

Poster presentation

## Evolution of CD4+ T-cell count in HIV-1 infected adults receiving antiretroviral therapy with sustained long-term virological suppression

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from Ninth International Congress on Drug Therapy in HIV Infection  
Glasgow, UK. 9–13 November 2008

Published: 10 November 2008

*Journal of the International AIDS Society* 2008, 11 (Suppl 1):P70 doi:10.1186/1758-2652-11-S1-P70

This abstract is available from: <http://www.jiasociety.org/content/11/S1/P70>

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### Purpose of the study

It is not fully elucidated whether patients who receive combination antiretroviral therapy (cART) can maintain continued CD4+ T-cell count increases. Previous studies suggested a plateau 2–4 years after treatment initiation. We aimed to characterize the evolution of CD4+ T-cell count in HIV-infected individuals receiving long-term suppressive cART.

### Methods

This is a retrospective study of patients receiving cART in an HIV clinic cohort that maintained viral suppression (HIV-RNA <400 copies/mL) for ≥5 years. We used linear regression models to determine for each individual whether CD4+ T-cell count continued to increase. Furthermore, we estimated whether the slope of CD4+ T-cell count for each individual became zero which we defined as the CD4+ set-point. Using logistic regression methods, we assessed factors associated with continued CD4+ T-cell count rise and CD4+ set-point.

### Summary of results

59 patients were included. The median baseline CD4+ T-cell count was 238 (IQR, 120–360) cells/μL and the median duration on ART was 7.6 (IQR, 5.9–9.3) years. Independent predictors of continued CD4+ T-cell count increase were baseline log<sub>10</sub> HIV-RNA (OR 0.35, 95% CI 0.14–0.89;  $p = 0.026$ ) and duration on ART (OR 0.65,

95% CI 0.47–0.91;  $p = 0.021$ ). The CD4+ T-cell percentage at the start of ART was a significant predictor of time to the CD4+ set point (HR 2.4, 95% CI 1.3–4.5;  $p < 0.01$ ). Patients who reached a CD4+ set-point had a significantly higher baseline CD4+ T-cell percentage at the start of ART compared to those who did not reach a CD4+ set-point; 20% vs. 13% ( $p < 0.01$ , 95% CI; 0.01–0.04). The median T-cell count at the CD4+ set-point for individuals who started ART with CD4+ T-cell count ≤200 cells/μL, 201–350 cells/μL and >350 cells/μL was 616 (IQR, 579–789) cells/μL, 719 (IQR, 580–899) cells/μL and 880 (696–1057) cells/μL, respectively.

### Conclusion

These findings suggest that CD4+ T-cell count continues to increase in some patients after several years of cART. Our results point to an advantage to commencing cART at higher CD4+ T-cell strata.