical Trials through 48 Weeks

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Background: The number of women infected with HIV has increased over the last two decades with recent World Health Organization (WHO) estimates that women comprise 50% of the HIV-infected population. Data on efficacy and safety of antiretrovirals (ARVs) in women are limited. In an FDA meta-analysis, women comprised 21% of overall participants in Phase II-IV HIV studies from 2000-06. Several challenges, including socioeconomic factors and the risk of pregnancy, have led to difficulties in recruiting and retaining women in ARV randomized clinical trials (RCTs). LPV/r has demonstrated safety and efficacy in ARV-naïve and experienced subjects in clinical trials. In most guidelines, LPV/r is the preferred protease inhibitor in pregnancy and a choice for women of childbearing age. This meta-analysis provides needed information regarding the efficacy, safety and tolerability of LPV/r in women.

Methods: For this analysis, 7 RCTs met the following inclusion criteria: prospective studies of adults receiving standard dose LPV/r as part of a 3-ARV regimen with available data from baseline through week 48 on viral load (LOQ*=50 copies/mL), CD4+ T-cell changes, treatment-related adverse events (AEs) and rates of discontinuation. These studies included 492 women (286 ARV-naïve from 6 RCTs and 206 ARV-experienced from 1 RCT) and 1530 men (1137 ARV-naïve from 6 RCTs and 393 ARV-experienced from 1 RCT). Data were analyzed through week 48 for efficacy, safety and tolerability in women compared with men.

Results: Through week 48, virologic response rates (viral load <50 copies/mL, ITT Noncompleter=Failure analyses) were similar between women and men (68.9% and 74.2% in ARV-naïve women and men, P=0.073, and 52.4% and 57.0% in ARV-experienced women and men, P=0.300). Mean changes from baseline to week 48 CD4+ T-cell counts were also similar between women and men (+209 cells/mm3 and +200 cells/mm3 in ARV-naïve women and men, P=0.420, and +138 cells/mm3 and +123 cells/mm3 in ARV-experienced women and men, P=0.253). The incidence of treatment-related moderate/severe AEs was similar in women and men (ARV-naïve: women=34.3%, men=34.9%, P=0.890, ARV-experienced: women=28.2%, men=25.4%, P=0.495). Overall rates of discontinuation due to any reason were higher in ARV-naïve women compared with ARV-naïve men (women=21.7%, men=15.4%, P=0.013); the individual reason of loss to follow-up was also higher in these women compared with these men (women=8.7%, men=4.1%, P=0.004). Overall rates of discontinuation were similar between ARV-experienced women and men (women=23.8%, men=21.9%, P=0.608). Rates of discontinuation due to AEs were higher in ARV-naïve women compared with ARV-naïve men (women=8.7%, men=5.2%, P=0.034) and similar for those ARV-experienced (women=7.8%, men=4.6%, P=0.136).

Conclusions: In this meta-analysis of 7 RCTs that included 492 women receiving a LPV/r-based regimen, there were no significant gender differences in virologic efficacy, CD4+ T-cell count increases or overall rates of treatment-related moderate/severe AEs through week 48. Rates of discontinuation were higher in ARV-naïve women but similar between ARV-experienced women and men. This meta-analysis demonstrates that LPV/r is efficacious, safe and tolerable in both women and men.
Abstract: O_18

Special Issues in Women

National HIV pregnancy planning guidelines developed to assist people living with HIV in Canada with their conception planning and fertility needs

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Background: Improvement in life expectancy and quality of life for HIV-positive individuals in Canada coupled with reduced vertical transmission has led numerous people living with HIV (PLWHIV) to consider conception. However, attempts at conception in the context of HIV may carry the risk of horizontal transmission. Canadian guidelines do not currently exist to assist PLWHIV to conceive safely and access to risk-reducing assisted conception technologies is limited. Our objectives were to comprehensively evaluate relevant literature and derive evidence-based National HIV Pregnancy Planning Guidelines (NHPPG) is to assist PLWHIV living in Canada with their conception planning and fertility needs through the provision of information and recommendations and building stakeholder linkages to improve access to services.

Materials & Methods: These guidelines were developed using a community-based research model and based on the Appraisal of Guidelines Research and Evaluation (AGREE) Instrument. A literature review was undertaken to identify relevant published manuscripts and presented abstracts. Pub Med and MEDLINE databases were searched for published articles in English and French related to HIV and pregnancy and pregnancy planning along with databases from conference proceedings. A multi-disciplinary team of national experts was identified to form an NHPPG Development Team including clinical HIV experts, fertility experts, obstetricians, midwives, social workers, psychiatrists, legal experts, pediatricians, community, PLWHIV, and policy advisors. The Development Team met during four teleconferences and two in-person meetings to reach consensus on the evidence and develop recommendations. Grading of the evidence was carried out using the Canadian Task Force on Preventive Health Care Evaluation of Evidence criteria. Linkages were made with the Canadian Fertility and Andrology Society (CFAS) via a presentation to the CFAS, Society of Obstetricians and Gynecologist of Canada (SOGC), Assisted Reproductive Health Canada Tripartite committee. The NHPPG guidelines will be pilot tested with the official Development Team Representatives of the SOGC, CFAS and the Association of Medical and Microbiology and Infectious Diseases (AMMI) Canada. Additionally, opinion will be sought from international experts.

Results: An NHPPG Development Team of over fifty Canadian experts was assembled. Consensus was reached on the guidelines' conceptual framework, objectives, target audience, issues not addressed, methods and grading for the guidelines, legal and ethical issues, psychosocial and mental health issues, ensuring a healthy mother, child and family, antiretroviral and other drugs in pregnancy planning, options for reducing risk of HIV transmission during conception, fertility issues in the context of HIV and HIV infection control in fertility clinics. NHPPG were developed which are...
Abstract: O_19

Special Issues in Women

Monitoring for birth defects among infants born to antiretroviral-exposed pregnant women: The Antiretroviral Pregnancy Registry


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Abstract

Antiretroviral (ARV) therapy has been instrumental in reducing mother to child transmission of HIV, and earlier indications for treatment will increase the number of women conceiving on ARV. The Antiretroviral Pregnancy Registry (APR) is an international registry that monitors prenatal exposures to ARV drugs to detect potential increase in risk for birth defects through a prospective exposure-registration cohort.

Methods: Clinicians register pregnant women with prenatal exposures to any ARV prospectively (before the outcome of pregnancy is known), report data on exposure throughout pregnancy, and are prompted to provide birth outcome data. Defects are reviewed by a teratologist, and all data are reviewed semiannually by an independent advisory committee. Birth defect prevalence (any pregnancy outcome > 20 weeks of gestation with a defect/livebirths) is compared to both internal and external comparator groups. The external comparator is a population-based surveillance system and internal comparators include rates after exposures during 2nd or 3rd trimester of pregnancy relative to 1st trimester. Statistical inference is based on exact methods for binomial proportions. APR has 80% power and type 1 error rate of 5% to detect doubling of risk for overall birth defects.

Results: From January 1989 through January 2010, the APR has monitored 11261 live births exposed to ARV with 299 birth defect outcomes identified for an overall prevalence of 2.7 defects per 100 live births (95% CI 2.4-3.0). Among the 4954 first trimester ARV exposures, 138 outcomes with defects were reported for a prevalence of 2.8% (95% CI: 2.3 - 3.3). This rate is not significantly different from the population-based surveillance system (2.7%, 95% CI=2.68, 2.76) or the internal comparator of 2nd/3rd trimester exposures (2.5%, 95% CI=2.2, 3.0) (prevalence ratio 1.10, 95% CI=0.88, 1.37). For abacavir, atazanavir, efavirenz, emtricitabine, indinavir, lopinavir, nevirapine, ritonavir, stavudine, and tenofovir, sufficient numbers of first trimester exposures have been monitored to detect at least a two-fold increase in risk of overall birth defects; no
Abstracts

Abstract: O_20

Special Issues in Women

Leptin levels and menstrual function in HIV-infected women in rural India

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Introduction: There is limited data on changes in gonadal function in HIV-infected women. Studies have indicated that leptin may act as the critical link between adipose tissue and the reproductive system. The objective was to study menstrual cycle disturbances as well as leptin and sex hormone levels in HIV-infected women as compared to normal controls.

Material and Methods: HIV-infected and non-infected women were recruited from Namakkal district, Tamil Nadu. Demography and body mass index (BMI) data were collected. The prevalence of short cycles (<24 days), long cycles (>6 weeks), and amenorrhea (no menstruation for 3 or more months) was assessed. Leptin, follicle stimulating hormone (FSH), and estradiol was measured by ELISA. The subjects were classified in accordance with WHO staging for HIV/AIDS. Patients’ self-perception of lipodystrophy was determined. Statistical analysis: Chi-square, ANOVA and Pearson correlation.

Results: Among 161 women, 86 were antiretroviral-naive (ART-naïve), 42 were on antiretroviral therapy (ART+) and 33 were HIV-negative. HIV-infected women had a higher prevalence of long cycles and amenorrhea compared to HIV-negative women (16.93% vs 6.25%, p=0.067). Among the ART-naïve women with amenorrhea, 4.8% were asymptomatic, 4.3% were symptomatic, while 15.4% had advanced HIV disease (p=0.487). All the women on ART who were amenorrheic (n=2) were lipodystrophic (50% lipoatrophy, 50% lipohypertrophy). Also, all the women on ART with long cycles (n=3) were lipodystrophic (75% lipoatrophy, and 25% lipohypertrophy). With regard to hormones, HIV-positive women had lower mean leptin ((ART-naïve = 26.0±41.0 ng/ml, ART+ = 13.1±17.7 ng/ml, HIV-negative = 74.4±77.1 ng/ml; p=0.00) and estradiol levels (ART-naïve = 41.3±40.0 pg/ml, ART+ = 55.1±52.9 pg/ml, HIV-negative = 80.8±55.8 pg/ml; p=0.002) compared to HIV-negative controls. Also, menstrual cycle length was positively correlated with FSH (r=.225, p=0.01). Increase in the length of menstrual cycle was associated with decreased leptin levels in all the groups, but not significantly. However, when mean leptin levels between different cycle lengths were compared, women with amenorrhea had the lowest mean leptin levels (p=0.037). Also, leptin decreased with advanced HIV disease stage in ART-naïve women (r=−.227, p=0.052) and in lipoatrophic women (r=−.326, p=0.035). Leptin did not show significant correlations with sex hormones in HIV-infected women. However, leptin positively correlated with estradiol in HIV-negative women (r=.393,
p=0.047). With regard to anthropometry, HIV-infected women had significantly lower BMI compared to HIV-negative controls (ART-naive= 18.6 ±4.1 kg/m², ART+ = 21.5 ±3.7 kg/m²; HIV-negative= 26.3 ±5.3 kg/m²; p=0.00). Among the hormones, leptin was significantly associated with BMI (r=0.455, p=0.00). Also, a higher proportion of HIV-infected women > 35 years had abnormal cycles compared to those < 35 years old (21.51% vs 2.9%, p=0.007).

Conclusions: A higher prevalence of abnormal cycles was seen in HIV-infected women particularly in young women <35 years. HIV infection per se as well as ART may have an effect on menstruation. The abnormal cycles and lower sex hormone levels may also be due to undernutrition. The relative leptin deficiency or resistance under conditions in which nutritional status is suboptimal such as advanced HIV disease and lipoatrophy may be at least partly responsible for the reproductive abnormalities that occur with these conditions.

Abstract: O_21

Special Issues in Women

Gender and Liver Disease Progression in HIV-Hepatitis C Co-Infection

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Introduction: The Canadian Co-Infection Cohort (CCC) was established to determine the impact of antiviral therapy and HCV treatment on progression to end stage liver disease (ESLD), a growing cause of morbidity and mortality in the post-HAART era. We examine whether gender influences risk of progression of liver fibrosis.

Materials and Methods: HCV-HIV co-infected patients were enrolled prospectively between 2003 and 2009 from 16 centers across Canada. Participants completed questionnaires on sociodemographics, drug use and clinical care and provided blood for biochemical, virologic and immunologic studies every 6 months. An APRI (aspartate aminotransferase (AST) to platelet ratio index) score ≥1.5 was considered to represent significant fibrosis (corresponds to a biopsy score ≥2). The incidence of developing APRI score ≥1.5 among those with an APRI <1.5 at baseline was determined using Poisson count models for confidence intervals (CI) , stratified by gender. Multivariate cox regression models were used to determine time to APRI ≥ 1.5 according to gender and adjusted for age, injection drug use (IDU), alcohol use, CD4 cell count and factors found significant in univariate analyses.

Results: Of 933 HCV-HIV co-infected patients enrolled, 711 (505 men, 206 women) were included in this analysis (168 were excluded for APRI ≥1.5 and 43 for ESLD at baseline; 9 were transgender and 2 had missing values.) Median follow up was 1.5 years for men (IQR 0.8-2.5) and 1.0 year for women (IQR 0.6-2). Mean duration of HIV and HCV infections were 11.6 years for both genders. Baseline CD4 was 393 cells/µL; HIV RNA was <50 c/ml in 55% of cohort participants; 79% were receiving ART at baseline. HCV genotypes and baseline APRI were similar in both men and women. Women were: younger (42 vs. 45 years, p<0.001), more likely to be aboriginal (31 vs. 10%, p<0.001) and heterosexual (87 vs. 74% p<0.001), more frequently had a history of IDU (88 vs. 81%, p<0.05) and less likely to use alcohol (40 vs. 50%, p<0.05). A total of 88 (13%) developed an APRI score ≥ 1.5 during follow-up (9.5/100 person-years; 95% CI, 8.5 to 12.7); 26 women (11.5/100 person-years; 95% CI, 7.4 to 16.4) and 62 men (8.9/100 person-years; 95% CI, 7.8 to 12.5). Although crude rate was higher among women, after adjustment, gender was not associated with fibrosis progression ( aHR, 1.17; 95% CI: 0.64, 2.13). Predictors of developing an APRI score ≥ 1.5 during follow up were; history of IDU (HR 1.92, 95%CI: 1.00, 3.68), and baseline APRI of 1-1.49 (HR 2.39, 95% CI: 1.30, 4.41). Baseline

Reviews in Antiviral Therapy & Infectious Diseases - Volume 1; 2011
Abstract: O_22

Pharmacology in Women

Antiretroviral pharmacokinetics in HIV-positive women with full virologic suppression on current regimens

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Background: Currently, the occurrence and management of adverse events (AEs) is the most important issue in the treatment of HIV. Many studies suggest that HIV-infected women taking ARV treatment have more AEs than men. Understanding the reasons for the differences of AEs in HIV-positive women is vital to the female HIV community as it would lead to the optimization of their care. One potential contributor to increased AE rates in women may be higher antiretroviral concentrations versus men. Although some studies have shown higher antiretroviral concentrations in women as compared to men, data are limited. We conducted a cross-sectional study of HIV-positive women to determine if protease inhibitor and non-nucleoside reverse transcriptase inhibitor drug levels (Cmin and Cmax values) are significantly higher in women as compared to the historical general (predominantly male) population and to evaluate variables associated with higher concentrations.

