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-

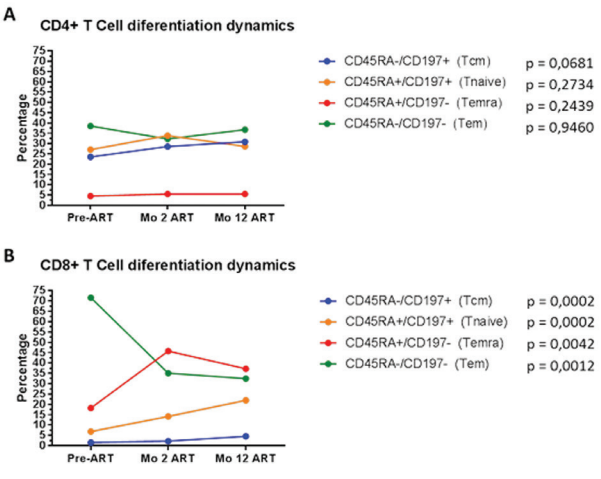


Figure 2. Regulatory T cells. Activated: $CD4^+$, $CD25^+$, $CD127^-$, Fox $P3^{hi}$, $CD45^-$; Naïve:$CD4^+$, $CD25^+$, $CD127^-$, Fox $P3^{low}$, $CD45^+$; Non Tregs(NS): $CD4^+$, $CD25^+$, $CD127^-$, Fox $P3^{low}$, $CD45^-$.

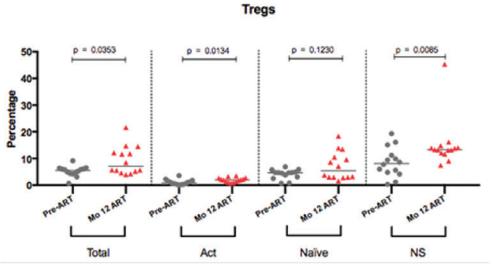
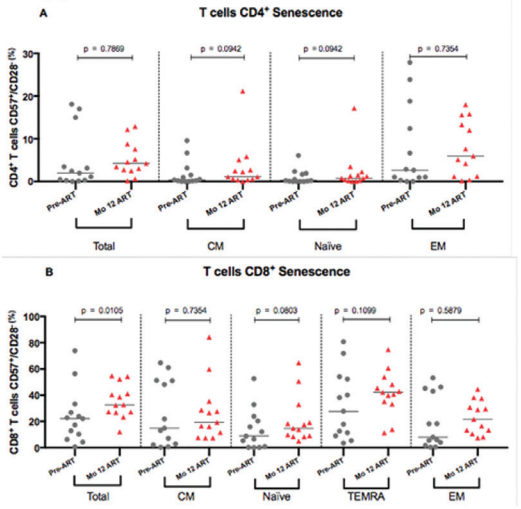


Figure 3. Effects of ART on changes in the percent of $CD28^-$ $CD57^+$ $CD4^+$**(A)** and $CD8^+$**(B)** T cells



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

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.

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

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