

Danielle Tate, MD¹; Fernand Samson, MD¹; Mary Christiansen, MD¹; Lindsay Meyers, MD²; Kitty Cashion, RN, MSN¹; Jenny Wang, MD¹; Marina Santa Cruz, MD¹ and Luis Gomez, MD¹; ¹Obstetrics and Gynecology, University of Tennessee, Memphis, Tennessee, ²Obstetrics and Gynecology, Carolinas Healthcare System, Charlotte, North Carolina

Session: 246. HIV and Women
Saturday, October 7, 2017: 12:30 PM

Background. Combined antiretroviral therapy (cART) in human immunodeficiency virus (HIV)-infected pregnant women reduces the maternal-to-child transmission (MTCT) rate from a baseline of 25% to less than 2% when the HIV viral load (VL) is <1,000 copies/mL. The traditional cART is composed of 2 nucleoside reverse transcriptase inhibitor (NRTI-) and 1 protease inhibitor (PI)-class drugs. There is limited information on the effects of VL reduction in pregnancy with alternative cART modalities containing either an integrase strand transfer inhibitor (INSTI) or a non-NRTI (nNRTI).

Objective: We sought to compare the HIV VL near delivery in HIV-infected pregnant women receiving 2 NRTI plus 1 PI (traditional cART) to those receiving 2 NRTI plus 1 INSTI or 1 nNRTI (alternative cART).

Methods. Prospective cohort study of pregnant HIV-infected women from 2010 through 2016 receiving care in our high-risk obstetric infectious disease clinic. Women were included if they had at least 2 VL (before and after intervention) obtained during pregnancy. Our primary outcome was the rate of VL <1,000 copies/mL near delivery.

Results. We collected data in 274 subjects (traditional cART=156, alternative cART=118). After adjusting for confounders, the rate of VL <1,000 copies/mL near delivery was comparable among women receiving the traditional treatment (121/156, 77.6%) to the alternative cART (101/118, 85.6%); $P = 0.2765$, RR 1.474 (0.733–2.967). More women in the alternative cART group (66.9%) had undetectable VL near delivery compared with the traditional cART group (46.1%); $P = 0.0103$, RR 2.002, 95% CI 1.178–3.403. There were 5 cases (1.8%) of MTCT: 1 in the traditional cART group and 4 in 1 in the alternative cART group.

Conclusion. After adjusting for confounders, our cohort of women receiving either traditional or alternative cART regimens achieved similar rate of HIV VL <1,000 copies/mL near delivery. Further studies are needed to replicate our findings.

Disclosures. All authors: No reported disclosures.

2241. Prevalence and Risk Factors for Intimate Partner Violence in Women Living with HIV in Uganda

Cynthia R. Young, MD, MSc¹; Angela Kaida, PhD²; Jerome Kabakyenga, PhD³; Winnie Muyindike, MBChB, MMED³; Jeffery N. Martin, MD, MPH⁴; Peter W. Hunt, MD⁵; David R. Bangsberg, MD, MPH⁶; Jessica E. Haberer, MD, MS⁸ and Lynn T. Matthews, MD, MPH⁷; ¹Division of Infectious Diseases, Brigham and Women's Hospital, Boston, Massachusetts, ²Faculty of Health Sciences, Simon Fraser University, Burnaby, BC, Canada, ³Maternal Newborn and Child Health Institute, Mbarara University of Science & Technology, Mbarara, Uganda, ⁴Department of Internal Medicine, Mbarara University of Science & Technology, Mbarara, Uganda, ⁵Epidemiology & Biostatistics, University of California San Francisco, San Francisco, California, ⁶Department of Medicine, University of California San Francisco, San Francisco, California, ⁷Oregon Health & Science University-Portland State University School of Public Health, Portland, Oregon, ⁸Center for Global Health, Massachusetts General Hospital, Boston, Massachusetts

Session: 246. HIV and Women
Saturday, October 7, 2017: 12:30 PM

Background. Intimate partner violence (IPV), behavior within an intimate relationship that causes physical, sexual, or psychological harm, is a significant global health problem. IPV is associated with HIV incidence, reduced antiretroviral (ART) adherence, and a lower likelihood of viral load suppression. To inform future IPV interventions we examined IPV prevalence and IPV risk factors among women living with HIV (WLWH) in Uganda.