Materials & Methods: HIV-positive women with virologic suppression (VL<50 copies/mL) on their first antiretroviral regimen were enrolled from 14 sites across Canada. Timed blood samples for Cmin and Cmax were drawn weekly for 3 weeks. Data were collected on demographic characteristics, clinical HIV disease, antiretroviral history and clinical toxicities. The ratio of each individual's median Cmin and Cmax to the published population Cmin and Cmax mean for the antiretroviral was calculated and summarized using medians and interquartile ranges (IQR) and assessed using a Wilcoxon sign-rank. Linear regression models were used to identify predictors of log-transformed Cmin ratio and Cmax ratio, separately.

Results: Data from 83 women enrolled between 2/2007 and 11/2008 were analyzed. Median age was 42 years (IQR=36-48), CD4 count was 490/µL (IQR=380-640) and all participants had viral loads <50 copies/mL. The median duration of antiretrovirals was 3.8 years (IQR=1.8-7.8). Median antiretroviral Cmin and Cmax ratios were 1.17 [(IQR=0.73-2.0), p<0.001] and 0.86 [(IQR=0.59-1.25), p=0.16], respectively. Median (IQR) Cmin and Cmax ratios by drug were: Atazanavir (n=28): 1.14 (0.74-1.75) and 0.68 (0.51-0.84); Lopinavir (n=20): 1.15 (0.79-1.8) and 1.21(0.87-1.52); Nevirapine (n=19): 1.66(1.06-2.14) and 1.01(0.81-1.47);
Efavirenz (n=16): 0.98 (0.7-2.05) and 0.79(0.62-1.25). In the univariate analysis, IDUs had significantly lower Cmin ratios and participants with higher CD4+ count > 200/µL had a higher Cmin ratios. In the multivariable analysis, only IDUs had significantly lower Cmin ratios. No other variables predicted Cmin ratios including race, body weight or age. No variables correlated with Cmax ratios.

Conclusions: Cmin ratios were highly variable within and between antiretrovirals in our HIV-positive female cohort. Median ratios were significantly greater than 1 indicating that the Cmin in the women enrolled in this study were higher than historical control data. No relevant predictors of high Cmin or Cmax were found. A randomized clinical trial is needed to assess the utility of therapeutic drug monitoring (TDM) and antiretroviral drug dose adjustment on the frequency of AEs in women.

Abstract: O_23

Pharmacology in Women

Drug Interactions between Hormonal Contraceptives and Antiretroviral Therapies: A Systematic Review

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Introduction: Theoretical concern exists regarding potential drug interactions between hormonal contraceptives and antiretroviral (ARV) agents used by women with HIV infection. If they occur, these drug interactions could be mediated by effects on intestinal or liver enzymes or P-glycoprotein, and could lead to decreased contraceptive effectiveness, decreases in the effectiveness of the ARV (leading to resistance or HIV disease progression), or increased ARV or contraceptive toxicity. I systematically evaluated whether interactions between ARVs and hormonal contraceptives exist, and whether they result in decreased effectiveness or increased toxicity of either therapy.

Materials and methods: I searched Medline, POPLINE, LILACS, and CENTRAL for studies (in any language) published in peer-reviewed journals from January 1966 to September 2010, for evidence relevant to ARVs and hormonal contraceptives. Because of limited published data, I also searched the US FDA website, abstracts of HIV conferences, pharmaceutical company and US government clinical trials registries, drug prescribing information, and Google for relevant data. I used standard abstraction forms and grading systems to summarize and assess the quality of the evidence.

Results: Some published data from small poor quality studies suggests that pharmacokinetics of combined oral contraceptives (COCs) given as a single dose may be altered by various ARV therapies, primarily nevirapine and ritonavir. Both decreases and increases in ethinyl estradiol and progesterin levels are seen. Several abstracts and unpublished data from pharmaceutical company drug labeling also indicate a potential effect for some ARVs, but study quality is unknown. No data on ovulation and limited, poor quality data on pregnancy in women using antiretroviral therapy and COCs exist. Even fewer data are available on ARV levels or toxicity, or clinical outcomes. Two pharmacokinetic studies showed that depot medroxyprogesterone acetate (DMPA) levels were not affected by several ARVs.

Conclusion: Small suboptimal published studies suggest pharmacokinetics of single dose COCs may be altered by some single ARVs; the clinical significance of these changes is unknown. More definitive data, including clinical outcomes such as ovulation, pregnancy, HIV progression, ARV toxicity, or hormonal contraceptive toxicity in adequately powered studies are needed to make evidence-based clinical recommendations. These studies should include various hormonal methods and combination ARV regimens during long-term administration. The effectiveness of DMPA...
Abstract: O 24
Pharmacology in Women

**Sex steroid hormones influences replication of major HIV subtypes**


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**Background:** HIV is a highly diverse virus with emerging viral diversity associated with different rates of disease progression. It has been reported that there may be gender differences in HIV-1 diversity at the time of infection and that HIV viral load in blood is generally lower in women than in men at similar stages of HIV infection. These observations suggest that there may be significant sex differences in the progression of HIV/AIDS. The proposed research was to determine potential subtype and sex hormone effects on virus replication and transmissibility.

**Methods:** PBMC and monocyte derived macrophages (MDMs) from male and female donors were infected with equal amounts of viral p24 antigen of HIV subtypes A-D and CRF02_AG, CRF01_AE and viral p27 antigen of HIV-2. Virus production was evaluated by measuring p24 and p27 levels in culture supernatants. Similar experiments were carried out in the presence of physiological concentrations of sex steroid hormones. FACS analysis was performed to assess co-receptor levels of hormone treated cells and transmissibility evaluated by transfer of HIV from primary dendritic cells to autologus donor PBMC’s.

**Results:** Replication capacity in both male and female PBMC were observed to occur in the following order without hormone treatment: least square means of Sub B > Sub C > CRF01 > Sub A & D > MN. High levels of replication were observed with certain subtypes treated with progesterone and estrogen, although an opposite effect was observed at high hormone levels. These differences were influenced by the number of R5/X4 molecules of CD4 T-cells. Subtype B and C were transmitted more efficiently than other subtypes while HIV-2 and group O showed delayed transmission kinetics with both male and female PBMC. Subtypes CRF02, B and C (0.2-1.5ng p24) replicated at very low levels in DC and HIV-2 did not replicate in DC but attached to DC receptor before transmission. Similarly, low concentrations of estrogen (140 pM, and 40 pM) and progesterone (32 nM, 1 pM, and 0.5 pM) upregulated HIV-1 replication and high concentrations of estrogen (1.75 mM, 110 nM) and progesterone (64 nM) downregulated HIV-1 replication in MDMs isolated from females and males. The effect of estrogen was more pronounced in MDMs derived isolated females. No significant effect in females or males was observed with testosterone treatment. FACS analysis indicated that there were no changes in CD4 or CCR5 expression in MDMs treated with steroid hormones.

**Conclusions:** Subtypes B and C showed higher replication in PBMC from males and females and were transmitted more efficiently through dendritic cells to male and female PBMC compared with group O and HIV-2. These findings are consistent with increased worldwide prevalence of subtype B and C compared with other subtypes and outlier group O or HIV-2. Sex steroid hormones had variable effects on replication of different subtypes. Steroid hormones estrogen and progesterone seem to modulate HIV-1 replication in MDMs isolated from females and males. MDMs isolated from females exhibited more consistent results of modulation of HIV-1 replication compared to MDMs isolated from males. These findings suggest that subtype, gender and sex hormones may play a role in the replication and transmission of HIV.

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is likely not affected by ARVs and vice versa. However, no adequately powered studies of clinical outcomes or combined long-term toxicity exist.
1st International Workshop on HIV & Women
10 – 11 January 2011, Washington DC, USA

Abstracts

Poster Presentations
Abstract: P_01

Epidemiology of HIV in Women/Girls

Patterns of psychiatric disorders in HIV infected girls aged 15-25 years in Kenya

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Psychiatric disorders frequently occur in HIV infected patients but the reported prevalence rates differ considerably between studies, depending on the stage of infection and the study subjects. Multiple factors among the HIV infected girls are associated with psychiatric disorders including substance abuse, poverty; side effects of some of the Antiretroviral drugs and HIV. Psychiatric disorders among the HIV infected girls lead to poor adherence to medication. There are limited published studies on psychiatric disorders in HIV infected girls.

The aim of the study was to establish the patterns of psychiatric disorders in HIV infected girl aged 15-25 years in Kenya.

A cross sectional study was conducted in Kenya, caretakers and girls were recruited and interviewed using a modified Kiddie-SAD tool. Subjects were screened and scored for psychiatric disorders using variables such as socio demographic characteristics, symptoms/disorders and scoring. WHO HIV staging, CD4 counts, and ARVs regiments were obtained from the medical records. Data was analyzed using SPSS version 14. Test for association was done using the chi square test and binary logistic regression for variables that had significant association with p< 0.05.

Majority of the girls 89.5% had attained primary education and 10.5 % had acquired secondary education. The prevalence of psychiatric disorders among girls was 45.1%. Common types of psychiatric disorders were anxiety (46%), traumatic stress, (7%), Adjustment disorder (6%), Somatisation (5%), Evacuation disorder (3%), while others comprised of 33 %). Psychiatry disorders is a major problem in Kenya.

More health care providers with relevant knowledge and skills are required in psychiatry to be able to handle the scourge. Relevant stakeholders and the government need to collaborate and put strategies in place to protect the girls.

Abstract: P_02

Epidemiology of HIV in Women/Girls

HIV infected mothers of HIV infected children in Western Jamaica

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Background: In Western Jamaica, universal access to HAART was instituted after 2005 and improved outcomes have been documented in the cohort of HIV infected children. We describe the outcomes of the HIV infected mothers compared with their children between 2005 to October 2010 and identify factors associated with improved outcomes.

Materials & Methods: A retrospective descriptive study was conducted on HIV infected children and their mothers enrolled between 2005 to October 2010 at the paediatric HIV clinic at the Cornwall Regional Hospital in Western Jamaica. Children transferred to other treatment sites were excluded and the adolescents transferred to adult HIV clinic were included. Data was collected from existing electronic databases from the adult and paediatric HIV
clinics, social worker, adherence counselor and research nurse intake forms, laboratory database and clinic registers. Socio demographic, clinical, laboratory and outcome data were collected for mother and child and variables were analysed using SPSS version 16 software. Frequencies were generated to tabulate outcomes, clinical demographic and social factors. Chi-Square analysis was used to compare factors influencing outcomes.

Results: Among 81 mothers of HIV infected children 48 (59%) survived, 32 (40%) died, 1 was unknown. Thirty six (44%) mothers received HAART with noncompliance of 9 (24%). The median age of diagnosis among children was 34 months (range 1-167 months; IQR 15, 63) and 85% received HAART. Among 78 mothers 31 (40%) had between 3-8 children before their diagnosis with 32 (41%) discovering their HIV seropositive status upon diagnosis of the child and 8 (10%) having a child after their diagnosis 1 of whom was HIV-infected. At diagnosis of the index child 8 of 50 mothers (16%) had a child who had died, 40 (80%) had uninfected children and 2 (4%) had another HIV infected child. Fifty one mothers of 78 had breastfed, 63 (81%) did not receive antiretroviral prophylaxis, and 93% of these were born before HAART was accessible. Children were more likely not to default care if their mothers were alive (63%) compared with 36% who were orphaned (p=0.008). Among 48 women who survived 63% received HAART and 81% of the 32 who died did not receive HAART (p=0.0001). Seventeen of 25 (68%) deceased mothers with available year of death died before HAART was universally accessible and three of their children demised as teens while on HAART. There was no correlation between immune and virologic outcome of children with maternal outcome measures. Among survivors 8% of mothers compared with their 4% children defaulted care and (10/17) 59% of mothers not on HAART were noncompliant with follow up. Deaths among mothers were 32 (40%) which exceeded that of the children 9 (11%).

Conclusions: Scaling up of ARV reduced mortality among HIV infected mothers of HIV infected children and contributed to fewer defaults from care by the children. The children were more likely than their mothers to be on HAART and less likely to default which suggests care for children is sought more vigilantly than for their mothers.

Abstract: P_03

Epidemiology of HIV in Women/Girls

Prenatal evaluation of HIV-1 antibody test is important diagnostic chance for women in Japan

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Introduction: The awareness of risk about HIV-1 infection for women is low in Japan, while there are many social activities among MSM. Low awareness of HIV prevalence leads to late diagnosis in women.

Material and Methods: The medical record of female HIV-1 infected patients who were seen at an urban national hospital in Tokyo, Japan between October 1995 and October 2010 were reviewed. The information about the reason of HIV-1 antibody test, risk factors, age at the diagnosis, ethnicities, immunological status at diagnosis and other demographic information were obtained and analyzed.

Result: Of all the HIV-1 infected patients of 2961 at the institute, 262(8.8%) were women, the proportion of women showed no significant change in the past 10 years. Regarding the transmission route, 91.6% of patients were heterosexual contact, blood product was 2.5%, intravenous drug abuse was 1.7%, mother-to-child transmission was 0.8% and same sex contact was 0.4%. 36 (13.8%) of patients were found HIV-1 infected at the time of prenatal evaluation. 17.8% of patients were AIDS at the time of diagnosis. The average CD4 at the time of diagnosis was 302+/−249.3. Both ratio of
AIDS and CD4 count at the time of diagnosis showed non-significant difference between female and male patients. Ethnicities of female patients were; Japanese 162 (61.8%), non-Japanese Asian 75 (28.6%), African 21 (8.0%), Caucasian 4 (1.5%). The age of diagnosis was Japanese patients; 36.8+/−13 years and non-Japanese patients; 31.1+/−5.4 years (p<0.005). Patients whose age was over 50 at the time of diagnosis were 27 (10.3%) in Japanese patients while 1 (0.4%) in non-Japanese (p<0.001). The CD4 count at the time of diagnosis of the patients age over 50 was 204+/-182, while younger group was 314+-254.2 (p<0.001).

Conclusion: The prenatal HIV-1 screening test is important chance of the diagnosis for women in Japan. The age of diagnosis was higher in Japanese patients comparing to non-Japanese patients. CD4 count at the time of diagnosis was low in patients age over 50, which suggest late diagnosis in this population.

