560. Immune Recovery of Acute HIV-Treated Patients Is Characterized by an Increase in Immune Senescence

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Background. ARV treatment (ART) administered during acute HIV-infection presents several immunological benefits leading to a better CD4+ T-cell recovery and a diminished HIV reservoir.

Methods. Patients with acute HIV-infection, enrolled in the VIHIA cohort, had blood samples taken at diagnosis and at 2, 6 and 12 months after ART initiation. Flow-cytometry analysis was performed in fresh whole blood. Naïve-(Nv), central memory (CM), effector memory (EM) and terminally differentiated T-cells (TMRA), as well as activation markers were defined using CD3, CD4, CD8, CD45RA, CCR7, CD38, CD31 and HLA-DR markers. CD28 and CD57 were used to identify immunosenescent cells. Fox-P3, CD 25, CD127 and CD45RA were used to identify Regulatory T cells (Treg) and their subsets. To assess changes over time, Wilcoxon-matched-pairs signed rank test was used for each value between baseline and months 2 and 12 independently.

Results. Four patients were diagnosed at Fiebig stage II; 5 patients at Fiebig stage III, 24 patients at stage IV and 5 patients in stage V. All patients received treatment within the first 24 hours of HIV diagnosis. Only 13 patients had flow-cytometry data at baseline and 1 year of follow-up. All subjects were MSM with a mean age of 32 y.o. Mean CD4+ T-cell count was 439 cells/μL and mean viral load was 1.2 million copies/mL (23,379–10 × 10^6 copies/mL) at baseline. The change in T-cell differentiation patterns at 0 and 12 months is shown in Figure 1. Activation markers decreased in all studied subsets at 2 months and furthermore at 12 months. Total T-regs increased from 5.1% to 7.8% at 1 year of follow-up (Figure 2). Immunosenescence markers increased steadily throughout the study in all T-cell subsets, being statistically significant in the total T-cell CD8 population at 12 months of follow-up (Figure 3) unrelated to Fiebig stage.

Conclusion. It has been hypothesized that early ART decreases T-cell immunosenescence; however, in our cohort despite treatment during acute HIV, we observed that at 1 year follow-up immunosenescence markers increased despite a decrease in immune activation and a recovery of T-cell subsets.

Figure 1 (Opción 1). CD4+**(A)** and CD8+**(B)** T Cell Differentiation. NV:CD45RA+, CCR7+; CM: CD45RA-, CCR7+; EM: CD45RA-, CCR7-; TMRA: CD45RA+, CCR7-

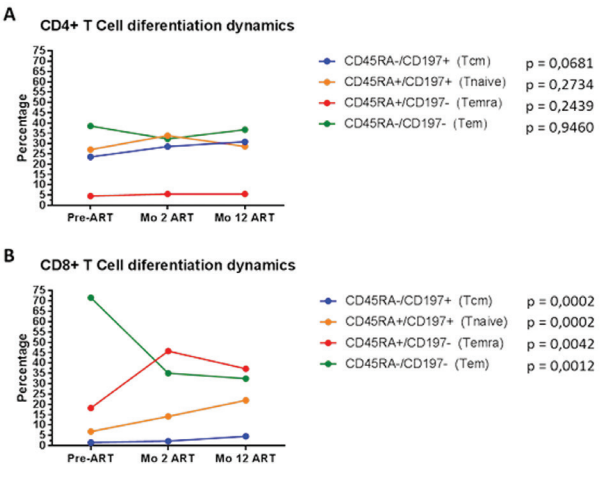


Figure 2. Regulatory T cells. Activated: $CD4^+$, $CD25^+$, $CD127^-$, Fox $P3^{hi}$, $CD45^-$; Naïve:$CD4^+$, $CD25^+$, $CD127^-$, Fox $P3^{low}$, $CD45^+$; Non Tregs(NS): $CD4^+$, $CD25^+$, $CD127^-$, Fox $P3^{low}$, $CD45^-$.