Methods. We utilized prospective data from women enrolled in the Uganda AIDS Rural Treatment Outcomes (UARTO) cohort study of HIV-infected adults receiving ART between 2011 and 2015. Bloodwork (CD4 cells/mm³, HIV-RNA) and interviewer-administered questionnaires (socio-demographics, behavior, and health outcomes) were completed quarterly. Sexual and reproductive health data, including IPV and relationship dynamics, were collected annually. We performed analyses with the primary outcome of experiencing physical or sexual IPV at any time during the follow-up period (yes vs. no). Multivariate logistic regression was used to assess socio-economic and clinical factors associated with IPV.

Results. A total of 455 WLWH were included. Median age was 36.3 years, 43% were married, and median time on ART was 4 years. At baseline, 131 women (29%) reported a history of experiencing IPV. Over study follow-up, 68 women (15%) reported experiencing current physical or sexual IPV at least once. Of those 68 women, 22 (32%) experienced physical violence only, 30 (44%) experienced sexual violence only, and 16 (24%) experienced both. In the adjusted model, younger age per year (AOR 1.06, 95% CI 1.04–1.10), hazardous drinking (AOR 3.31, 95% CI 1.14–9.63), and being married (AOR 2.64, 95% CI 1.47–4.72) were associated with higher odds of experiencing current IPV.

Conclusion. Experiences of physical and sexual IPV are common among women in this study, and many experienced both sexual and physical violence. These results highlight the need to develop effective and integrated IPV screening and treatment interventions for women accessing HIV care. Further research is needed to better understand how alcohol use, younger age, and marital status play a role in the risk of IPV, to inform development and testing of IPV interventions for WLWH.

Disclosures. J. E. Haberer, Merck: Consultant, Consulting fee; Natera: Shareholder, Stock ownership

2242. Effective Contraceptive Use Following Unplanned Pregnancy Among Ugandan Women Living with HIV

Jana Jarolimova, MD¹; Kara Bennett, MSc²; Jerome Kabakyenga, PhD³; Jeffery N. Martin, MD, MPH⁴; Peter Hunt, MD⁵; Jessica E. Haberer, MD, MS⁶; David R. Bangsberg, MD, MPH⁷; Angela Kaida, PhD⁸ and Lynn T. Matthews, MD, MPH⁶; ¹Medicine, Massachusetts General Hospital, Boston, Massachusetts, ²Bennett Statistical Consulting Inc, Ballston Lake, New York, ³Maternal Newborn and Child Health Institute, Mbarara University of Science & Technology, Mbarara, Uganda, ⁴Epidemiology & Biostatistics, University of California San Francisco, San Francisco, California, ⁵University of California, San Francisco, San Francisco, California, ⁶Center for Global Health, Massachusetts General Hospital, Boston, Massachusetts, ⁷Oregon Health & Science University-Portland State University School of Public Health, Portland, Oregon, ⁸Faculty of Health Sciences, Simon Fraser University, Burnaby, BC, Canada

Session: 246. HIV and Women
Saturday, October 7, 2017: 12:30 PM

Background. Prevention of unplanned pregnancy is critical for women living with HIV (WLWH) to safely achieve their reproductive goals, and forms the second prong of the Global Plan to eliminate perinatal transmission of HIV. Family planning services need to identify women at risk of unplanned pregnancy to be effective. This study examines the relationship between unplanned pregnancy and subsequent use of effective contraception among WLWH in Uganda.

Methods. This is a retrospective analysis of data from the Uganda Aids Rural Treatment Outcomes study, which was a longitudinal cohort of individuals initiating antiretroviral therapy. Women with incident pregnancies between 2011 and 2013 who reported on intent of the pregnancy were included in this analysis. The exposure of interest was referent pregnancy intent, using questions derived from the CDC PRAMS instrument. The primary outcome was self-report of effective contraceptive use 9–15 months post-partum (hormonal methods, intrauterine device, sterilization, or consistent condom use).