Abstract: P_04

Epidemiology of HIV in Women/Girls

Genetic Characterization of Human Immunodeficiency virus type 1 among pregnant women in north-central Nigeria and evolution of the Nigerian epidemic


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Introduction: Recent estimates suggest that 16% of the world’s HIV-1 cases are in West Africa. The molecular epidemiology of HIV-1 in the region is complex with the predominant subtypes being A, G, CRF02_AG, and CRF06_cpx. The country with the largest number of HIV-1 infections in the region is Nigeria and the distribution and spread of HIV-1 subtypes in different parts of the country has not been fully described although CRF02_AG and subtype G (HIV-1G) are thought to account for the majority of infections. Also little is known on the cell tropism of CRF02_AG and HIV-1G, yet they together account for a significant 11% of the global HIV-1 infections. To better elucidate the dynamics of the epidemic in Nigeria we characterized the gag and env genes, investigated coreceptor usage potential of viruses from HIV-1 infected pregnant women living in North-Central Nigerian and used bioinformatics tools to estimate the origin and epidemic expansion of CRF02_AG and HIV-1G in Nigeria.

Material and Methods: HIV RNA was extracted from the plasma of 31 HIV-1 positive therapy-naive pregnant women attending antenatal clinics from North-Central Nigeria and HIV-1 gag (p24) and env (C2-V5) cDNA were amplified through nested PCR. While the gag PCR products were sequenced directly, the env PCR products were cloned before sequencing. Co-receptor usage was predicted using env V3 loop sequence-based genotypic prediction algorithms. Evolutionary/temporal dynamics was determined by Maximum likelihood and Bayesian statistical inference, using CRF02_AG and HIV-1G sequences from this and previous Nigerian studies.

Results: Of 28 samples sequenced in both genes, the predominant clades were CRF02_AG (39%) and HIV-1G (32%). Higher predicted proportion of CXCR4-tropic HIV-1G isolates was noted compared to CRF02_AG (p=0.007, Fisher’s exact test). Bayesian analysis showed that the two subtypes originated in Nigeria in the 1980s through multiple entries, with an initial exponential growth to the early 1990’s and a more stable growth to 2007.

Conclusions: This study underlines the genetic complexity of the HIV-1 epidemic
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among pregnant women in North-Central Nigeria, consistent with data from other regions. Predicted subtype-specific differences in co-receptor usage were noted. This is the first study to describe the evolutionary trends of the predominant HIV-1 strains in Nigeria using sequence data from the Los Alamos database. The results from this study may have implications for the design of biomedical interventions and better understanding of the epidemic in Nigeria.

Abstract: P_05

HIV prevention for Women
(Biology/Therapy/Management)

Fertility desires among HIV sero discordant couples in resource limited settings

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Background: According to the 2004/5 HIV Sero Behavioral Survey findings, up to 5% of cohabiting couples in Uganda were found to be living in discordant relationships. When couples are discovered to be living in an HIV sero discordant Relationships, interventions focus on preventing the negative partner from sero converting. In Uganda, just like in any other African country child bearing is a principle goal of any marriage, this relates to the increasing number of discordant couples attending IDI clinic who desire to have children.

Methods: A cross sectional observational survey was conducted among couples in HIV discordant relationships attending the Infectious Diseases Institute (IDI) clinic. A questionnaire was administered to couples in discordant relationships on an individual basis by HIV counselors working in the IDI clinic. Data was analyzed using the SPSS package.

Results: 15.7%(34) of the respondents reported that they did not have any children with their current partners as compared to 84.3% (182) who had children. Respondents were asked on whether they would consider giving birth (again) especially now that they were in a discordant relationship, 33.3% (73) responded yes, 60.6% (132) responded no and 6% (13) were not sure on whether they wanted to give birth or not. The respondents were further asked whether they thought couples in discordant relationships should go ahead and give birth and 29.6% (66) thought they should, 52.9% (118) thought that couples in discordant relationships should not give birth and 17.5% (39) were not sure whether couples in discordant relationships should give birth or not.

Conclusions: The above findings indicate the desire by couples in HIV sero discordant relationships to have children and the urgent need to come up with cost effective and safe ways of supporting them in having babies without exposing the HIV sero negative partner to the risk of contracting HIV.

Abstract: P_06

HIV prevention for Women
(Biology/Therapy/Management)

HIV prevention for women : case of Côte d'Ivoire, from NGOs experience supported by PEPFAR

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Introduction: With a HIV prevalence of 8.6% among pregnant women and 661,000 births per year, Cote d'Ivoire has an estimated 55,000 HIV-infected women delivering per year who need PMTCT services. The national HIV program's strategic plan calls for integration of PMTCT services into antenatal clinics, maternity and
Family Planning units. And a community approach also through the sensitizing of the women, men by campaigns and the media on HIV question and testing.

ACONDA’s extension of decentralized prevention and care for pregnant women and PLWHA is based on a district approach that integrates basic health care, PMTCT, and ART services in maternal and child health centers. In 2009, ACONDA implemented this approach in 100 ANC clinics in the 31 health districts of Côte d’Ivoire.

**Methods:** Health workers were trained. After, the program strategy consisted in coaching the care providers at the sites in VCT techniques with rapid HIV testing for women with unknown HIV status in ANC, labor-and-delivery rooms and Family Planning unit also. Drawing up and spreading simple technical procedures helped the care providers in the implementation of PMTCT. ARV drugs are packed up at the sites to get PMTCT kits ready to be distributed. The combined prophylaxis was offered to HIV-infected pregnant women and their newborns systematically, as recommended by national program, and then she got initial biological exams. Those who were eligible received a readjusted treatment. Those who were ineligible continued the current disease prevention. A psychosocial supports for treatment adherence, was provided by counselors. Nutritional advices were provided to the mother and the follow-up of the exposed child was systematic. A support group helps to identify and resolve problems of disclosure to partner, lost to follow up, etc. A child’s early HIV diagnosis by PCR is made after 6 weeks of postnatal follow up. A reference and counter-reference system links all HIV-infected women to the medical doctors in the reference health centers.

**Results:** From January through December 2009, PMTCT services were integrated into 100 ANC clinics covering 31 districts, with 100 trained health workers. Of 76,431 pregnant women using antenatal services, 69,139 (90.46%) received HIV counseling and testing; 4853 were HIV-positive; and 2768 infected pregnant women (97%) received their test results. 80% of HIV-infected women received the mother and child combined prophylaxis against 68% in 2007. Among the HIV-infected women, 540 were eligible for ART according to the WHO criteria. 10% husband were tested for HIV.

**Conclusions:** HIV prevention is multisectorial including PMTCT which has community approach also, HIV counseling and testing is possible in labor and delivery rooms, with a high acceptance rate in Côte d’Ivoire and providing the combined prophylaxis from the disclosure of test results is essential if we noticeably want to reduce the Mother to child HIV Transmission for the scaling up. But don’t forget involvement of men.

**Abstract: P_07**

**HIV prevention for Women**

**(Biology/Therapy/Management)**

**Involving PLHA in decisions which affect our lives, Challenges and Lesson learned**

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**Objectives:** Empower men and women who were infected and affected by HIV/AIDS to advocate for their rights to information; services and involvement in decision making that affect their lives.

**Methods:**

Care, Treatment and Support is a relatively new initiative of CSG launched in support from World Vision International Nepal. CSG has been providing treatment, Care and Support to financially feeble drug users, IDUs and PLWHIV since its establishment. However realizing the need to extend the project and support PLWHIV from diverse background CSG initiated its Care, Treatment and Support program in the form of Community Home-Based care program. Through the program 30 participant from the target group, drug using background,
community and public health care were trained on community home based care service. The trained CHBC worker was then mobilized in the community with a work plan.

Results:
- New Case identification
- Improvement in the health conditions of patients.
- Networking strengthened within the organizations, Hospital and Care providers working on field of HIV at local and national level.
- CHBC was influential on motivating IDUs + PLWHIV to Drug rehabilitation program.
- PLHAs now have access to information and different services.
- Change in behavior and attitude among service providers and health workers at hospitals while treatment of PLWHIV

Conclusions: Because CHBC uses a multidisciplinary approach and tries to bridge the gap between family/community on the one hand and the health system and services on the other, the full participation and support from both sides is very much needed. Also the input and participation of people living with HIV/AIDS (PLHA) is necessary, to ensure that the planning of activities is relevant in responding to the needs of people.

Abstract: P_08

HIV prevention for Women (Biology/Therapy/Management)

Empowerment through life skill coaching camps/retreats

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Background: AIDS exploits the gaps of gender-based inequalities and social norms entrenched in society, current HIV results from the 2008-09 KDHS indicate prevalence in women age 15-49 is 8.0 percent, while for men age 15-49, it is 4.3 percent. This female-to-male ratio of 1.9 to 1 is higher than that found in most population-based studies in Africa. Young women are particularly vulnerable to HIV infection compared with young men. 3 percent of women age 15-19 are HIV infected, compared with less than one percent of men age 15-19, while HIV prevalence among women 20-24 is over four times that of men in the same age group. These numbers demonstrate a desperate need for integrated and deliberate HIV prevention interventions that address the age, gender and culture-specific needs of women and girls in Kenya.

Materials & Methods: Women and girls need and deserve opportunities that equip them with the appropriate life skills and tools to earn higher incomes and gain economic security aimed at reducing their vulnerability to domestic violence, unsafe sex and other AIDS related risk factors. Embu District youth development initiative currently runs an innovative program intended to empower cross generations of girls and women ranging 15 years to 24years through organizing a series of youth life skill coaching camps and retreats designed and focused on woman centred group sessions through an interactive environment that involves games and team building activities. The session’s builds focus an additional 5 group sessions that focus on: 1) Intergenerational awareness of and skills for preventing HIV infection; 2) Cross-generational communication about and respect for the health of girls and women; career advice and reproductive health concerns. 3) Increasing knowledge about HIV counselling and testing and access to this service.

Results: The girls disclosed more in-depth information about themselves, their aspirations, and their assessment of risk than they would to outsiders. Exploration of effective strategies and interventions that address intergenerational communication about sexual health and HIV prevention among Kenyan girls and women remains very important in empowerment efforts towards reduction and addressing the HIV/AIDS challenge.
Conclusions: Addressing and strengthening intergenerational communication among generations of Kenyan girls and women about sexual health and HIV prevention ensures participants are better equipped to make sexual health decisions, share and accept accurate information about sexual health issues.

Education is a proven catalyst in promoting gender equality and empowering women in protecting themselves in HIV/AIDS, and further more in also in expanding their capabilities with marketable skills and access to economic opportunities through career advancement options.

The Women's programme will contribute to campaigning, advocacy and mobilisation towards achieving Universal Access to HIV prevention, treatment, care and support for women and girls.

Abstract: P_09

HIV prevention for Women (Biology/Therapy/Management)

Initiation of an outreach program at Alouette Correctional Centre for women: an inter-professional collaborative approach to HIV care

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Background: Oak Tree Clinic (OTC) is a provincial tertiary referral centre in Vancouver that provides inter-professional HIV/AIDS care to women, children and families in British Columbia. Alouette Correctional Centre for Women (ACCW) is an open/medium-security facility with a 166-inmate capacity that offers inmates a variety of services including healthcare. The median length of stay is six months. These two organizations recognize the challenges of accessing HIV care for incarcerated women and the difficulties of establishing HIV care after release from corrections. In BC prisons, HIV seroprevalence levels are 10 times higher than in the general population. Women represent a small proportion of the custodial population but the number of women admitted to remand and sentenced custody is growing. During 2001/2002, 777 women (8%) were admitted to sentenced custody and this increased to 1,058 women (11%) in 2006/2007. In the past two years, there has been a rise in the number of HIV positive inmates at ACCW, ranging from two to eight inmates. This is presumably due to the growth of the epidemic; the disproportionate number of marginalized women affected by HIV that are incarcerated and the availability of point of care/HIV serology counseling, testing and diagnosis ACCW does not have the capacity to provide guards to accompany individual women and because of confidentiality they cannot come as a group. The only feasible and timely way to see inmates is for OTC to provide outreach.

Goals: The main objectives of this initiative are to (a) provide improved HIV care for positive/newly diagnosed women; (b) encourage point of care/serology testing and diagnosis; (c) offer continuity of HIV care and address comorbidity; (d) incorporate medication adherence; (e) assist in community transitioning and (f) ensure follow-up.

Methods: In November 2008, OTC initiated the outreach program comprised of an inter-professional team of a social worker, nurse clinician, dietician, pharmacist, outreach worker and HIV specialized physicians. The ACCW visits take place quarterly or as needed. OTC educates and supports the staff at ACCW on HIV, confidentiality/stigma, medication adherence and comorbidity.

Results: There have been eight ACCW visits with 45 inmate consults and seven newly diagnosed women. The inmates have individual OTC visits depending on their medical or social needs. The ACCW staff revealed their new confidence in offering HIV point of care/serology testing because of OTCs support. This may account for the new diagnoses. OTC collaborates with ACCW physicians to manage the complexities of inmates' conditions. The
Abstracts

OTC team works with the inmates, ACCW staff and public to develop strategies for improving medication adherence and reducing resistance risk. Assisting women to transition into the community and ensuring continuity of HIV care is challenging but successful visits post-release occur.

Conclusion: This outreach program saves resources and provides a unique opportunity for OTC to engage and educate inmates and employees. The inmates are welcoming of the program and OTC believes this initiative translates into improved health outcomes. OTC is collaborating with the BC Center for Disease Control to establish a pilot project using mobile phone as a tool to improve women’s health and medication adherence post release.

Abstract: P_10

HIV prevention for Women (Biology/Therapy/Management)

Assessment of quality of antiretroviral therapy in Felige Hiwot Hospital, Bahirdar, Ethiopia (structure, process, out come dimension)

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Background: Every day ,over 6800 persons become infected with HIV and over 5700 persons die from AIDS, mostly because of inadequate access to HIV prevention and treatment services . The estimated number of deaths due to AIDS in 2007 was 2.1 million [1.9-2.4 million]world wide, of which 76% occurred in sub-Saharan Africa . More than two out of three (68%) adults and nearly 90% of children infected with HIV live in Sub Saharan Africa, and there are an estimated 11.4 million orphans, and 15.4 million women living with HIV, in Sub Saharan African countries. Highly Active Antiretroviral Therapy was the breakthrough in the industrialized world, leading to the reduction of mortality and the improvement of quality of life of PLHIV. Antiretroviral (ARV) drugs also significantly lowered the rate of HIV transmission from mother to child. Providing quality ART service is an important task for care providers to increase adherence and to respond to the HIV emergency; however, little is known about the existing quality of ART services in Ethiopia.

