Risk factors of slow immune reconstitution in HIV-1 infected adults receiving antiretroviral therapy in Ambulatory Treatment Center in Dakar

Batista G., Buvé A., Ngom NF., Diop MN.

Introduction

The risk factors of slow immune recovery (SIR) were documented in many HIV cohorts from developed countries but remain little valued in countries with limited resources. The objective of this study was to evaluate the frequency and factors associated with slow immune restoration at six months and suboptimal immune response at 24 months after antiretroviral treatment initiation among people living with HIV with undetectable plasma viral load.

Methods

A retrospective study was conducted in a cohort of HIV-1 infected patients on antiretroviral combination therapy. Were selected naive patients, aged over 15 years, with an undetectable viral load between the sixth and twelfth month, with CD4 cell count below 350 cells/mm^3 at baseline and on treatment for at least six months. Data were analyzed using Epi Info version 3.5.3 and multiple logistic regression was used to assess predictors of slow immune response at sixth month (CD4 gain <50 cell/mm^3) and suboptimal immune response at 24 months after antiretroviral treatment initiation (increase in CD4 less than 500 cell/mm^3)

Results

Among the 755 patients included in the study, 63.2% were women. At the initiation of treatment, 50.2% of patients were living with a partner, 49.3% were in clinical stage 3 or 4 WHO and 25.5% had a Body Mass Index (BMI) <18.5 kg/m^2. The median age and median CD4 cell count were 43 years (IQR: 37-51) and 134 cell/mm^3 (IQR: 52-220), respectively. Most patients (62.7%) had a higher viral load (≥ 5log10 copies/ml) at initiation of treatment and 74% started HAART containing AZT. Among the 686 patients who had CD4 available at 6 months of treatment, 18.8% have a low immune restoration. The proportion of patients who achieved 500 CD4/mm^3 or more during treatment, increased from 4.7% at 6 months to 20% at 24 months.

Risk factors of SIR at 6 months of antiretroviral therapy were, in univariate analysis, age, widowed or divorced marital status, BMI less than 18.5 kg/mm^2, CD4 ≥ 100 cell/mm^3, viral load ≥ 5log10 and antiretroviral therapy containing zidovudine. In multivariate analysis, only the normal BMI compared with BMI ≥ 25kg/m^2 (OR_a = 3.44 and 95% CI: 1.12 to 10.54) and high viral load (OR_a = 0.54 95% CI: 0.29 - 0.98) before the initiation of treatment were associated with SIR at the sixth month of treatment.

Factors that were associated with not reaching 500 CD4/mm^3 or more at 24 months of

treatment are, in univariate analysis as multivariate, age ≥ 43 years, BMI below 25 kg/m^2, baseline CD4 <100 cell/mm^3 and slow recovery at 6 months of treatment.

Conclusion

Our results were comparable to those observed in developed countries. Taking into account the risk factors for the slow immune restoration at the initiation of first-line ARV treatment is needed to improve the morbidity and mortality of patients, partly due to this phenomenon.