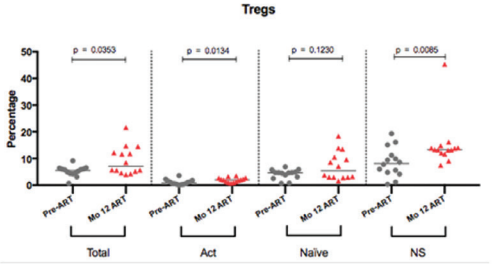
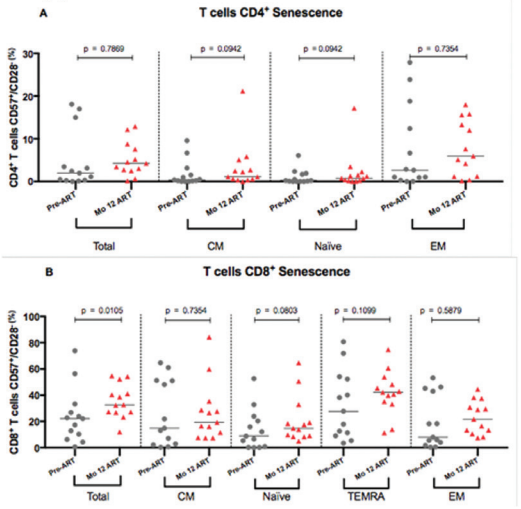


Figure 3. Effects of ART on changes in the percent of $CD28^-$ $CD57^+$ $CD4^+$**(A)** and $CD8^+$**(B)** T cells



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561. Co-occurring Psychosocial Barriers to Viral Suppression Among Men Who Have Sex with Men (MSM) in India

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Background. There is a paucity of data on factors associated with viral suppression in representative populations of HIV-positive MSM in low-middle income country (LMIC) settings. We characterized factors associated with viral suppression among a community-recruited sample of MSM across India with a particular focus on depression, alcohol use and recreational drug use.

Methods. Of 10,024 MSM recruited using respondent-driven sampling (RDS) from 10 Indian cities between August 2016 and April /2017, 1,460 were HIV-positive and eligible for ART. Alcohol dependence was defined as AUDIT score ≥15; severe depression as PHQ-9 score ≥15; recreational drug use included both injection and non-injection use of drugs common in India, excluding marijuana. Prevalence ratios (aPrR) were obtained using multivariable Poisson regression incorporating RDS2 weights and accounting for clustering by site.

Results. Median age was 37 years, 34.1% had at least high school education and 66.0% reported monthly income >$115. Prevalence of viral suppression among HIV+ ART eligible MSM was 66.2% overall, ranging from 35.2% in Bhopal to 76.1% in Madurai with no regional trends. Prevalence of severe depression was 4.0%, alcohol dependence 66.3% and recreational drug use 9.5%. Viral suppression was significantly more common among those who were older and had higher treatment literacy. In analyses that adjusted for these factors and sexual identity, those who reported drug use and had evidence of severe depression had a significantly lower likelihood of being virally suppressed (aPrR 0.38; [95% CI: 0.16–0.89]) than those with neither (*P*-value for interaction = 0.05). Similarly, compared with those who used neither alcohol nor drugs, those using both had a lower prevalence of viral suppression (aPrR: 0.61; [95% CI: 0.40–0.94]) although the interaction did not achieve statistical significance ($P = 0.07$).

Conclusion. In this population of MSM in an LMIC, recreational drug use appeared to be a key barrier to achieving viral suppression. Moreover, the impact of drug use was greater in the context of co-occurring severe depression or co-occurring alcohol dependence. It is critical that HIV programming in India and other resource-limited settings incorporate interventions to address these conditions in differentiated care models to maximize viral suppression.

Disclosures. **All authors:** No reported disclosures.

562. Management and Outcomes of Patients With Acute HIV Infection in an Expanded Testing and Linkage to Care Program

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Background. Persons with acute HIV infection have high viral loads and are highly infectious compared with those with chronic infection. Rapid linkage to care and initiation of therapy, facilitated by new testing algorithms, allows for immunologic preservation and rapid virologic control, which benefits the individual and decreases transmission events.

Methods. We analyzed testing data (2016–2017) from the xTLC Program, a collaborative effort between 13 healthcare centers on the South and West sides of Chicago. For acute HIV infections, we assessed linkage to care, initiation of antiretroviral therapy (ART) and viral suppression across sites.