Methods: A cross sectional quantitative study which is supplemented with a qualitative research method was conducted from November-December /2007. A total of 422 Adult PLHIV on ART for at least 3 months were the study participants. Data were collected using structured questionnaire, check lists and Semi structured interview guide. After clearing and checking for consistency, data were coded, entered and Univariate & Multivariate analysis were carried out using SPSS version 15.0. Qualitative data were transcribed & narrated under themes.

Results: A total of 422 PLHIV on ART were participated of which over half 247 (58.5%) were females. Among the study participants interviewed 186 (44.1%) were married and 93 (22%) were divorced. Based on the check list, structure & process result reveals, most of the requirements for implementation of ART services were fulfilled. Although, lack of ophthalmoscope in clinical package, absence of confidential counseling room in pharmacy package, lack of separate room, shortage of equipment and supplies, absence of CD4 count machine in laboratory package were seen. Over all client satisfaction rate was 70.9%. The odds of dissatisfaction of females were found to be 1.8 times that of the odds of the dissatisfaction of males [OR 1.889, CI 95% 1.057-3.378]. In relation to adherence to ARV treatment, over all prevalence of adherence at ≥95% requirement by self report method was 92.4%. Patients who were on treatment for 13-24 months were found to be more adherent [OR 8.145, CI 95% 1.032-64.263] than patients who were on treatment for 3-6 months.
Conclusions: The structure and process of ART services almost full fills the minimum requirements for implementation of ART at regional level compared with the guide line. On out come indicators; client satisfaction and adherence of clients to ART were high. However, to achieve the goal of ART and its impact; providing updated & adequate training on comprehensive HIV/AIDS care, increasing number of rooms & staffs trained on ART, giving special consideration to women, addressing functional equipment & supplies in laboratory package, working with religious leaders and community leaders to strengthen adherence status are recommended.

Abstract: P_11

HIV prevention for Women
(Biology/Therapy/Management)

Reducing HIV Transmission through Disclosure of Positive HIV Status: Disclosure Intervention for African, Caribbean and Black Women in Canada

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Background: Failure to disclose HIV positive status to sexual partners is a criminal offense in many countries. Media reporting of prosecutions in Canada is highly racialized with Black communities bearing the burden of most reports. Developing effective strategies to support HIV positive women disclose their status is paramount to prevent secondary transmission and reduce possibility of prosecution. We developed and pilot tested an evidence-based HIV serostatus disclosure intervention adapted to the unique needs and challenges faced by African, Caribbean and Black (ACB) women living in Canada.

Methods: Intervention development process involved:
1) Conduction of an extensive literature review exploring inhibitors and facilitators of disclosure, existing promising models and theories that inform them that could be adapted.
2) Conduction of four focus groups (n=30) and four key-informant interviews with HIV positive women who had not disclosed or were at various stages of the process and their service providers to determine what was promising, relevant and acceptable to ACB women. Data was analyzed thematically using a grounded approach that was informed by critical feminist and race theories.
3) Drafted intervention was reviewed by service providers and pilot tested with women who were contemplating disclosure. Pilot testing was done in 6 organizations, supported by 6 service providers and 4 trained HIV positive peers who had disclosed.
4) Draft intervention was modified based on pilot testing findings and discussions held at a multi-stakeholder expert meeting that included researchers, policy makers, service providers and community members.

Results: Factors influencing disclosure included: Need to relieve burden of silence/secrecy; comfort level dealing with/discussing HIV/AIDS; ability to handle multiple facets of stigma and discrimination; fear of violence and/or having a plan to deal with implications of disclosure e.g. having a safety plan in case of violence; legal requirements/obligations; desire to access more resources; and Physical signs of disease progression/being on treatment. Above information was used to develop a multilayered, step by step intervention, framed within an anti-oppression framework. The intervention provides a framework to guide ACB women and their service providers through the process of disclosure; incorporates appropriate resources and support mechanisms; opens up opportunities for discussion on challenges...
and options available at each step; and helps identify points where withdrawal from the process is possible, recognizing impacts of disclosure environment and that partial disclosure is an option. Twenty 22 HIV positive women contemplating disclose, 6 service providers and 5 HIV positive peers participated in the pilot testing of intervention. Challenges, limitations and gaps identified were discussed at the experts meeting and recommendations and action plans made to strengthen intervention for broader roll out.

Conclusions: An appropriate HIV disclosure model should be broadly applicable, cost-effective and should permit regional and individual adaptations. Our intervention is flexible, culturally-based, tailored to challenges and opportunities faced by ACB women and can easily be incorporated into HIV/AIDS support and care services. Next steps include broader rolling out of intervention across multiple settings and regions across Canada to monitor and evaluate long-term impacts/outcomes to confirm the universal applicability of the intervention.

Abstract: P_12

HIV prevention for Women (Biology/Therapy/Management)

“You don’t exist”: Lesbian, Bisexual, Queer and Transgender Women Living with HIV

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Introduction: The sexual health and HIV needs of lesbian, bisexual, queer and transgender (LBQT) women have been described as invisible, ignored and understudied. The convergence of sexism and sexual stigma may contribute to the dearth of knowledge regarding sexual health among LBQT women and low levels of engagement of LBQT women in HIV care. Sexual stigma refers to the devaluing of sexual minorities and the negative attitudes and lower levels of status and power afforded to non-heterosexual behaviors, identities, relationships and communities. While LBQT women are often perceived at low risk for HIV infection, LBQT women may in fact be at elevated risk due to sex with men, involvement in sex work, and/or injection drug use. Literature highlights the convergence of sexual stigma and gender based violence as elevating LBQT women’s risk for HIV infection. We used a critical feminist epistemology to explore experiences of stigma and discrimination among women living with HIV from LBQT communities.

Methods: For this qualitative study, we conducted 3 focus groups with LBQT women living with HIV across Ontario, Canada. We used a semi-structured interview guide to explore strengths and challenges experienced by women living with HIV. Focus groups were digitally recorded, transcribed, entered into NVivo 8 and examined with narrative thematic analysis and constant comparative methodology from grounded theory.

Results: Focus group participants (n=43) included: transgender (n=21), bisexual (n=15), queer (n=4) and lesbian (n=3) women living with HIV. Participants described social (e.g. sexual violence) and structural (e.g. refusal of health care) levels of stigma and discrimination. Multiple forms of stigma emerged: felt-normative (negative societal attitudes); internalized (“you feel shameful”); enacted (“they gang raped me”); symbolic (“you’re the one who start that virus”) and layered (experiencing HIV-related and sexual stigma concurrently). Participants discussed sexual violence that they attributed to homo/transphobia as the primary route of HIV infection. Participants described the invisibility of HIV-positive LBQT women: “you don’t exist”. Most participants felt there were no services available for HIV-positive LBQT women as most services catered to HIV-positive heterosexual women or HIV-negative LBQT women: “where do I go?” The deleterious effects of stigma and discrimination on
mental health and well-being were widespread: "the pressure is just too much to carry". A lack of awareness regarding HIV prevention for HIV-positive women who have sex with women was described as a barrier to practicing safer sex. Social support groups and engaging in social justice movements emerged as important facilitators of resilience and well-being.

**Conclusions:** Women described sexual stigma, including homo/transphobia, as elevating risk for HIV infection while reducing access to health care. This has implications for social and structural interventions to challenge homo/transphobia and promote human rights for sexual minorities. Understanding the trauma and deleterious mental health effects resulting from experiences of verbal, physical and sexual violence can inform mental health care and support for LBQT women. Invisibility of LBQT women in HIV support/prevention programming—and HIV-positive women in LBQT women’s programs—highlights the need to develop tailored interventions to meet the needs of LBQT women living with HIV.

**Abstract: P_13**

*HIV prevention for Women (Biology/Therapy/Management)*

**Mucosal Immunity**

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**Objectives:**
- To determine the knowledge of young people about mucosal immunity in relation to HIV/AIDS.
- To ascertain the readiness and interest of young people in learning and being aware of the ongoing research into mucosal immunity and vaccines.
- To understand the role of the mucous membrane(s) and mucosal vaccines in the prevention of infections.

**Background:** The overall perception of mucosal immunity emphasizes nonsusceptibility to the pathogenic effects of foreign organisms/antigenic substances arising from the antibody secretions of the mucous membranes. Mucosal surfaces of the body act as major entry portal for all forms of infections and in particular, human immunodeficiency virus (HIV). There has been recent ongoing research into developing mucosal based vaccines against a variety of microbial pathogens. With Nigeria having a high HIV prevalence rate globally, and 5.9% of this population within the 25-29 years age range, a study was conducted among members of the general population belonging to this class to know their awareness level and if they are willing to participate in microbicide research to reduce the prevalence rate.

**Method:** An investigative study was carried out among final year Mass Communication students of Lagos State Polytechnic. All participants between 20-29 years of age were involved in the study, a total of 196 people were final year students with 172 belonging to the desired age group. A structured, self administered questionnaire was used to gather information after brief briefing by the HOD about the study. Data collected was analyzed using epi info statistical software.

**Results:** 160 of the questionnaires were correctly filled, 52 males and 108 females. All respondents claimed to be aware of the HIV/AIDS campaign, and the existence of vaccines against ailments like Polio. 95% of the respondents were not aware of the ongoing research into mucosal immunity in relation to HIV and the development of preventive vaccines against the scourge, 5% who claimed to be aware revealed knowledge only through the media and seminars but were not aware of the extent of success or failure in the microbicidal research. 75% of the entire respondents revealed willingness to be enlightened further and claimed statistical and accurate information was lacking in the campaign against HIV/AIDS and recent medical breakthroughs.

**Conclusion:** Information on mucosal immunity and microbicide development is
lacking greatly in this age group, negative social and societal trend on discussing the issue beyond the fundamentals i.e. ABC, should be looked into. Subsequent campaigns should include detailed information on mucosal immunology as a means of microbicides development to curtail the growth of HIV by limiting the host’s viral load and reducing possibility of transference through sexual transmission to another.

Abstract: P_14

HIV prevention for Women (Biology/Therapy/Management)

“I want to talk about women and violence”:
Understanding multidimensional forms of violence against women living with HIV in Ontario, Canada

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Introduction: The increased HIV infection rate among women in Canada, particularly among marginalized women, underscores the importance of understanding the social determinants of health among women. Violence against women (VAW) is a significant public health concern, and a increasingly salient issue to address in the context of HIV. VAW has been discussed as a route of infection for women and a barrier to accessing HIV prevention services, as well as an obstacle for women living with HIV to disclose HIV-positive serostatus to partners. The World Health Organization called for further research to examine the social and health consequences of VAW and the linkages between VAW and HIV. We used a critical feminist epistemology to explore experiences of VAW among women living with HIV from marginalized communities across Ontario, Canada.

Methods: This qualitative study was a collaboration between Women’s Health in Women’s Hands Community Health Centre and Women’s College Research Institute. We conducted 15 focus groups with women living with HIV across Ontario, Canada including: Aboriginal, African/Caribbean, sex worker, injection drug user (IDU), lesbian/bisexual, and transgender women. Four focus groups were implemented with HIV researchers and service providers in Ottawa, Hamilton and Toronto. We used a semi-structured interview guide to explore strengths and challenges experienced by women living with HIV. Focus groups were digitally recorded, transcribed, entered into NVivo 8 and examined with narrative thematic techniques from grounded theory.

Results: Focus group participants (n=104; mean age=38 years; 23% lesbian/bisexual; 22% transgender; 69% ethnic minority) attributed experiences of VAW to: HIV-positive serostatus, sexism, homo/transphobia, and other marginalized identities (e.g. sex worker). Participants described VAW as a silenced and stigmatized, yet common, occurrence with deleterious impacts on mental health and well-being. Participant narratives highlighted multiple types (physical, sexual, emotional, verbal, stalking) and sites (family, community, workplace) of violence. Multi-level forms of VAW included micro (e.g. interpersonal relationships), meso (e.g. community instigated) and macro (e.g. state sponsored). Lesbian, bisexual, and transgender women described the intersection of homo/transphobia with gender-based violence as a route of HIV infection. Sex workers described widespread sexual violence and stigma. New Canadians, including refugees, described a lack of financial resources, social support and uncertain immigration status as barriers to leaving abusive relationships. HIV-related stigma (perceived, enacted, internalized) emerged as major reason why women living with HIV remained in situations of intimate partner violence.
Conclusions: Women living with HIV described associations between stigmatized social identities (e.g. HIV-positive, sex worker, sexual minority) and vulnerability to experiencing violence. Participants highlighted the need for interventions to challenge the stigma and silence surrounding VAW—and HIV—and to provide information and resources for marginalized women living with HIV. Newcomer and refugee women living with HIV could benefit from tailored VAW outreach and support programs. Social support and financial independence could enhance empowerment for women living with HIV, providing options for leaving abusive situations. Understanding the deleterious effects of VAW on HIV risk, mental health, and social support for women can inform health care provision, VAW programs and support services, and multi-level interventions to reduce VAW.

Abstract: P_15
HIV prevention for Women
(Biology/Therapy/Management)

“I will not let my HIV status stand in the way” decisions on motherhood among women on ART in a slum in Kenya - an qualitative study

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Introduction: Since 2003 the African Medical Research Foundation (AMREF) has been providing antiretroviral therapy (ART) free of charge at its community health centre in Kibera, Kenya. In 2007 an internal assessment showed that women were becoming pregnant before reaching the acceptable level of 350 cells/ml CD4 cell count. Furthermore they did not consult clinic staff about their pregnancy intentions. This study explored why women newly initiated on ART with a low CD4 count, choose to become pregnant despite a higher risk of mother-to-child transmission (MTCT) and pregnancy related morbidity and without consulting the medical staff at the ART clinic.

Materials and Methods: Nine pregnant women, six newly delivered mothers and five women wanting to get pregnant were purposefully selected for in-depth interviews. Content analysis was used to organize and interpret the women’s experiences of becoming pregnant. The analysis team consisted of a Kenyan medical doctor and social worker and a Swedish infection doctor, midwife and a sociologist originally from Kenya.

Results: Women's choices for pregnancy could be categorized into one overarching theme 'strive for motherhood' consisting of three sub-themes 'Activating motherhood' refers to women's explanation for pregnancy and their role in achieving a pregnancy. A child is thought of as a prerequisite for a fulfilled and happy life. The women accepted that good health was required to bear a pregnancy and thought that feeling well, taking their antiretroviral treatment and eating nutritious food was enough. The sub-theme 'Between silence and openness' points to the dilemmas that women face in their decision to share or not to share their HIV infection and pregnancy intentions with their partners. The women assessed their options of becoming pregnant. Becoming pregnant as an HIV-infected woman was, however, complicated by the dilemmas related to disclosing HIV infection and discussing pregnancy intentions with their partners. 'Predicting the unpredictable' is an illustration of how the role of the clinic in pregnancy is not meeting the needs of the women when they wanted to become pregnant. Women feared being advised against pregnancy and perceived preconception counseling as interfering on their own decision-making of pregnancy, thus not meeting their needs. Consulting health care providers about a possible pregnancy was perceived as involving an 'outsider' on a personal decision.
Conclusions: Motherhood is important to women on antiretroviral treatment. But they seemed to lack understanding of the relationship between a high CD4 count and a low chance of transmission of HIV to offspring. Better education about the relationship of perceived good physical health, low CD4 count and the risk of mother to child transmission is required. Women want to control the domain of childbearing but need enough information to make healthy choices without risking transmission.

