

LONG-TERM CD4 RECOVERY IN PEOPLE WITH CONTROLLED HIV: AN ANALYSIS OF THE AUSTRALIAN HIV OBSERVATIONAL DATABASE (AHOD)

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Background:

Suboptimal immune recovery despite viral suppression is associated with increased mortality and morbidity. We used data from AHOD to assess factors associated with CD4 count after five years of antiretroviral therapy (ART) in participants with undetectable HIV viral load (VL).

Methods:

AHOD participants who started ART on or after 01/01/1997, had at least five years of combination ART and at least one year with undetectable VL (<50 copies/mL) were included. Follow-up ceased at the first instance of VL ≥1000 copies/mL, second consecutive VL ≥50 copies/mL, ART interruption of >14 days, or last visit.

CD4 was analysed longitudinally in a linear mixed model, which included a flexible smooth term for age, and ART use at the time of the CD4 measurement (cumulative years of ART; ART class: INSTIs, PIs or NNRTIs; dual vs triple combinations; background NRTI). Other covariates included in the model were sex, HIV-exposure, smoking status, Indigeneity, nadir CD4, VL blips, hepatitis B and C coinfection, and year of ART initiation.

Results:

2,038 participants were included in the analysis, with a median 4.5 years (IQR1.7–8.5) of follow-up. At the start of follow-up, the median age was 47.9 years (IQR41.0–55.7), and median CD4 was 640 cells/μL (IQR470–848).

Adjusted mean CD4 levels differed non-linearly with age($p<0.001$), showing an increase of 1.4 cells/μL/year until around 50 years of age, after which levels reduced by 4.4 cells/μL/year.

We did not find strong evidence that ART class($p=0.08$), the number of ART used($p=0.58$), or the use of TDF($p=0.25$), TAF($p=0.62$) or AZT($p=0.09$) were related to adjusted CD4 level. Abacavir use was associated with a 33.5 cells/ μ L higher mean CD4 (95%CI 17.6–49.3; $p<0.001$).

Conclusion:

After accounting for ART use, CD4 levels declined slowly with older age in participants with long-term viral control. There was no substantial impact of differences in ART regimens.

Disclosure of Interest Statement:

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