Rapid antiretroviral therapy in primary HIV-1 infection enhances immune recovery

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- PMID: 38133660

- DOI: 10.1097/QAD.0000000000003825

Abstract

Objective: :We present findings from a large cohort of individuals treated during Primary HIV Infection (PHI) and examine the impact of time from HIV-1 acquisition to antiretroviral therapy (ART) initiation on clinical outcomes. We also examine the temporal changes in the demographics of individuals presenting with PHI to inform HIV-1 prevention strategies.

Methods: :Individuals who fulfilled the criteria of PHI and started ART within three months of confirmed HIV-1 diagnosis were enrolled between 2009 and 2020. Baseline demographics of those diagnosed between 2009-2015 (before preexposure prophylaxis (PrEP) and universal ART availability) and 2015-2020 (post-PrEP and universal ART availability) were compared. We examined the factors associated with immune recovery and time to viral suppression.

Results: :204 individuals enrolled, 144 from 2009-2015 and 90 from 2015-2020; median follow-up was 33 months. At PHI, the median age was 33 years; 4% were women, 39% were UK-born, and 84% were MSM. The proportion of UK-born individuals was 47% in 2009-2015, compared with 29% in 2015-2020. There was an association between earlier ART initiation after PHI diagnosis and increased immune recovery; each day that ART was delayed was associated with a lower likelihood of achieving a CD4>900 cells/mm3 [HR 0.99 (95%CI 0.98, 0.99), P = 0.02) and CD4/CD8>1.0 (HR 0.98 (95%CI 0.97, 0.99).

Conclusion: :Early initiation of ART at PHI diagnosis is associated with enhanced immune recovery, providing further evidence to support immediate ART in the context of PHI. Non-UK-born MSM accounts for an increasing proportion of

those with primary infection; UK HIV-1 prevention strategies should better target this group.