Abstract: P_16

HIV prevention for Women (Biology/Therapy/Management)

Is "opt-out HIV testing" a real option among pregnant women in rural districts in Kenya?

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Introduction: An opt-out policy of routine HIV counseling and testing is being implemented across sub-Saharan Africa to expand prevention of mother to child transmission (PMTCT). Although the underlying assumption is that pregnant women in rural Africa are able to voluntarily consent HIV testing, little is known about the reality and whether opt-out HCT leads to higher completion rates of PMTCT. Factors associated with consent during HIV testing of pregnant women under the opt-out approach were studied in two rural districts of Kenya.

Materials & Methods: Sit-in observations during PMTCT counseling were followed by a cross-sectional survey with 900 pregnant women in three public district hospitals collaborating with NGOs for PMTCT in Busia and Sämia districts. Women on a first antenatal care (ANC) visit during the current pregnancy were interviewed after giving blood for HIV testing but before learning test results. Descriptive statistics and multivariate regression analysis were performed.

Results: 97% were tested for HIV at ANC. Lack of testing kits was the only reason for women not being tested, i.e. nobody declined HIV testing. Despite the fact that 96% had more than four recent pregnancies and 37% had been tested for HIV at ANC before, only 17% knew testing is voluntary. Following group pretest counseling on PMTCT, 91% perceived HIV testing a mandatory part of ANC. Only 20% perceived that they would have been able to decline HIV testing had they realized testing was voluntary. Perceived ability to decline HIV testing was associated with knowing that opting out was possible (OR=5.44, 95%CI 3.44-8.59), not being in a stable relationship with the child's father (OR=1.76, 95%CI 1.02-3.03), and not having discussed HIV testing with a partner before the ANC visit (OR=2.64 95%CI 1.79-3.86).

Conclusion: High coverage of HIV testing appears to be reached at the cost of pregnant women's ability to make informed choices about testing. Good quality pretest information is central for encouraging pregnant women to voluntarily consent HIV testing in sub-Saharan Africa, in turn an important prerequisite for completing PMTCT for those who test HIV positive. Midwives and pregnant women need to work together to increase coverage and access of PMTCT. While provider motivation is necessary to increase the number of women testing for HIV at ANC, caution must be exercised to involve the woman during consent and protect their integrity if improvement in enrollment and completion of PMTCT is to be achieved. The fear of negative reactions from the partners makes it difficult for pregnant women to HIV test at ANC. PMTCT programs could adopt an intensive community campaign strategy to raise awareness of HIV testing being performed at ANC and reasons why, to sensitize individuals making them better prepared to make informed decisions. Health authorities could collaborate with nongovernmental organizations (NGOs) to
Abstract: P_17

HIV prevention for Women (Biology/Therapy/Management)

Women and family centered HIV care; a successful model of care for HIV positive women and their children.

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Background: HIV + women often face multiple barriers to accessing and remaining engaged in HIV care; these include care giver roles, inadequate access to social determinants of health and challenging life circumstances. Health care systems are frequently not conducive to the optimal care of women, resulting in lack of continuity between obstetrical/gynecologic and routine HIV care, non-coordination of pediatric and adult care, lack of child-care, and lack of safety/confidentiality and other support. In an attempt to address these challenges the Oak Tree Clinic (OTC) was established (with significant community support and input) in 1994, as a university-hospital based provincial referral center for women, children and youth.

Setting: Women represent ~25% of people living with HIV in British Columbia (BC); aboriginal women are disproportionately represented and ~ 40% have a history of injection drug use. Antiretroviral drugs are made available free of cost in BC but only 15% of people on therapy are women.

Results: A total of 5525 patients (75% women) have been cared for, and there have been 23,099 patient visits. A total of 450 mother-infant pairs have received care and there were no infected infants born to 326 pregnant women receiving HAART since we began offering combination ARV in pregnancy in 1996. A total of 76 infected children have received care. In the year 2009 a total of 751 patients received care (558 adult women, 44 infected children/youth). We have been successful in engaging women from multiple ethnocultural and demographic back-grounds. OTC’s population is aging and changing; there is an increase in the mental health, addiction, housing and poverty issues among our youth and adult patients.

Conclusions: An inter-professional team, with joint care of women and families living with HIV, has proved to be a successful model of care in our setting. We continue to face challenges in adequately addressing the impact of trauma, mental health and addictions in the lives of many of the women accessing our clinic. However we believe
that the strength of this integrated model of care is in its comprehensive response to the diverse needs of women, children and youth living with HIV.

Abstract: P_18

HIV prevention for Women (Biology/Therapy/Management)

The safety, efficacy, and steady state pharmacokinetics of atazanavir/ritonavir (ATV/r) during pregnancy: results of study AI424182


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Background: Unmet medical needs remain for a once-daily, safe, efficacious, and well-tolerated boosted protease inhibitor during pregnancy. Study AI424182 was an open-label single-arm phase 1 study designed to assess the safety, efficacy and pharmacokinetics of atazanavir/ritonavir (ATV/r) during pregnancy in HIV-infected women and their infants.

Methods: Serial clinical and pharmacokinetic parameters were assessed during second trimester (2TRI), third trimester (3TRI) and post-partum (PP). 3TRI dosing was ATV/r 300/100 mg (n = 20) or ATV/r 400/100 mg (n = 21) QD with AZT/3TC 300/150 mg BID. 2TRI and PP dosing was ATV/r 300/100. 3TRI exposures were compared to historical ATV/r 300/100 exposures (non-pregnant adults). Total bilirubin was assessed at baseline, each visit and delivery day for mothers and on days 1, 3, 5, 7, week 2, and Week 6 for live-born infants. Repeated measures analysis was used to determine the effect of UGT1A1-genotype on bilirubin in mothers and infants. Adherence was assessed by the Multicenter AIDS Cohort Study adherence questionnaire.

Results: All mothers were HIV RNA < 50 c/mL before or at delivery. All infants (N = 40) are HIV DNA-negative to date. No deaths occurred. Sixteen mothers had drug-related SAEs. Grade 3–4 hyperbilirubinemia occurred in 6/20 and 13/21 mothers in the 300/100 and 400/100 groups, respectively. Three infants had drug-related SAEs. Infant bilirubins were within normal limits through day 14; 7 had Grade 3 hyperbilirubinemia after day 14 (maximum 8.5 mg/dL at day 15). Infant bilirubin weakly correlated with maternal bilirubin at delivery ($R^2 = 0.279$) and over the last month of pregnancy ($R^2 = 0.161$). For ATV 300/100 mg, $C_{max}$ and AUC during 3TRI were 27% and 21% lower and $C_{min}$ was similar to historical. ATV/RTV 300/100 mg QD produced AUC and $C_{max}$ similar to, and $C_{min}$ 39% higher than historical; PP exposures were higher than historical. The increase in total bilirubin from baseline varied by UGT1A1 genotype in mothers but not in infants. There was no correlation between ATV cord blood levels and day 1, 3 or 5 infant bilirubin. The proportion of mothers adherent to the regimens ranged from 78% to 100% from enrollment through Week 4 postpartum.

Conclusions: ATV/r + AZT/3TC was effective and-well tolerated with no unexpected treatment-related AEs. Virologic suppression was achieved in all mothers with no mother-to-child HIV-transmission. ATV/RTV 300/100 mg QD provided ATV $C_{min}$ values throughout pregnancy similar to efficacious exposures in non-pregnant HIV+ subjects. ATV/r treatment of mothers did not exacerbate physiologic hyperbilirubinemia in newborn infants. As expected, there was an association between UGT1A1 genotypes and bilirubin levels in pregnant women. There was no association between infant ATV exposure, maternal bilirubin or UGT1A1 genotype and infant bilirubin. Good adherence was observed throughout the study.
Abstract: P_19

HIV prevention for Women (Biology/Therapy/Management)

Assessing knowledge of HIV/aids and sexual risk behaviours of women attending Ikorodu general hospital antenatal clinic - Ikorodu, Lagos, Nigeria.

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Introduction: Objectives of this study is to assess the level of knowledge of HIV/AIDS, to identify contributing factors to the transmission and to determine sexual risk behaviours of women attending Ikorodu General Hospital Antenatal Clinic, Ikorodu, Lagos.

Materials and Methods: A descriptive cross sectional study was conducted on pregnant women living in Ikorodu Local Government Area, Lagos State, Nigeria. The respondents were women who are residents and who have registered at the Antenatal Clinic in the Ikorodu General Hospital, Lagos, Nigeria. Informed consent were taken from each respondents. Ethical approval was obtained from the Medical Director and Management of Ikorodu General Hospital. Participants were selected using systematic sampling method.

A structured questionnaire with open ended questions, self and interviewerer administered were used to collect data from 420 respondents. This was pretested among 20 pregnant women in another General Hospital in Lagos state, Nigeria. The HIV status of the respondents were obtained from clinic records. Data was analysed using EPI-Info version 6.04 programme software.

Results: Knowledge on the modes of HIV transmission was good and (75.5%) knew between 7-10 of the correct suggested modes of transmission. 92.8% had general awareness about the existence of HIV/AIDS and 58.6% believed there was no cure for HIV/AIDS. Misconceptions about HIV/AIDS transmission and prevention was observed in 53.6% of the respondents and this was found more among those with low or lack of education and those with some other religious belief. The high level of knowledge about HIV transmission and prevention did not necessarily translate to an increase in the use of condom and the misconception the about HIV/AIDS transmission and prevention do affect their use of condom sexual. The earliest age at first sexual intercourse was nine years. There is a significant statistical association between early debut and the risk of HIV infection. The distribution of respondents by pre-marital sex was 49.5% amongst respondents who are sexually experienced before marriage while 50.5% reported married as virgins. Involvements of respondents in extramarital sex was low(5%) amongst the married women as compared to the unmarried women (95%). Mothers who were married more than once were significantly more likely to indulge in extramarital sex. Many of the respondents agreed that the use of condom during sex and abstinence were effective measures against HIV transmission. A good number of the respondents seems to be empowered enough to take independent decisions. About 63.8% of the respondents said they could refuse sex if their husbands was discovered to have sexually transmitted infections and can propose the use of condom.

Conclusion: The knowledge level about HIV/AIDS among female residents of Ikorodu was high but this high level of knowledge did not translate into less risky sexual behavior. It was found that only a few reported ever used a condom despite knowing different modes of transmission of the virus. Premarital sex was practiced more than extramarital affairs among the educated women and women who had never used condom were many, which poses a high sexual risk behavior that predispose women to HIV/STI infection.
Abstract: P_20

HIV prevention for Women
(Biology/Therapy/Management)

Knowledge Attitude and Behaviour Study to Determine appropriateness of Female Condom as HIV Prevention Option for Young Women.

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Background: The emergence of Female Condom as HIV prevention option for women has received wide publicity. However the appropriateness of this prevention option for different categories of women has to be explored especially in countries where it is expected to be used. The National HIV and AIDS Behaviour Change Communication 5 year Strategy (2008) identifies the youths as high priority intervention target audience. The introduction of female condom as a prevention option was therefore accepted as it would help reduce HIV transmission and provide opportunity for women to protect themselves from infection. Yet this option ignored the peculiar need of young people for behaviour change to occur in HIV prevention. Mushin is a densely populated area in Lagos State with a 2006 population figure of over four million people. A reproductive health knowledge, attitude and beliefs and practices survey in Mushin (2002) by Health Matters shows 83% of respondents have knowledge of contraceptive, popularly mentioned contraception were condoms and pills. The objective of this study is to ascertain the appropriateness of female condom as HIV prevention for sexually active young females age 19 – 24.

Methods: The Good Neighbour conducted KAB study on three categories of young women using focused group discussion and administered questionnaires. The three categories are sexually active out of school females, same age bracket female sex workers and women bearing children ages 25 – 35. These three categories of women were trained on the use of female condom. Sample size of each category is ten, which means a total of thirty women participated in the study while descriptive statistical analysis was used to explain the results.

Results: 70% out of school females shows inconsistent use of female condom. When asked 'do you prefer your partner using his condom or you using female condom during sexual intercourse”. 100% of respondents would prefer their partners use male condom. 50% of respondents say they are not comfortable with female condom. While female sex workers of same age shows high level of consistent condom use, they also would prefer their partners use their condom. Also 60% of female sex workers respondents say they are not comfortable with female condom. On the other hand the sample category of women bearing children shows that 50% of respondents would use female condom to prevent HIV infection. 80% of this category of respondents shows that they would prefer to use female condom because their spouse would not use condom.

Conclusion: The results show that young women ages 19 – 24 dislike the use of female condom which is attitudinal. The child bearing women of ages 25 – 35 prefer using female condom to protect themselves from HIV infection, this behaviour objectively shows that female condom offers protection and empowerment for women against HIV infection. Summarily, female youth dislike of female condom as a preventive option for women indicates the need to explore the possibility of appropriate prevention option for young women.
Abstract: P_21

Cohort studies

Sex matters: Retrospective data collection on the date of commencement of ART for HIV positive women and men in the German KompNet cohort (1991-2009)

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Background: In Germany the majority of people living with HIV/AIDS are males and little is known about the characteristics and epidemiology of female HIV patients. The German KompNetKohort is a large, national retro- and prospective, multicenter, HIV-specific cohort, that documents HIV-positive patients since 1991. One important question we wanted to answer is in how much these two populations differ and whether a gender specific treatment approach is needed.

Methods: A thorough database analysis was conducted and male and female HIV patients of the German KompNetKohort were stratified for baseline characteristics, immunologic status (CD4+ counts, VL, opportunistic infections) before commencing ART, country of origin, way of transmission as well as the initial therapy regimen.

Results: We analysed 3793 Patients (590 women (15,5%), 3203 men (84,4%)). The median age was 43,6 years for women and 47,64 for men. 137 female (23,3%) and 751 male (32,9%) had CD4-counts < 200 /µl, whereas 451 women and 1529 men showed CD4-counts > 200 CD4/µl (p< 0,001). The initial therapy regimen was documented for 2216 patients. 215 women and 687 men started with a PI-based regimen, whereas 199 women were treated with an NNRTI and 1314 men (p< 0,001). Other regimens where used 176 times in women and 1403 in men.