Results. Among 455 women who enrolled with a baseline median age of 29 years, CD4 count 403 cells/mm³, and living with HIV for 3.8 years, there were 110 incident pregnancies with reported intent. Of these pregnancies, 50 (45%) were reported as unplanned, and 60 (55%) as planned. Postpartum, 51% of women with unplanned and 44% with planned pregnancy reported effective contraception ($P = 0.52$). In models adjusted for pregnancy intent, only partner pregnancy desire was significantly associated with contraceptive use, with aRR 0.37 (95% CI 0.18–0.76, $P = 0.01$) for effective contraceptive use when the participant reported that her primary partner "definitely or probably" wants her to have a child compared with "never discussed or don't know".

Conclusion. Almost half of incident pregnancies among WLWH in this cohort were unplanned. Unplanned pregnancy was not associated with effective contraceptive use post-partum. These results demonstrate continued unmet need for family planning services in this population. Creative strategies to support the planning of families among women living with HIV are needed. Engaging men is likely to be a critical approach.

Disclosures. J. E. Haberer, Merck: Consultant, Consulting fee; Natera: Shareholder, Stock ownership

2243. Association of Self-Reported Adherence and Antiretroviral Drug Concentrations in Hair Among Youth with Virologic Failure in Tanzania

Zachary Tabb, BS¹; Blandina Mmbaga, MMED, PhD^{2,3}; Monica Gandhi, MD, MPH⁴; Alexander Louie, BS⁴; Karen Kuncze, BS⁴; Aisa Shayo, MMED³; Elizabeth Turner, PhD^{5,6}; Coleen Cunningham, MD^{5,7} and Dorothy Dow, MD, MScGH^{2,5,7}; ¹The Alpert Medical School of Brown University, Providence, Rhode Island, ²Kilimanjaro Christian Medical Centre-Duke Collaboration, Moshi, Tanzania, United Republic of, ³Kilimanjaro Christian Medical Centre, Moshi, Tanzania, United Republic of, ⁴University of California San Francisco, San Francisco, California, ⁵Duke Global Health Institute, Durham, North Carolina, ⁶Duke University, Durham, North Carolina, ⁷Duke University Medical Center, Durham, North Carolina

Session: 247. HIV: Pediatrics
Saturday, October 7, 2017: 12:30 PM

Background. Youth living with HIV (YLWH) struggle to achieve complete adherence to antiretroviral therapy (ART). Assessing adherence via self-report can over-estimate adherence. Analysis of ART concentration in hair samples objectively assesses adherence. This study compared self-reported adherence vs. ART concentrations in hair to determine which measure of adherence associated most strongly with virologic outcomes in YLWH.

Methods. This was a cross-sectional study that enrolled 280 YLWH aged 11–24 years, who attended HIV youth clinic at Kilimanjaro Christian Medical Center or Mawenzi Regional Referral Hospital in Moshi, Tanzania. Inadequate adherence by self-report was defined as reporting any missed ART doses in the last two weeks on at least one of two different survey items. Hair samples and HIV-1 RNA measurements were collected concurrently. Viral failure was defined as plasma HIV RNA > 400 copies/mL. Hair ART levels were performed at the University of California, San Francisco Hair Analytical Laboratory. Statistical analyses were performed using Wilcoxon rank-sum test.

Results. Of 280 participants, 21 were not receiving ART, 27 had insufficient hair for sampling, and 5 had an incorrect ART reported and tested and were excluded. Among the included 227 YLWH, 72 (32%) self-reported inadequate adherence. Virologic failure was demonstrated in 40% of youth. Virologic outcomes were not significantly associated with self-reported adherence ($P = 0.54$), but were significantly and strongly associated with higher ART concentration in hair ($P < 0.001$) for all drugs except atazanavir (ATZ) (Table 1).

Conclusion. Virologic failure rates among YLWH in Tanzania were staggeringly high (40%). In contrast to self-reported adherence, higher ART concentrations in hair were significantly associated with virologic outcomes in this population for all ARTs (except atazanavir, likely due to lack of power). This work adds to the growing literature that ART concentrations in hair represent an accurate adherence measure in youth. Identifying an ART concentration threshold associated with virologic suppression may provide a noninvasive, cost-effective ART adherence assessment tool for YLWH in settings with limited second and third-line treatment options.