Results. Of 334 new HIV diagnoses in xTLC, 33 (9.9%) had acute infection across six sites (five acute care hospitals/emergency departments, one clinic). Baseline viral load (VL) was 2.19 million copies/mL (IQR 0.47–5.00) and baseline CD4 count was 440.5/μL (IQR 287.5–568.5). Table 1 shows care continuum outcomes for patients with acute HIV infection.

Table 1: Care Continuum Outcomes for Acute HIV Infections Diagnosed Through X-TLC

Site (N)	Days to Linkage* (IQR)	Days to ART* (IQR)	Days to ≥2 Log Reduction in VL* (IQR)	Days to VL ≤ 200* (IQR)	Retained in Care** (%)	Virally Suppressed (%)
A (1)	27 (27–27)	9 (9–9)	55 (55–55)	55 (55–55)	1 (100.0)	1 (100.0)
B (6)	11 (6–58)	21.5 (7–58)	48 (34–62)	132.5 (48–321)	4 (66.7)	4 (100.0)
C (2)	39 (39–39)	53 (53–53)	95 (95–95)	162 (162–162)	1 (50.0)	1 (100.0)
D (4)	3.5 (1.5–4.5)	4 (3–6)	31 (29–33)	31 (29–33)	3 (75.0)	3 (100.0)
E (14)	8.5 (4–18)	5.5 (4–21)	55 (47–131)	124 (55–162)	10 (71.4)	10 (100.0)
F (6)	14 (13–21)	25.5 (23–34)	92.5 (62–471)	329.5 (186–643)	4 (66.7)	4 (100.0)
Total (33)	11 (5–19.5)	15 (5–27)	58.5 (42–117)	131 (54–188)	23 (69.7)	23 (100.0)

*Median.

**Currently in care.

Conclusion. Patients with acute HIV infection can be successfully managed in existing programs for HIV screening and linkage to care. The xTLC program had a high linkage to care rate, timely initiation of ART, and relatively quick reduction in viral loads. Our outcomes approach those seen for intensive immediate therapy programs, but without additional costs beyond those of the xTLC program. This will likely create similar public health benefits as dedicated programs for rapid initiation of therapy.

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563. *Not Your Parent's Epidemic*: New HIV Diagnoses and the New Patient Cascade of Care in the Bronx, New York

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Session: 61. HIV: Linkage to Care and Viral Suppression in the Care Cascade
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Background. The Bronx was one of the first counties in the United States to describe HIV infection, and with over 29,000 PLWH remains an epicenter of the epidemic and a major driver of US outcomes. The Bronx epidemic was historically most among minorities, with heterosexual (HSP) and IDU risk factors predominating, and poor outcomes along the care cascade. The Bronx epidemic is changing, and multiple efforts have been made to address the high needs of PLWH in the area. Up to date data would be enlightening.

Methods. We identified those age ≥18 newly diagnosed with HIV at Montefiore Medical Center, Bronx, New York in 2013 and 2016. Retrospective review was undertaken of all cases for up to 1 year after diagnosis, including demographics, clinical data, and outcomes along the care cascade. We used univariate, multivariate logistic and cox regression models to identify factors associated with linkage to HIV care (LTC), retention in care (RIC), ART prescribing, and viral load suppression (VLS).

Results. A total of 217 newly diagnosed cases were identified. Demographics included: 137 (63%) male, 77 (35%) female, 3 (1.3%) transgender; 44% Black, 39% Latino; 80% noncommercially insured; 16% unstably housed; risk factor HSP 57%, MSM 30% (38% 2016, 22% 2013 [*P* 0.053]), IDU 0.5%; 36% CD4 < 200. Among those eligible, 191/215 (89%) were LTC (median = 24 days, IQR 9–59); 161/214 (75%; 84% of those LTC) were RIC; ART was prescribed to 175 (81%; 92% of those LTC); and 148/189 (78%; 85% of those on ART) were virally suppressed (median = 126 days, IQR 76–282). In multivariate models, no associations were seen between age, gender, race, risk factor, housing, psychiatric disorder; and outcomes of interest. Compared with public insurance, having commercial insurance was associated with earlier LTC (HR 1.8, 95% CI 1.2–2.6 $P < 0.05$). Active substance use was associated with delayed VLS (HR 0.5, 95% CI 0.2–1.0 *P* 0.04).