Conclusion: In the German KompNetCohort men had lower CD4-counts at the time of starting ART. Women where much more frequently treated with PI than men. A reason could be the restrictions in child bearing age for Efavirenz and the CD4-cellcount in Nevirapin-use. It is not clear if the lower CD4-Cellcount at time of starting ART in men is due to late presentation. Further investigations are warranted.

Abstract: P_22

Cohort studies

Quality of Life in HIV+ women: self-esteem, body image and social relations

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Introduction: This paper describes the impact of HIV in the Quality of Life (QoL) of women living with HIV/AIDS (WLHA) in a gender comparative study. The main objective is to evaluate the QoL of WLHA regarding the social relation domain and self-esteem and body image facets (psychological domain) and their relations to sociodemographic and clinical factors.

Material & Methods: The study implemented at national level involved the participation of the main national hospitals and their HIV patients in the evaluation protocol based on the locally validated version of the WHO Quality of Life Instrument for HIV (WHOQOL-HIV 120) and a summary of socio demographic and clinical data. For statistical and data analysis the 14.0 version of SPSS was used including descriptive statistics and inferential statistics, considering a significance level of less than 0.05.

Results: Considering a sample of 158 people living with HIV (79 women and 79 men), the results showed a strong relationship between QoL and the facets/domains of WHOQOL-HIV-120
(physical, psychological, independence level, social relationships, environment, spirituality and personal beliefs), demonstrating the strong negative effect of HIV in QoL of all PLWA. Compared to the group of men, women showed a lower QoL in terms of social well-being, reporting less social support.

**Conclusions:** The frugal existence of studies that approach WLHA and fundamentally their QoL substantiates the pertinence of this study. The results showed the negative effect of HIV in QoL of WLHA and mostly in terms of social relationships. These data is pertinent to reinforce the necessity of improvement of QoL of WLHA, and demonstrates the lack of social support given to women. Understanding the sociodemographic, clinical, relational and psychological characteristics of the WLHA, as well as their evaluation of QoL may provide potentially useful information for tailoring interventions for prevention, care and to enhance QoL among WLHA.

**Abstract: P_23**

Cohort studies

The relationship between knowledge and uptake of family planning usage among young adults accessing care at Infectious Diseases Institute.

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**Background:** Currently it is estimated that 40% of new HIV infections in sub-Saharan Africa are amongst young adults aged 15 – 24 years. In Uganda, an estimated HIV prevalence rate in this age group for girls is 4.3% and a boy is 1%. 1/5 of the young adults aged 15-19 years have ever been married and over 56.9% of the girls are married by the age of 19 compared to 7% of the boys. Teenagers account for 25% of pregnancies in Uganda highlighting the vulnerability of females’ to consequences like early pregnancy, unsafe abortion and maternal morbidity and mortality. 55% of unsafe abortions reported in Uganda occur among the age group 17 -20 years. An Uganda Bureau of statistics report estimated that among the sexually active and unmarried women (20-24 years), 54% used some form of family planning. However, a contraceptive prevalence rate survey showed that there was 23% use of contraception in the general population compared to 10% amongst young women aged 15-24 Years; thus stressing the need to improve family planning amongst young women aged 15 -24 years especially those living with HIV Aids. Following this, the Infectious Diseases Institute (IDI) set up a transition clinic for Young People Living with HIV/AIDS (YPLHIV) aged 16 -24 years. The clinic, among the first of its kind, in Uganda offers excellent clinical care including sexual reproductive services in a youth friendly environment.

**Hypothesis:** We aimed to find out whether the knowledge of the various methods of contraception necessarily translated into its uptake and use among YPLHIV.

**Methodology:** A baseline cross sectional survey was carried out among YPLHIV based on their sexual behavior to determine the knowledge, current use of the different family planning methods.

**Findings:** Among 161 YPLHIV, we looked at awareness, ever use and current use of contraception. For all the family planning methods awareness was greater than ever use or current use, showing an under utilization of family planning amongst this cohort of YPLHIV.

- **For the Pill:** 80.1% were aware, 19.3% ever used, 3.1% currently using
- **Injection:** 78.9% were aware, 36% ever used, 14.3% currently using
- **Implants:** 21.7% were aware, 1.2% ever used, 0% currently using
- **Diaphragm, Foam, Jelly:** 9.3% were aware, 1.2% ever used, 1.2% currently using
Female Sterilization; 21.7% were aware, 0.6% ever used, 0% currently using
- Male sterilization; 11.2% were aware, 0% ever used, 0% currently using
- Rhythm, Counting Days; 21.1% were aware, 9.9% ever used, 4.3% currently using
- Withdrawal; 26.1% were aware, 15.5% ever used, 6.2% currently using
- IUD; 26.1% were aware, 0.6% ever used, 0.6% currently using
- Breast feeding; 14.3% were aware, 3.1% ever used, 0.6% currently using.

Conclusion: This data highlights the need for provision of family planning services amongst YPLHIV in the battle to fight unwanted pregnancies and prevent mother to child HIV transmission.

Abstract: P_24

Cohort studies

Longitudinal effects of basic subsistence needs on the health of unstably housed HIV-infected women living in an urban environment

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Background: Some gender differences in the progression of HIV have been attributed to delayed treatment among women and the social context of poverty. Barriers to optimal health are numerous, yet funding for programs serving vulnerable populations in the United States have been cut drastically. Understanding that each factor is important, but recognizing program limitations, we sought to empirically rank factors that longitudinally impact HIV+ unstably housed women's health.

Materials & Methods: Between 2002 and 2008 a sample of 132 HIV+ women was recruited from San Francisco free meal programs, homeless shelters and low-income hotels, and followed over time; quarterly interviews and blood draws were conducted. Marginal structural models adjusted for all study confounders; targeted variable importance (tVIM) was used to rank factors that were the most influential on self-reported overall physical and mental health (SF36), and gynecological symptoms (7 item scale).

Results: The population was 52% African American and the median age was 44 years. Crack cocaine use was reported by 33% of respondents and 20% reported sleeping on the street or in a homeless shelter in the past three months. At baseline, the median CD4 cell count was 384; Median follow-up time was 10 months per person. After adjusting for potential confounding, the most influential factor on overall mental health was unmet subsistence needs (inability to meet food, hygiene and shelter needs), followed by poor adherence to antiretroviral therapy, not having a close friend/confidant and the use of crack cocaine. The most influential factors on poor overall physical health and gynecological symptoms followed similar patterns.

Conclusions: Among HIV+ unstably housed women, an inability to meet basic subsistence needs has at least as much influence on overall health as adherence to antiretroviral therapy, suggesting that advances in HIV medicine will not fully benefit indigent women until their subsistence needs are met.
Abstract: P_25

Cohort studies

Gender differences in demographics and markers of care for Aboriginal people living with HIV in Ontario

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Background: Aboriginal peoples are disproportionately affected by HIV in Canada and worldwide. In Canada, women represent a much greater proportion of new HIV infections within the Aboriginal population as compared to within the general population. In addition, studies have found that Aboriginal peoples are at risk for receiving poorer HIV-related care when compared with the general population. This study looks at timeliness of HIV diagnosis as a marker of care, comparing Aboriginal women and men living with HIV in the Ontario HIV Treatment Network Cohort Study (OCS).

Materials & Methods: This study is an analysis of retrospective cohort data from the OCS collected between 1997 and 2009. The primary outcome was proportion of participants receiving a late diagnosis of HIV, as defined as: 1) HIV diagnosis within 3 months of the onset of an AIDS-defining illness (ADI), and 2) CD4+ count <200 cells/mm³ at diagnosis. Additional outcomes included median CD4+ count at diagnosis and median time from diagnosis to start of antiretroviral therapy (ART). Medians and interquartile ranges were compared using Wilcoxon rank sum tests. Proportions were compared using Chi-square tests.

Results: 60 Aboriginal women and 290 Aboriginal men were included in the ADI analysis. 20 Aboriginal women and 94 Aboriginal men were included in the CD4+ count analysis. Significant gender differences were noted in socioeconomic characteristics. Women were younger (40.5 vs. 46.0 years, p<0.01), less likely to be employed (13% vs. 39%, p<0.01), less likely to have completed high school (47% vs. 79%, p<0.001) and more likely to have an individual income under $20,000 (77% vs. 55%, p<0.01). Women were more likely to be hepatitis C co-infected (42% vs. 24%, p<0.01). No statistically significant differences were noted in proportions diagnosed with HIV within 3 months of an ADI (women 5.1%, men 5.2%, p=0.98) or CD4+ <200 at diagnosis (35% vs. 35%, p=0.99). The median CD4+ count at diagnosis was 395 cells/mm³ for women and 294 cells/mm³ for men (p=0.69). Women were less likely to have ever been on ART (73% vs. 89%, p<0.01) but had a non-statistically significant shorter median duration from HIV diagnosis to ART start (2.2 years vs. 2.9 years, p=0.14).

Conclusions: Aboriginal women in our cohort had differences in socioeconomic characteristics as compared to Aboriginal men. Many studies have found associations between low socioeconomic status and HIV vulnerability and addressing structural factors is needed in a comprehensive response to HIV, particularly among Aboriginal populations. Clinical outcomes of late diagnosis were not significantly different between Aboriginal women and men but it should be noted that there were few Aboriginal women enrolled and that the statistical power was low. Women had a non-statistically significant trend of being diagnosed with less advanced HIV disease. This may reflect the impact of prenatal HIV testing, however, Aboriginal women living with HIV were less likely to have ever received ART. This finding is concerning given the indication for ART to reduce the risk of vertical transmission. More research is needed on ART use and the context of HIV diagnosis among Aboriginal women.
Abstract: P_26

Cohort studies

Recruitment of low-risk women through couples HIV counseling and testing for a microbicide trial

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Introduction: Couples HIV counseling and testing (CHCT) at government clinics in Lusaka, Zambia was used to recruit low-risk women for IPM 015 Phase I/II trial. Couples were considered low risk if both partners were HIV negative and eligible if they were willing to use a long term contraceptive method to ensure they would not conceive during the trial.

Methods: Counselors used checklists to screen couples at the clinics. Couples referred were again screened at the research project. Descriptive statistics were calculated from data collected at city clinics and the research project during active recruitment for the cohort.

Results: Of the 1593 couples tested, 801 were concordant negative couples of whom 233 (29%) met pre-screening eligibility criteria and were referred. The major reasons for no referral were: 182 (32%) pregnant, 120 (21%) desire to have children in the next year, 85 (15%) breastfeeding infant less than 6 months old, 76 (13%) couple cohabitating for less than 3 months, and 75 (13%) woman over age. Of the 233 referred, 107 (46%) came to the research project for further eligibility screening. Of these, 53 (50%) enrolled. The major reason for non-enrollment was refusing a user-independent contraceptive method, 24 (43%). Of these 16 (67%) plan to have a child in next 2 years and 8 (33%) were not interested in IUD/Implant. Of the 53 enrolled, 30 already used a long term method, 16 chose implant, 1 chose IUD, and 6 to return later for a method.

Conclusions: The greatest barriers to recruitment of a low-risk cohort of women for early phase trials were pregnancy, intent to conceive, and breastfeeding. Pre-screening and targeted referrals of potential participants can reduce burden on enrollment personnel by triaging a majority of ineligible clients. While refusing a user-independent contraceptive method was the greatest barrier to enrollment, uptake of implant and IUD is increasing.

Abstract: P_27

Cohort studies

"These are some of the things we need": Women Living with HIV Discuss Issues in Their Daily Lives as Research Priorities

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Background: Historically, women have been excluded from clinical trials and research because of such concerns as their reproductive capacity or the influence of hormonal cycles. In the field of HIV, a deficit of female participation in research has left many unanswered questions concerning proper drug dosing, effectiveness and difference in side effects in women. Additionally, there are insufficient resources directed at research on the social and economic factors affecting the Canadian HIV epidemic, which is greatly important to women as the female population infected with HIV continues to rise. Further female-specific research is required to better understand these issues. The objective of this study was to determine which research topics are priorities to women living with HIV (WLWH) across Ontario, Canada.
**Methods:** In this qualitative study, we conducted 15 focus groups with WLWH across Ontario, Canada including: Aboriginal, African/Caribbean, sex worker, injection drug user (IDU), lesbian/bisexual, and transgender women. Four focus groups were implemented with HIV service providers and researchers in Ottawa, Hamilton and Toronto. We used a semi-structured interview guide to explore the research priorities of WLWH. Focus groups were digitally recorded, transcribed, entered into NVivo 8 and examined with narrative thematic techniques from grounded theory.

**Results:** Focus group participants (n=104; mean age=38 years; 23% lesbian/bisexual; 22% transgender; 69% ethnic minority) and service providers (n=48) described issues of daily survival, mental health and physical health as research priorities. Poverty was described as a serious challenge for WLWH with frequent daily struggles to meet basic needs such as food, housing and transportation, that often resulted in an inability to adhere to antiretroviral medications and a barrier to accessing health care. Participants described employment barriers as including inflexible disability benefit policies, fluctuating health concerns, and a need for additional training and support. Mental health and emotional issues, including anxiety, depression and suicidal ideation, were discussed by women as stemming from the stress of living with HIV and experiencing HIV-related stigma. Social isolation—and fear of disclosure—also resulted from stigma and discrimination and compounded participants’ mental health concerns. Participants described different areas regarding their physical health they would like to have further research in: finding a cure for HIV, lipodystrophy, co-infections, pregnancy and pregnancy planning, and gender/ethno-racial -specific medication side effects. Participants discussed the need for more research—that engages communities and WLWH—that was specific to women.

**Conclusions:** The objective of this research was to discuss research priorities of WLWH. What emerged, however, was that issues of daily survival—food, housing, transportation—for WLWH and their children was the first priority. The influence of stigma on mental health issues and social isolation suggests the need for social support groups and stigma reduction interventions. Gender and ethno-racial specific research on side effects and pregnancy planning can inform future research with HIV-positive women. Participants also recommended that research engage WLWH in all parts of the research process. WLWH emphasized the salience of community engagement and knowledge dissemination to ensuring the research can inform programs, interventions, policies and women’s daily lives.