Table 1. Drug Concentration in Hair by Viral Load Status

ART Analyzed	Viral Suppression (N = 136)			Viral Failure (N = 91)			p
	N	Median concentration (ng/mg)	IQR	N	Median concentration (ng/mg)	IQR	
ATZ	5	7.09	(2.30-7.12)	8	2.06	(0.75-3.22)	0.11
LPV	28	9.72	(6.32-16.10)	22	0.53	(0.23-1.42)	< 0.001
RTV	33	0.84	(0.61-1.27)	30	0.14	(0.03-0.51)	< 0.001
EFV	53	4.85	(3.11-8.47)	33	0.98	(0.24-3.65)	< 0.001
NVP	50	54.85	(41.90-75.30)	28	34.35	(13.55-59.80)	< 0.001

ATZ=atazanavir; LPV=lopinavir; RTV=ritonavir; EFV=efavirenz; NVP=nevirapine; IQR=inter-quartile range

Disclosures. All authors: No reported disclosures.

2244. Reducing Delays to Antiretroviral (ARV) Receipt in Children Prescribed Post-Exposure Prophylaxis (PEP) for HIV: Meds-in-Hand and Multidisciplinary Team Approach

Rachel Epstein, MD, MA¹; Nicole Penwill, MD, MPH²; Diana Clarke, PharmD³; Sebastian Hamilton, PharmD, MBA⁴; James Moses, MD, MPH⁵ and Ellen Cooper, MD, FIDSA³; ¹Adult and Pediatric Infectious Diseases, Boston Medical Center, Boston, Massachusetts; ²Boston University School of Medicine, Boston, Massachusetts; ³Pediatric Infectious Diseases, Boston Medical Center, Boston, Massachusetts; ⁴Pharmacy, Boston Medical Center, Boston, Massachusetts; ⁵Pediatrics, Boston University School of Medicine, Boston, Massachusetts

Session: 247. HIV: Pediatrics

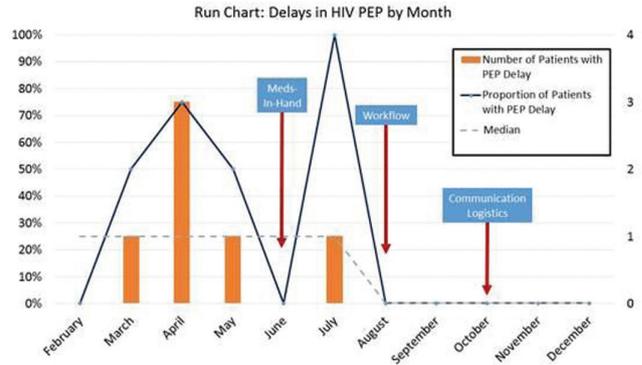
Saturday, October 7, 2017: 12:30 PM

Background. Provision of antiretrovirals (ARVs) for pediatric patients who require HIV post-exposure prophylaxis (PEP) poses many challenges. Many pharmacies do not stock pediatric formulations of ARVs. Prior authorizations and misunderstanding of medication quantity and urgency can delay filling and result in treatment interruptions, risking PEP's efficacy. While 3-day starter packs are standard of care for patients prescribed PEP in the Emergency Department (ED), we are not aware of programs designed to ensure pediatric patients receive the full 28-day course.

Methods. At Boston Medical Center using the Model for Improvement with Plan-Do-Study-Act (PDSA) cycles, we implemented three key interventions: 1) Initiation of "Meds-in-Hand" for patients prescribed PEP during outpatient pharmacy business hours in which the entire course of ARVs is dispensed and handed to the patient in the ED; 2) Establishment of a troubleshooting PEP group email chain for medication receipt after a starter pack is given; and 3) Creation of an ED-Pharmacy workflow to help providers avoid logistic prescription errors. Using run charts, we tracked the proportion of patients who received Meds-In-Hand or a 3-day starter pack over time, and identified delays in full PEP course receipt.

Results. Of the 29 courses of HIV PEP prescribed from our Pediatric ED during 2016, with mean age 16 years (range 1–22 years), the proportion of patients with delays in prescription pick-up that would result in gaps in therapy decreased from 45% (5/11) to 6% (1/18) during the intervention period (Figure 1). During 2 of 5 pre-intervention months, one patient left the ED without a starter pack; all patients in the intervention period left with either a starter pack or Meds-In-Hand. Of patients seen during pharmacy business hours, 50% (2/4) during PDSA cycle 2 and 100% (3/3) during cycle 3 received the full 28-day medication course before leaving the ED.

