ANRS 12168 - Dynam-O study, comparing the immuno-virological and clinical responses to HAART between HIV-1 group O and group M-infected patients : results at 96 weeks

C. Kouanfack, M Vray, A Kfutwah, A Aghokeng, R Mougnutou, G. Unal, L Le Fouler, L. Schaeffer, N Noumsi, E Alessandri-Gradt, et al.

Poster 16-1356

ANRS 12168 - DynaM-O study, comparing the immuno-virological and clinical responses to HAART between HIV-1 group O and group M-infected patients : results at 96 weeks

C. Kouanfack[1,2], M. Vray[3], A. Kfutwah[4], A. Aghokeng[2,5], R. Mougnutou[6], G. Unal[67], L. Le Fouler[3], L. Schaeffer[3], N. Noumsi[1], E. Alessandri-Gradt[7], E. Delaporte[2], F. Simon[8], J.-C. Plantier[7]

[1]Hôpital Central, Yaoundé, Cameroon, [2]Institut de Recherche pour le Développement, Montpellier, France, [3]Institut Pasteur de Paris, Paris, France, [4]Centre Pasteur du Cameroun, Yaoundé, Cameroon, [5]Institut de Recherches Medicales et d'études des Plantes Medicinales, Yaoundé, Cameroon, [6]Site ANRS, Hôpital Central, Yaoundé, Cameroon, [7]CHU et Université de Rouen, Rouen, France, [8]Hôpital Saint Louis et université Paris-Diderot, Paris, France

BACKGROUND

The divergent HIV-1 group O strains (HIV-1/O) are endemic in Cameroon and naturally resistant to NNRTI, largely used as first-line therapy in this country. Alternative therapeutic strategies are thus needed.

OBJECTIVES

DynaM-O is a prospective open-label study.

The main objective is to compare the immuno-virological response to HAART, including two NRTI and one PI in HIV-1/O and HIV-1 group M (HIV-1/M) infected-naïve patients.

Secondary objectives are to compare the kinetic of viral load responses, the CD4 restoration and the clinical events.

PATIENTS AND METHODS

PATIENTS

All consecutive HIV-1/O naïve patients with treatment initiation criteria were recruited from 2 hospitals Yaoundé and the Center Pasteur of Yaoundé (CPC), and included and followed up between June 2010 and July 2013. HIV-1/O patients were matched with HIV-1/M with a ratio of 1:2 on the basis of sex, age 18-40 and > 40 years, CD4 before initiation >350/mm³ - [350-100]/mm³ - <100/mm³, Hb level <8g/l or >8g/l, and HBV status.

HAART Treatment : HIV-1/M and HIV-1/O initiated the same treatment: AZT+3TC+LPV/r, or TDF+3TC+LPV/r for patients with anemia or HBV co-infection.

METHODS

- **Primary end point: percentage of patients with an undetectable viral load (VL < 60 cp/mL) at W48.**
- **Statistical analysis**

Primary endpoint analysis: Comparison of proportion of patients with undetectable VL according to the HIV-1 group at W96 with analyses on Intention to Treat Analysis/ITT (Death and Missing=Failure) and Per Protocol/PP. Secondary endpoint analysis : Proportion of patients with a gain of more than 50% of CD4 at W12 and W48 according to the HIV-1 group

RESULTS

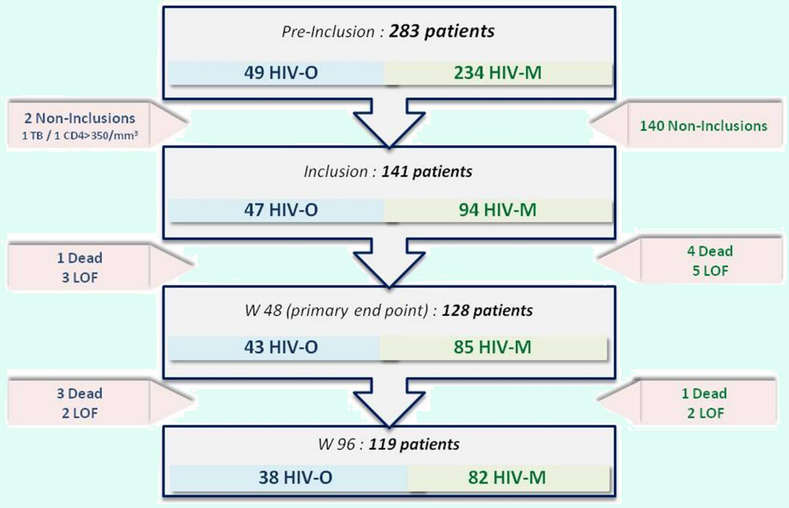

Fig.1 Flow Chart

47 Cameroonian patients HIV-1/O and 94 HIV-1/M were included; results were available for 128 patients (13 died or were lost-to follow-up; *Fig.1).*

At baseline, VL was significantly lower (p< 0.0001) in HIV-1/O with a median at 4.3 log cp/mL vs 5.1 log cp/mL in HIV-1/M.