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**Abstract: P_28**

**Cohort studies**

**Gender and Ethnicity differences in HIV-related stigma**

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**Introduction:** HIV-related stigma is a leading barrier to health promotion and treatment amongst people living with HIV (PLWH) globally. There have been few studies explicitly examining the role of gender or ethnicity on the form and degree of HIV-related stigma or quantifying or comparing the prevalence of HIV-related stigma subtypes (perceived, internalized, and enacted). Perceived stigma is conceptualized as the awareness of PLWH of HIV (PLWH) globally. There have been few studies explicitly examining the role of gender or ethnicity on the form and degree of HIV-related stigma or quantifying or comparing the prevalence of HIV-related stigma subtypes (perceived, internalized, and enacted). Perceived stigma is conceptualized as the awareness of PLWH of HIV-related actual or potential social disqualification, denial or limitation of opportunity, and/or negative changes in social identity. Internalized stigma refers to the extent to which an individual internalizes society’s negative views of them and
enacted stigma refers to overt acts of discrimination and hostility directed at an individual because of his or her perceived HIV-positive serostatus. This study aimed to determine the association between gender and ethnicity and the prevalence, degree, and subtype of HIV-related stigma experienced by PLWH in Ontario, Canada.

Methods: A cross-sectional study of PLWH in the Ontario Cohort Study (OCS) was conducted. The outcomes of interest were levels of stigma experienced as measured by the Revised HIV-related Stigma Scale in the extended OCS questionnaire. The primary correlates of interest were gender (male vs. female) and ethnicity (White, Black, Aboriginal, Asian/Latin-American/Unspecified).

Results: 1000 participants were included in the analysis: 840 men (579 White, 85 Black, 51 Aboriginal, 130 Asian/ Latin-American/ Unspecified) and 160 women (56 White, 81 Black, 8 Aboriginal, 15 Asian/ Latin-American/ Unspecified). In the study cohort, males were more likely to be lesbian/ gay/ bisexual/ transgender (LGBT) (82% vs. 5%, p<0.0001), and Canadian-born (65% vs. 37%, p<0.0001). Females had significantly higher total stigma scores and subscale scores. Asian/ Latin-American/ Unspecified women had the highest, Black and Aboriginal women had intermediate, and White women had the lowest total stigma scores (59.0 vs. 57.0 vs. 55.3 vs. 52.0, p = 0.03). Black men had the highest, Aboriginal and Asian/ Latin-American/ Unspecified men had intermediate, and White men had the lowest total stigma scores (54.0 vs. 51.0 vs. 51.0 vs. 46.0, p<0.0001). In univariate modeling, significant correlates of higher total stigma scores were female gender, non-White ethnicity, heterosexual contact, origin from HIV endemic country, and birth outside of Canada. A gender and ethnicity interaction term was associated with higher stigma scores for females and non-White males. Older age, longer HIV diagnosis duration, LGBT sexual orientation, higher education, and injection drug use were associated with lower stigma scores. In the multivariate model, the gender and ethnicity interaction term was associated with significantly higher stigma scores for Asian/ Latin-American/ Unspecified males and Black females.

Conclusion: There were significant demographic differences between males and females in the study cohort. Female gender and non-White ethnicity were significant correlates of greater stigma. Female gender in combination with Black/African ethnicity had an interaction leading to an even greater enhancement of stigma experienced.

Abstract: P_29

Cohort studies

Correlates of anxiety in HIV-positive women of reproductive age

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Background: Better understanding of factors associated with anxiety among people living with HIV (PLWH) is needed, as psychological distress has been associated with difficulty adhering to antiretroviral therapy and HIV disease progression. HIV-positive women are known to have additional distress related to the added stress of care-giving and lower socioeconomic status. However, only few prior studies have exclusively focused on examining predictors of anxiety in HIV-positive women. This study aimed to assess the correlates of anxiety among women living with HIV (WLWH) of reproductive age.

Methods & Materials: The current analysis is a secondary study of a cross-sectional self-administered survey which was carried out to evaluate the reproductive intentions of WLWH of reproductive age (ages 18 to 52) living in Ontario, Canada. In this analysis, we investigated the demographic,
abstracts

psycho
social and clinical variables associated with anxiety for WLWH. Anxiety was assessed using the Hospital and Depression Scale (HADS). We used hierarchical linear regression and a review of the literature as well as previous regression analyses to determine the order of variables in the model, with anxiety as the outcome variable. In Block 1 of the regression, we entered demographic variables. Block 2 consisted of psychosocial variables. Lastly, Block 3 contained pregnancy-related stressors and perceived quality of HIV-care hypothesized to predict anxiety.

Results: 396 WLWH were included in the analysis with an average age of 38 years (SD = 7.86). 48% were currently living in Toronto, 47% were of African ethnicity, 12% were French-Canadian, and 8% were Aboriginal. Utilizing Zigmond and Snaith’s (1983) original cut-off scores for the HADS, approximately 65% of the women scored low on anxiety and the remaining 150 (35%) respondents were considered anxious. Hierarchical regression analyses indicated that being on government assistance, $\beta= .19$, $t(389)$, $p=.001$, significantly predicted anxiety. Reporting poorer immunological status, indicated by a low CD4 count, $\beta=-.10$, $t(387)$, $p=.03$, was significantly associated with anxiety, and having a romantic/sexual partner ($\beta=-.16$, $t(387)$, $p=.001$) significantly reduced anxiety on step 2, after controlling for demographics. The final regression model with all three blocks accounted for 17% of the variance in anxiety, $R^2 = .173$, $F(1, 382)=5.72$, with being on government assistance and having an intimate partner remaining as significant predictors of anxiety; in this final block the addition of HIV-health related worries ($\beta=-.2$, $t(382)$, $p=.001$) and desire to become pregnant ($\beta=.14$, $t(382)$, $p=.01$) were positively associated with anxiety, whereas having a partner and a positive relationship with the HIV-specialist lowered anxiety. However, as this is a cross-sectional study, the results reported cannot imply a casual relationship. It is important to identify factors associated with anxiety for WLWH to allow healthcare provider screen for then and improve the care for their HIV-infected female patients.

Abstract: P_30

Efficacy / Toxicity / Pharmacology

Effects of Reverse Transcriptase Inhibitor on Uterine, Liver Histology and Estrus Cycle in Female Wistar Rats.

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Background: Due to the stigma associated with HIV infection, HIV infected persons in Nigeria, have been found to remove packs of their drugs and transferring the contents into non antiretroviral drug containers especially multivitamin containers, as a result unwary individuals have stumbled on such drugs and accidentally consumed it eventually leading to a host of complains such as dizziness, vague dreams, cramps etc. We therefore decided to study the effects of these drugs histology of the liver and uterus, estrus cycle in the adult female rats.

Methods: The rats were divided into two groups; one group received (Lamivudine, Nevirapine and Zidovudine) combination while the control group received normal saline. The animals were treated for 3-weeks, day to day analysis of the estrus cycle was recorded after which the animals were then sacrificed. The abdominal cavity was opened with the liver and uterus taken...
out and were then fixed in 10% formal saline. After complete fixation the blocks were embedded in paraffin and sections cut at 5µm (micron) and stained with Haematoxylin & Eosin and mounted in Canada balsam. Microscopic examinations of the sections were carried out under a light microscope.

Results: From our observation we discovered that there was an aberration in liver histology of the experimental group in that the central vein was dilated as compared to the control group. In the uterus there was high deletion of the endometrial gland with few tortuous glands present in the endometrium as compared to the control, it was also discovered that the drug had no effect on the estrus cycle.

Conclusions: The diestrous index did not show any significant difference from the control using the student t-method at p<0.05. However, alteration in the endometrial wall and gland may have implication for implantation.

Abstract: P_31

Efficacy / Toxicity / Pharmacology

Ethnicity and Gender Differences in Lipodystrophy of HIV-Positive Individuals Taking Antiretroviral Therapy in Ontario, Canada


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Background: Antiretroviral therapy (ART) has resulted in dramatic reductions in HIV-associated morbidity and mortality, but is associated with many adverse events. Lipodystrophy, a side effect of antiretroviral therapy (ART), is a syndrome describing pathological changes in body shape that include peripheral fat loss and/or central fat accumulation. It is an important and worrisome complication of ART that can potentially impact quality of life, treatment adherence, and survival. The objective of this study was to assess ethnicity and gender differences in prevalence, type, and severity of ART-associated lipodystrophy in HIV-positive individuals in the Ontario Cohort Study (OCS).

Methods: The OCS is a prospective cohort study of HIV-positive patients in Ontario. This was a cross-sectional analysis of the OCS utilizing patients enrolled between 1996 and 2009. Lipodystrophy was assessed in the OCS with the ACTG baseline body image questionnaire. Lipodystrophy was defined as at least one major or two minor self-reported changes of peripheral lipoatrophy and/or central lipohypertrophy. Prevalence, type, and severity were compared by ethnicity (Black, White or Other) and gender using Chi-square tests and Cochrane-Armitage tests. Univariate and multivariate logistic regression analyses were used to identify predictors of lipodystrophy.

Results: Data were available for 778 participants; 659 men and 119 women. There were 517 White patients, 121 Black patients, and 140 patients of other ethnicities. Overall, 58% of the cohort met the definition for lipodystrophy; 41% experienced peripheral lipoatrophy and 31% experienced central lipohypertrophy. Whites reported more peripheral lipoatrophy (45% vs. 30% in Blacks vs. 36% in others, p=0.004) and abdominal lipohypertrophy (49% vs. 46% in Blacks vs. 45% in others, p=0.04); these ethnic differences were also observed in males (peripheral lipoatrophy: 46% vs. 32% in Blacks vs. 36% in others, p=0.05 and abdominal lipohypertrophy: 49% vs. 46% in Blacks vs. 45% in others, p=0.04); these ethnic differences were also observed in males (peripheral lipoatrophy: 46% vs. 32% in Blacks vs. 37% in others, p=0.05 and abdominal lipohypertrophy: 49% vs. 32% in Blacks vs. 43% in others, p=0.04), but not females. Males reported more peripheral lipoatrophy than females (43% vs. 30%, p=0.01), while females had more
central lipohypertrophy (47% vs. 28%, p<0.0001) and mixed fat re-distribution (20% vs. 12%, p<0.0001) than males. Multivariate regression analyses revealed Black women to be most likely to report lipodystrophy (OR 2.01, p=0.03), particularly lipohypertrophy (OR 3.78, p<0.0001).

Conclusions: Lipodystrophy is a common side effect of ART experienced by 58% of patients in this cohort. Ethnicity and gender are important factors influencing the development, nature, and distribution of lipodystrophy. Combining lipoatrophy and lipohypertrophy into a single lipodystrophy entity does not appear to be appropriate when considering differences by ethnicity and gender. The fact that Black women were most likely to report lipohypertrophy may have important implications for ART roll out endeavours in Africa.

Abstract: P_32

Comorbidities / coinfections

Prevalence and Predictors of Postpartum Depression among HIV+ Women


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Background: While it is known that prevalence rates for mental health disorders, such as depression, are higher among HIV-infected women than among HIV-negative women, and high rates of depression are associated with HIV disease progression, reports investigating postpartum depression rates or their associated psychosocial correlates in HIV-infected women are sparse at best. The objective of this pilot study was to estimate the prevalence of postpartum depression (PPD) in a clinical sample of HIV+ women using two validated depression screening instruments and identify factors associated with depression during the postpartum period.

Methods: In this ongoing study, 49 HIV+ postpartum women, who delivered a child ≤ 2 years ago were recruited from three HIV outpatients clinics located in Birmingham and Montgomery, AL. Women were screened for depression symptomatology using the Edinburgh Postnatal Depression Scale (EPDS) and the Center for Epidemiologic Studies Depression Scale (CES-D). Furthermore, socio-demographic and clinical information was ascertained at time of screening. Univariate analyses of socio-demographic and clinical characteristics were conducted using chi-square and Fisher’s exact statistics were appropriate.

Results: Participants were predominately of African-American race (41/49), ranging in age from 16 to 38 years (mean=27.5 years). 42.8% of participants screened positive for depression using both the EPDS (score≥10) and CES-D scales (score≥16). Using the EPDS’s cut-off for major depression (score≥12), 62.5% of women who screened positive for depression screened positive for a major depressive disorder (MDD) and 50% self-reported a history of mental health diagnoses. Women who screened positive for depression and MDD were younger than those not screening positive for depression (mean 25.2yrs vs. 29.1yrs, p=0.0086 and 23.6yrs vs. 28.9yrs, p=0.0008, respectively). Furthermore, women who delivered their first child were more likely to screen positive for depression (66.6% vs. 29.0%, p=0.01). Also, women with a history of mental health diagnoses and/or previous referral to a mental health provider were more likely to screen positive for depression (mean 25.2yrs vs. 29.1yrs, p=0.0086 and 23.6yrs vs. 28.9yrs, p=0.0008, respectively). No difference was seen in depression scores and time of depression screen post delivery.

Conclusion: Results from this pilot study indicate high prevalence rates for PPD, particularly MDD, among HIV+ postpartum
women in Birmingham and Montgomery, AL within two years post delivery. Therefore, routine depression screening and treatment should be made available during postpartum and prenatal care of HIV+ women given their frequent history of mental health disorders preceding the postpartum period. Particular attention should be given to women at younger age, ≤25yrs of age, and primigravidae women anticipating negative health outcomes previously associated with depression diagnosis, such as non-adherence to medical care, which have shown to be detrimental to optimal clinical outcomes of HIV disease.

Abstract: P_33

Comorbidities / coinfections

The wHEALTH Intervention: peer-delivered case management to improve HIV-positive women's quality of life, social support, coping, and mental health

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Introduction: HIV-positive women face not only a chronic illness and complex medical demands, but also extensive social challenges, including access to health care and community services, financial assistance, and social support. The risk for depression is significantly elevated in HIV infection and is associated with poor social support and quality of life. The HIV/AIDS paradigm shift from acute illness to chronic disease coupled with persisting stigma has enhanced the generation of multidisciplinary care networks, including case management, to address the complex needs of PHAs. The Women’s HIV Empowerment Through Life Tools for Health Intervention (wHEALTH) is a community-based research project (CBR) studying how peer-delivered, strength-based case management impacts the health-related quality of life (HRQoL) of HIV-positive women. Secondary objectives are to evaluate whether wHEALTH decreases depression levels, improves coping skills and increases perceived social support among HIV-positive women.

Methods: The wHEALTH intervention is a unique case management approach that works with participants to utilize their strengths and resources to address life challenges. HIV-positive women who understand challenges faced by their peers act in the capacity as ‘case manager’ delivering the intervention. wHEALTH was compared to support programs offered by AIDS service organizations across Ontario. Since June 2008, 104 HIV-positive women have enrolled in the wHEALTH study representing multiple communities in central west Ontario. Thus far 67 HIV-positive women have received a support intervention including 22 women in Hamilton and 45 women in Toronto.

Results: HIV-positive women overwhelmingly value the proactive, peer-delivered case management approach compared to community-based support. The wHEALTH intervention has not only enabled women to feel supported and understood as women living with HIV, but has also built women’s awareness of community-based support services. Statistical analysis of the impact of the wHEALTH intervention on outcomes including physical and mental health-related quality of life, depression, coping strategies and perceived social support will be explored in greater depth. A manual for HIV-positive women acting in the capacity as a peer case manager generated out of this project will also be presented.

