OA4-2

# In chronically HIV-1-infected patients long-term antiretroviral therapy initiated above 500 CD4/mm$^3$ achieves better HIV-1 reservoirs' depletion and T cell count restoration

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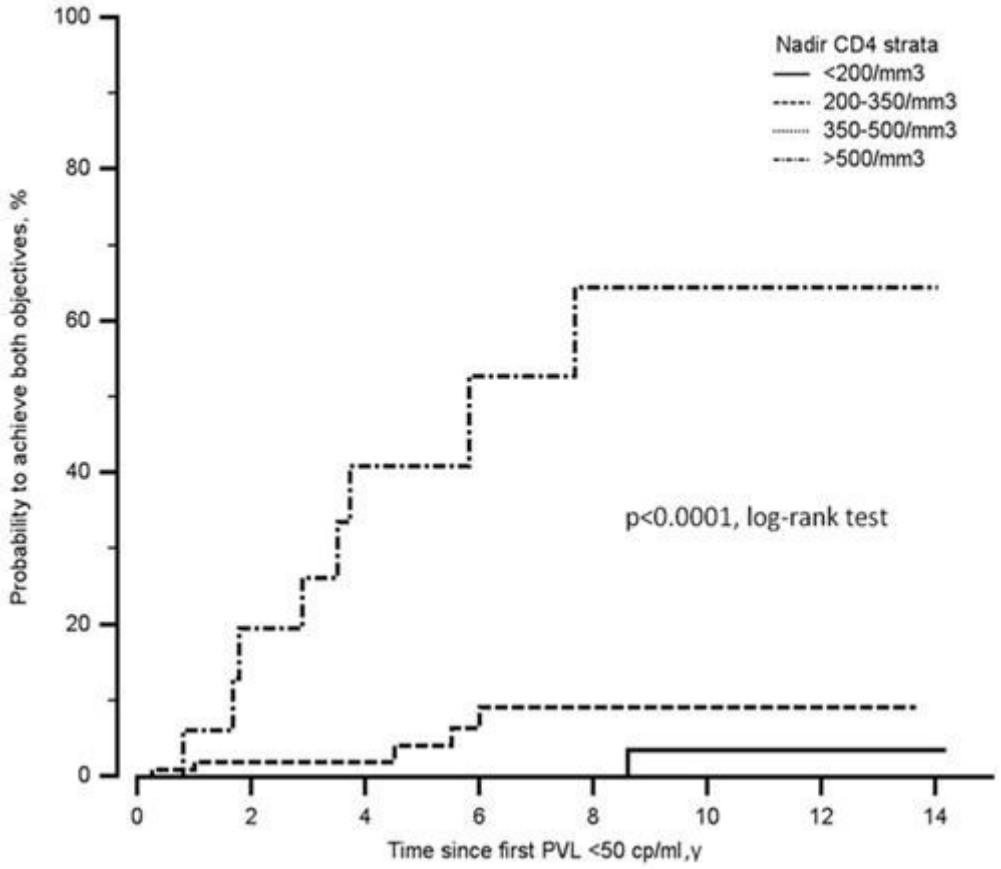
**Background:** Our group has already shown that antiretroviral therapy (ART) initiated during primary HIV-infection is associated with a profound reduction of viral reservoirs and restores optimal immunity. Present study aimed whether such benefit could be also observed in chronically infected patients (Fiebig VI) treated before the CD4+ count falls below 500/mm$^3$ (CHI$_{>500}$).

**Methods:** Prospective cohort-study of HIV-1-infected patients enrolled from 2005 to 2012 in Orleans' Hospital. Patients on ART achieving plasma viral load (PVL) < 50 copies/ml were included and followed as long as PVL remained controlled. Patients were stratified according to CD4+ nadir: >500, 350-500, 200-350 and < 200 cells/mm$^3$. Total HIV-DNA in PBMC was measured at least once a year (Biocentric, Bandol, France), before (when possible) and during treatment; T-cell count (CD4+, CD8+) and PVL were measured every 3-4 months. Factors leading to a low reservoir in blood (HIV-DNA < 2.3 log/M PBMC) and a normal T-cell count (CD4+ >500/mm$^3$, CD4/CD8 >1) were determined using Cox proportional-hazards regression.

**Results:** 283 patients were included (n=28, 26, 113 and 116 for >500, 350-500, 200-350 and < 200 strata, respectively) and followed during a median 4 years. At last visit, CHI$_{>500}$ patients had significantly lower HIV-DNA level (median=2.50 log) as compared with other strata (2.88, 2.78 and 2.91, respectively; p=0.003). Immune reconstitution was faster and better in CHI$_{>500}$ than in other strata (median

CD4+=883/mm$^3$ vs. 722, 645 and 520, respectively; p< 0.0001; median CD4/CD8=1.22 vs. 0.96, 0.85 and 0.68, respectively; p< 0.0001). In multivariate analysis, ART started above 500/mm$^3$ was highly predictive to achieving low HIV-DNA (< 2.3 log) and normal T-cell count (HR=32.4, 95%CI:10.5-99.5, p< 0.0001) (Fig.1).

**Figure 1: Kaplan-Meier estimates of the probabiliy of achieving a low level of HIV-DNA together with a normal T cell count according to CD4+ nedir stratification**




*[Figure 1]*

**Conclusion:** Even patients treated at the chronic phase could benefit from early treatment. This reinforces the value of public health programs to promote early HIV testing and treatment, especially among highly-exposed risk groups.