Conclusion. Patient care measures improved with a multi-disciplinary team approach involving pharmacy, pediatric infectious diseases, and ED improvements in communication and coordination of care. This quality improvement initiative demonstrates simple collaborative interventions to reduce critical delays in HIV prevention for a vulnerable population.



Disclosures. All authors: No reported disclosures.

2245. Persistence of Depressed but Stable Levels of Pediatric Vaccine Induced Antibodies over 16 years in Perinatally HIV Infected Individuals on Combined Anti-Retroviral Therapy

Morouge Alramadhan, MD; Gloria P. Heresi, MD; Weihe Zhang, MD; James R. Murphy, PhD; Abel Castro, MD and German Contreras, MD; Pediatric Infectious Diseases, University of Texas McGovern Medical School, Houston, Texas

Session: 247. HIV: Pediatrics

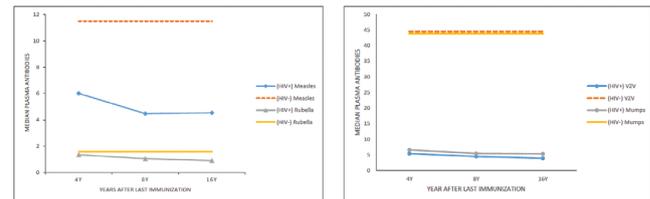
Saturday, October 7, 2017: 12:30 PM

Background. The introduction of combined antiretroviral therapy (cART) markedly improved prognosis and immune competence as indicated by clinical laboratory testing. However, few data are available on the long-term durability of vaccine induced immune responses in perinatally HIV infected individuals over the two decades since cART introduction.

Methods. Perinatal HIV+, 21, on cART who had a history of MMR and/or VZV vaccinations and archived plasma samples collected at 4, 8 and 16 years after last vaccination dose were included. Samples from 11 HIV- individuals were included. Plasma IgG to measles, mumps, rubella and varicella were measured by ELISA

Results. The HIV+ group was in good clinical condition with respect to HIV disease (medians, 31% CD4 cells, 2.0 log₁₀ HIV RNA copies/ml). Levels of vaccine engendered antibodies differed markedly by HIV infection status and by vaccine. Comparison of HIV+ with HIV- antibody levels by vaccine showed the HIV+ levels were 83%*, 55%*, 13%* or 11%** ($P < 0.003$, ** $P = 0.056$ at year 16) of the levels found in HIV- for rubella, mumps, measles and VZV, respectively. The patterns of relationships between HIV+ to HIV- levels of response seen at year 4 were maintained over the 12 years of observation. Over the 12 years of evaluation the antibody concentrations for each vaccine declined slowly, the apparent half-lives of vaccine specific antibodies were 96, 37, 29 and 13 years for mumps, VZV, measles and rubella, respectively.

Conclusion. Despite being on long-term effective cART and having controlled HIV viremia and excellent levels of CD4 cells, perinatally HIV+ individuals have significantly lower levels of antibodies to VZV, measles and mumps vaccinations than HIV- adults. These reduced antibody levels were found at 4 years after immunizations and persisted with the expected slow rates of decline over the following 12 years. The data support the view that there is an HIV associated failure in the establishment, conversion to persisting immunity phase of the responses to vaccinations. Once established antibody levels persist with near normal half-lives.



Disclosures. All authors: No reported disclosures.

2246. Trajectories of Condom Nonuse and Predictors of Trajectory Group Membership Among African-American Adolescents

Maureen Muchimba, DrPH¹ and John Bolland, PhD²; ¹Saginaw Valley State University, University City, Michigan; ²University of Alabama, Tuscaloosa, Alabama

Session: 247. HIV: Pediatrics

Saturday, October 7, 2017: 12:30 PM

Background. Although condom use among adolescents has been researched extensively, fewer studies have captured changes in this behavior over time. The purpose of this study was to identify developmental trajectories of condom nonuse between the ages of 10 and 18 years, and to determine predictors of the trajectory group membership.