Conclusions: The goal of this project is to provide evidence for developing innovative and culturally relevant support services for HIV-positive women, and this intervention may identify effective ways to link women to community services, reduce social isolation, improve access to and retention in care and highlight how the social determinants of health impact HRQoL. Although there are unique issues that peer case managers should consider when working with other HIV-positive women, including self-
disclosure of personal information, setting and maintaining boundaries and self-care strategies, peer case management integrates the strengths-based case management model with peer-based support. Peer case management can be a mutually empowering experience for both the client and the peer case manager, facilitating a unique level of sharing compared to the traditional case manager-client relationship.

Abstract: P_34

Hormone interactions / pregnancy / menopause

Age at menopause and menopausal-related symptoms in Thai HIV-infected women


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Introduction: With highly active antiretroviral therapy (HAART), HIV-infected women are living longer and more are entering menopause. Both HIV and HAART can cause loss of bone mineral density and accelerated menopause; the latter is likely affected by increases in follicular stimulating hormone. These can lead to long-term poor quality of life (QOL). There are no reports on age at menopause and menopausal-related symptoms in HIV-infected Asian women.

Materials & Methods: A cross sectional study was performed at the Thai Red Cross AIDS Research Centre in Bangkok, Thailand during May-June 2010. The inclusion criteria were Thai HIV-infected women age > 40 years who did not use hormonal replacement therapy at least 8 weeks prior. The Menopause-Specific Quality of Life QOL and modified Greene Climacteric Scale were used to evaluate menopausal-related symptoms in the past 30 days. The SF-36 questionnaire was used to evaluate general QOL. The main objective is to identify age at menopause and to evaluate the menopausal-related symptoms and QOL in menopausal and non-menopausal HIV-infected women. Menopause was defined as having the last menstrual period > 1 year ago.

Results: 133 HIV-infected women were enrolled; median age was 45.7 (42.3 - 49.1) years and CDC clinical classifications A:B:C were 51:35:14%. 99% was using HAART. Median CD4 was 608 (421 - 802) cells/mm³, and 92% had HIV-RNA <1.7log₁₀ copies/ml. 42 of 133 women reached menopause. The median age at menopause was 44.4 (38.1 - 49.1) years. The menopausal women had more menopausal-related symptoms in the sexual domain compared to non-menopausal women e.g. change in sexual desire (p=0.01), vaginal dryness during intercourse (p=0.02), dyspareunia (p=0.02), and avoiding intimacy (p=0.03). No differences in vasomotor, psychosocial, and physical domains between groups were found. In addition, the general QOL scores were not different.

Conclusion: The age at menopause in HIV-infected Thai women was 5 years earlier than that in healthy Thai women from published reports. Menopausal HIV-infected Thai women had higher menopausal-related symptoms in the sexual domain that could be alleviated by specific interventions such as topical hormonal therapy. More studies are needed to investigate the cause and appropriate interventions for accelerated menopause in HIV-infected women.
Abstract: P_35

Hormone interactions / pregnancy / menopause

Contraceptive prevalence before pregnancy and after delivery in HIV infected women attending family care program at an urban clinic in Kampala.

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Background: UDHS 2006 reports the unmet need for family planning in Uganda at 41%. World population report (2009) puts Uganda’s fertility rate at 6.1 children per woman and HIV prevalence stagnated at 6.7%. It is hypothesized that:

a) condom use amongst HIV infected women will be high for prevention of re-infection and family planning.
b) More reliable and permanent contraceptive methods will be chosen by pregnant HIV+ post natal for family planning.
c) Pregnancy outcomes for women enrolled in family care program will be good as these clients receive specialized HIV care and treatment.
d) Receiving HAART from a comprehensive family-based HIV care program will lead to women having increased fertility desire especially as they regain optimal health with anti-HIV drugs.

Reports have suggested that ART maybe associated with an increase in unplanned pregnancies (Homsy, 2006; Mohohlo, 2006). Due to drug interactions (for HAART and opportunistic infections) not yet fully studied, the effectiveness of these contraception methods may be altered. Therefore the women using these methods of contraception (as opposed to sterilization) are still at a fairly increased risk of pregnancy and thus future fertility. Maeir(2008) suggested the need for more studies to explicitly address whether access to ART is associated with changes in fertility desire and fertility outcomes. Fertility desire and contraception use go hand-in-hand.

Materials and Methods: A retrospective cohort study where 70 medical charts of pregnant women enrolled in Family-based HIV care program between January 2007 and January 2009 were reviewed. We reviewed contraception choice recorded on medical chart before pregnancy, pregnancy outcome, contraceptive choice recorded 3 months after delivery and general clinical condition given by WHO staging on last clinic visit before delivery. Data was collected using Excel spreadsheet. Data analysis was done using STATA®.

Results: Twenty six women were pregnant at time of joining program, 44 women got pregnant while in program. Contraceptive prevalence was 63.6%(95% CI 62.1-70.7, n=44) amongst the women before pregnancy. Less than half (45.5%) of these women reportedly used condoms for contraception while 16 women (36.4%) chose abstinence as method of contraception. Six women (13.6%) used hormonal methods. There were 67 (95.7%, n=70) live births and 3 pregnancy losses. There was a significant reduction in contraceptive prevalence (58.6%, p=0.0001, n=70) amongst the women after pregnancy. Abstinence was reported in 4 women (5.7%) while 3 women (4.3%) had hysterectomies and used condom. Most mothers (75.7%, n=70) were in WHO stage I and II at time of pregnancy.

Conclusions: Contraceptive prevalence after delivery is low amongst this cohort of women enrolled in family HIV treatment program. Condom use was below optimum. Use of more reliable dual (before pregnancy) and permanent methods (after pregnancy) was less than average. Pregnancy outcomes were good. This could imply that access to HAART increased fertility desire amongst HIV+ women in program.
Abstract: P_36

Hormone interactions / pregnancy / menopause

High Prevalence of Unintended Pregnancies in HIV-positive Women of Reproductive Age in Ontario, Canada

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Background: There is much speculation that rates of unintended pregnancy in HIV-positive women are high, but there are little data. This study aimed to investigate the rate of unintended pregnancies in an HIV-positive female population of reproductive age in Ontario, Canada and the predictors for these events. This is considered important in order to bring the discussion of pregnancy planning into routine HIV care and increase the prevalence of planned pregnancies.

Methods & Materials: A cross-sectional study was carried out using a 189-item self-administered survey entitled “The HIV Pregnancy Planning Questionnaire” to complete a main study on pregnancy desires and intentions of HIV-positive women of reproductive age (18-52) living in Ontario. The current analysis is a secondary analysis on unintended pregnancy. The recruitment was carried out between October 2007 and April 2009 from 38 sites and was stratified to match the geographic distribution of HIV-positive women living in Ontario. The analysis focused on questions relating to pregnancy and of particular interest whether their last pregnancy had been intended. Logistic regression models were fit to calculate unadjusted and adjusted odds ratios for significant predictors of last pregnancies being unintended. Happiness with the last pregnancy being unintended was assessed and was compared by ethnicity using the Breslow Day test of homogeneity.

Results: From the 490 participants in the main study, 416 (85%) HIV-positive women had been pregnant at least once prior to the survey. Their median age was 38 (IQR, 33-44). 59% were born outside of Canada, 51% were currently living in Toronto, 47% were of African ethnicity and 74% were currently on antiretroviral therapy. Of the 416 respondents, 56% (95% CI, 51%-61%) identified that their last pregnancy was unintended. In the multivariable model, the significant predictors of unintended pregnancy were: never being married (p < 0.0001), being born in Canada (p < 0.01), or living a longer time in Canada for those born in other countries (p = 0.02) and having given birth to no more than one child (p < 0.001). Women reported feeling less happy about the pregnancy if it was unintended versus intended (p < 0.01) and ethnicity did not impact the level of happiness.

Conclusions: Prevalence of unintended pregnancy was high in this HIV-positive female population. Planning pregnancy is extremely important to enable appropriate management in order to decrease foetal and maternal complications and to reduce vertical and horizontal transmission. Programs to increase the planning of pregnancy for HIV-positive women are urgently needed. Understanding the groups at highest risk can help in the development of these programs.
Abstract: P_37

Hormone interactions / pregnancy / menopause

Contraceptive Use among Young Zambian Women: A Description from a Heterosexual HIV Transmission Study

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Introduction: Discordant and concordant positive couples are identified at the Zambia Emory HIV Research Project (ZEHRP) for clinical trials of HIV prevention strategies including vaccines. These trials exclude pregnant women and require women to prevent pregnancy during the trial. We investigate the HIV and contraceptive profile of young women at enrollment in a heterosexual transmission (HT) study.

Methods: Between January 2002 – February 2009, 2,971 discordant (34% M-F+, 28% M+F-) and concordant positive (38% M+F+) couples were enrolled. 25% of women were < 24 years; 249/748 were M+F+ (33%), 249/748 were M+F- (33%) and 250/748 were M-F+ (33%). Past medical history and contraception use was collected at enrollment. Descriptive and bivariate statistics describe contraceptive experience.

Results: Of women in M+F+ couples, 109/195 (56%) reported first sexual intercourse at ≤ 16 years; in M+F- couples, 112/232 (48%) and in M+F+ couples, 138/219 (63%). Of girls 16-19 years, 87/102 (85%) had given birth at least once (28 M+F+, 23 M-F+, 36 M+F-) as had 621/646 (96%) of women 20-24 (221 M+F+, 201 M-F+, 199 M-F-). 63% of women ≤ 24 were HIV+ mothers. 51% of young women in M+F+ couples had never used oral contraceptives (48% of M+F- and 59% of M-F+) and 80% had never used injectable contraceptives; 70% in M+F- and 77% in M-F+ couples. 99% of M+F+ had never used Norplant/implants; 100% in M+F- and 98% M-F+ couples. IUCD had not been used by most young women (99% M+F+, 99% M+F-, and 98% M-F+).

Conclusions: Young women were found to be vulnerable to HIV and to have given birth at very young ages. They had some experience with oral contraceptives (48-59%) but not long term methods. Use of long acting user independent methods is needed for HIV prevention trials. HIV and family planning education at ZEHRP is targeting this group.

Abstract: P_38

Hormone interactions / pregnancy / menopause

IUD and contraceptive implants: perceptions and experience of clients and providers in a clinical trial screening service

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Introduction: In the context of the growing AIDS epidemic and high fertility in Sub-Saharan Africa, contraception use is essential in preventing the vertical transmission of HIV, AIDS orphans and maternal mortality. Pregnancy prevention is also critical in the context of HIV vaccine trials, which draw from traditionally high fertility risk groups. Intrauterine devices (IUDs) and contraceptive implants are user-independent, highly effective, safe and inexpensive, yet underutilized in Zambia. Provider and user perceptions are strong indicators of contraceptive use, yet little is known about their knowledge, attitudes and practices of IUDs, implants and post-partum contraception.
**Methods:** Between June and August 2009, two mixed methods surveys were used to measure the knowledge, attitudes and practices of IUDs, implants, post-partum insertion and pregnancy termination among pregnant women (n=46) and clinical care providers (n=48). Questionnaires were administered during couples testing and counseling at Zambia Emory HIV Research Project-affiliated district clinics in Lusaka, Zambia. Data was analyzed using thematic coding to examine relationships between knowledge, attitudes and practice of IUD, implant and post-partum insertion.

**Results:** Results indicate strongly positive attitudes towards IUDs, implants and post-partum insertion, but low knowledge for women and moderate for providers. Misconceptions and rumors persist and are indicated as major barriers to method approval. Few providers are trained (IUDs: 29%, implants: 26%, postpartum IUDs: 10%), but interest in future training is high (IUDs: 94%, post-partum IUDs: 90%).

**Conclusions:** There is a strong need for post-partum IUDs and implants in Lusaka. Addressing the myths, misconceptions and lack of provider training is essential in the rollout of postpartum IUDs and implants in general practice as well as in clinical trial recruitment.

**Abstract: P_39**

**Hormone interactions / pregnancy / menopause**

**Counselling women who are diagnosed with HIV in pregnancy**

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**Background:** Within the province of British Columbia, Canada, HIV testing in pregnancy occurs via an opt-out approach. Currently 85-90% of women accessing pre-natal care receive HIV testing. In BC, women who test HIV positive in pregnancy are referred to the Oak Tree Clinic, the provincial tertiary-level care provider for HIV positive women, pregnant women and children. An inter-professional team delivers comprehensive reproductive health care that includes obstetric/gynecologic physicians, adult/pediatric infectious disease specialists, nurse clinician, nurse practitioner, social worker, pharmacist and dietitian.

**Materials & Methods:** Within the clinic’s inter-professional team, the social worker and/or nurse clinician take the lead roles in providing counselling support to pregnant women adjusting to an HIV diagnosis. The cumulative experience of supporting newly-diagnosed women has served to identify several key components within the counselling intervention.

**Results:** Post-test counselling for newly diagnosed pregnant women follows the same guidelines as standard post-diagnosis counselling, but the context of the pregnancy creates differences in the adjustment process and journey to acceptance of diagnosis. These processes take place in tandem with the process of preparing for the arrival of a new baby, to create a complex mix of emotions. The initial excitement/anticipation of pregnancy is often initially eclipsed by the emotional impact of an HIV diagnosis. The majority of pregnant women are present in a state of shock regarding their diagnosis. Addressing their fears for the future and own health prognosis, as well as that of their fetus, take precedence. Counselling must begin with re-enforcing education regarding the safety of pregnancy with anti-retroviral therapy, assurances regarding the strong likelihood of an un-infected baby, and the role of treatment in providing a long, productive life as a mother. Women also express a profound sense of grief and loss, and this often is linked to a shift in her relationship with her partner, as well as an assessment of family and peer supports. Women often struggle to determine who, if anyone, will be a safe and supportive person to disclose to. Due to tendency toward social isolation that comes with a new diagnosis, most women require close monitoring for depression throughout the pre and post-partum periods.
The hopeful prospect of a new baby often works to move women through to a stage of acceptance of their diagnosis - once educated regarding HIV, and supported to adjust to their new reality, women are eager to focus on their role as mothers.

**Conclusions:** Comprehensive counselling support, that is specifically geared to the needs of women dealing with a new HIV diagnosis within the context of pregnancy, is vital to moving through the shock and grief of a new diagnosis, and potential change in her relationship with her spouse/partner. Support must be women-centered, acknowledging each women's unique journey to acceptance. A recent clinic-initiated pregnancy and post-partum support group, developed in partnership with community-based AIDS Service organizations, may prove a useful tool in building peer support and assisting women in breaking through their isolation.
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