

Poster presentation

Open Access

## Immune restoration during HAART: 8-year follow-up in HIV-positive patients with sustained virological suppression

L Malincarne\*, A Sgrelli, G Camanni, R Papili, D Francisci and F Baldelli

Address: Malattie Infettive, Perugia, Italy

\* Corresponding author

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):P10 doi:10.1186/1758-2652-11-S1-P10

This abstract is available from: <http://www.jiasociety.org/content/11/S1/P10>

© 2008 Malincarne et al; licensee BioMed Central Ltd.

### Purpose of the study

Durable virological suppression during HAART is associated with immunological recovery in patients with HIV infection. Current guidelines recommend to initiate HAART when CD4+ cell count falls <350/μl. However, recent studies have shown a higher immune restoration when HAART was started at CD4+ baseline level > 350 cells/μl. We retrospectively assessed the long-term immunological outcome in patients with sustained virological suppression during HAART, for up to 8 years.

### Methods

HIV-infected consecutive patients attending to our clinic were included, with the following inclusion criteria: follow-up >1 year while on HAART and sustained virologic suppression (HIV-RNA <400 copies/ml) for at least 6 consecutive months. We analyzed the immunological outcome by of annual determination of: 1) CD4+ cell count; and 2) change in CD4+ cell count from baseline. Complete immunological recovery was defined as CD4+ cell count ≥700/μl. Patients were stratified according to baseline CD4+ cell (counts of <200/μl, 200–350/μl and >350/μl), age, HIV risk group, HCV co-infection, HAART regimen, sex, and race. A statistical analysis was performed by linear regression.

### Summary of results

352 patients were observed: 172, 85 and 95 patients had baseline CD4+ cell count <200/μl, 200–350/μl and >350/μl, respectively. After 5 years of therapy, 29%, 69% and 82% of patients with baseline CD4+ cell count, respec-

tively, <200/μl, 200–350/μl and >350/μl, exceeded the threshold of 500 cells/μl ( $p = 0.034$ ).

Among patients with baseline CD4+ cell count >350/μl, mean CD4+ cell count reached a plateau with a complete immunological recovery by 4 years of suppressive HAART. CD4+ cell count increased even after 8 years without ever reaching a full immunological recovery in patients with baseline CD4+ cell count <200/μl.

Patients aged ≥50 years had a slower but similar immune recovery ( $p > 0.05$ ). We found no significant differences in immunological response according to baseline viral load, HIV risk factor, sex, HCV co-infection and HAART regimen.

### Conclusion

In our study, patients with sustained viral suppression experienced a significant immune recovery over 8 years of HAART. We found that complete immune recovery was achieved only in patients with baseline CD4+ cell count >350/μl. This observation strengthens the hypothesis that starting HAART at CD4+ cell counts < 50/μl could not be adequate to obtain a complete immunological recovery.

### References

1. Moore D, Keruly JC: **CD4+ cell count 6 years after commencement of highly active antiretroviral therapy in persons with sustained virological suppression.** *CID* 2007, **44**:441-6.
2. Gras L, et al.: **CD4 cell counts of 800 cells/mm<sup>3</sup> or greater after 7 years of highly active antiretroviral therapy are feasible in most patients starting with 350 cell/mm<sup>3</sup> or greater.** *J AIDS* 2007, **45**(2):183-192.