Conclusion. The Bronx HIV epidemic has changed dramatically, reflecting new demographics and effective approaches to testing and care across the HIV care cascade. Most of the historical disparities associated with poor outcomes have been eliminated in newly diagnosed PLWH at Montefiore. These findings hold great promise for the future epidemic in the Bronx—and across the US—if the gains can be maintained and replicated.

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564. Higher "No Show" Rates Are Associated with Lower Rates of Retention in HIV Care and Viral Suppression

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Background. Retention in HIV care has become the keystone of effective HIV treatment, but with less than 50% of people living with HIV/AIDS (PLWHA) engaged in care, a demand exists to better address patients' needs and to decrease viral transmission. While we know that missed visits can lead to poor outcomes, the science behind "no show" events, and the relationship of "no shows" to patients falling out of care has not been defined.

Methods. We performed a chart review of 1,179 patients from DUCOM's HIV clinic, the Partnership Comprehensive Care Practice, and examined medical appointment outcomes between July, 2013 and December, 2014. "No show" was defined as a visit not attended, cancelled or rescheduled. An attended visit between January and July 2015 defined a patient as retained. Our aims were to evaluate "no show" events, characterize those who "no show," and determine predictors of (i) *No Show rate (NSR)*, (ii) *Retention (including NSR as a predictor)*, and (iii) *Viral suppression (VS) (including NSR and Retention as predictors)*. We queried three databases Allscripts, Careware, and RedCap, used SPSS for data analysis, and performed multiple linear and logistic regression to assess relationships between potential covariates and the three outcomes.

Results. 80% of patients "no showed" at least once, and 23% of all appointments resulted in "no shows." Nine hundred and forty-one patients (80%) were retained. 85% of all patients were virally suppressed. Gender, zip code, and housing status were not associated with any of the three outcomes. Being older ($P < 0.001$), white race ($P = 0.001$), and private insurance ($P = 0.014$) were associated with lower NSR, while substance use ($P < 0.001$) and mental illness ($P = 0.038$) were associated with a higher NSR. Among other findings, more years positive was associated with greater retention ($P = 0.003$), and notably, a higher NSR was a strong and significant predictor of *not* being retained in care ($P < 0.001$). In multivariate analysis, only NSR ($P < 0.001$) and retention in care ($P = 0.037$) predicted VS.

Conclusion. PLWHA who "no show" are at a higher risk of viral nonsuppression and of falling out of care than those who attend their appointments even after adjusting for confounding variables. Interventions to address "no shows" in a timely manner and identify barriers must be developed in order to prevent patients from falling out of care.

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565. Implementing HIV Rapid Entry in a Community Infectious Disease Practice

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Background. Successful achievement of "90-90-90" HIV care continuum goals depends on increasing diagnosis, linkage to care, and treatment initiation. Recent improvement efforts include immediate linkage and antiretroviral (ARV) therapy access. Outcome data has been reported from projects implemented in academic settings where multiple Ryan White Care Act (RWCA) services are available. The purpose of this project was to assess feasibility of Rapid Entry in a four-physician community ID practice.

Methods. Goals of the Rapid Entry project are: first visit within three business days of diagnosis and ARV start at entry. Outcomes assessed include time to first visit, ARV start, and virologic suppression. Retention in care is assessed at 6 and 12 months. Comparison is made to "standard of care" (SOC; $n = 35$) patients seen during 24 months prior to project implementation. Patients with new HIV diagnosis made while hospitalized were excluded.

Results. Thirty-four patients with new HIV diagnosis started care during project period. Demographics and baseline labs were similar between groups. Four rapid patients were injection drug users (IDU) vs. none in SOC. Time to First visit averaged 13 days (range 1–48) with 12 patients (37%) seen within three business days (SOC 7–189 days, mean 36). 19 patients (56%) started ARVs at the First visit (SOC 1/3%); 23 (68%) by Day 7 (SOC 5/15%). Time to virologic suppression was significantly less in the Rapid group.