Median CD4 counts were well balanced between the two groups (227 vs 215, in HIV-1/O and HIV-1/M respectively, p=0.68)

At W96, 94.7 % [88.8 – 100] of HIV-1/O samples were < 60 cp/mL vs 84.1 % [77.5% - 90.8%] of HIV-1/M in per protocol analysis (p=0.14); and no difference was observed at the threshold of 200 cp/mL (97% in both groups; *Fig.2).*

Between treatment initiation and W96, CD4 cells count increase is significantly higher (p=0,04) in the HIV-1/M group than in the HIV-1/O group (+2.0 CD4 per month for the HIV-1/M, compare to HIV-1/O; *Fig. 3).*

Percent of patients with undetectable VL at W96 [95% CI]		P-value adjusted*
Per Protocol		
HIV-1/O (n=38)	94.7% [88.8% – 100%]	0,14
HIV-1/M (n=81)	84.1% [77.5% – 90.8%]	
Intention To Treat		
HIV-1/O (n=47)	76.6% [64.4% – 88.7%]	0,79
HIV-1/M (n=94)	73.4% [64.4% – 82.3%]	

Fig.2 Comparison of patients with undetectable VL depending on the type of analysis and according to the HIV-1 group at W96

** Adjusted on sex, age class (18-40 years or >40 years), CD4 level (<100/mm³, 100-350/mm³ or >350/mm³) and Hb level (≤8 g/l or >8 g/l)*

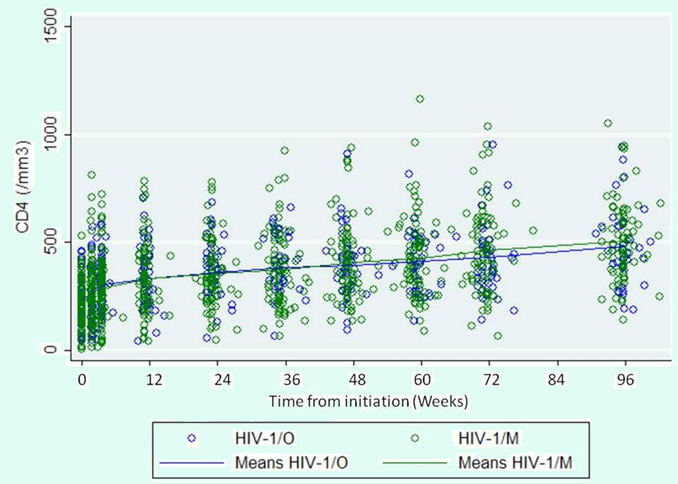

Fig.3 CD4 evolution from inclusion to W96

CONCLUSION

DynaM-O is the unique study analyzing the HAART responses in HIV-1/O infected patients compared to HIV-1/M patients. Data at W96 showed good efficacy of the regimens in both groups, but with a higher rate of achievement of the virological response in HIV-1/O infected patients. In contrast, the CD4 restoration was lower in HIV-1/O than that observed for HIV-1/M patients. These data indicate that group O infected patients should be successfully treated by treatment excluding NNRTI. Moreover, studying the mechanisms underlying these differences in response to HAART between these highly divergent HIV-1 strains are of importance in our understanding of the HIV natural history.

ACKNOWLEDGMENTS

We thank the ANRS for financial support and the DynaMO study group: Michèle Alima, Emmanuel Akongnwi, Ahidjo Ayouba, Jerome Dumortier, Lucie Essengué, Georges Mounpou, Peter Ngang, Pauline Ngoma, Paul-Alain Ngoupo, Vincent Omgba, Deborah Omam, Martine Peeters, Dominique Rousset, Léonie Tonfack, Aurélia Vessière, Flore Zé.

CONTACTS
C Kouanfack
charles.kouanfack@yahoo.fr
JC Plantier
Jean-christophe.plantier@chu-rouen.fr

Agence autonome de l'Inserm