

Higher set point plasma viral load and more-severe acute HIV type 1 (HIV-1) illness predict mortality among high-risk HIV-1-infected African women

Abstract:

BACKGROUND: There is limited information on the natural history of human immunodeficiency virus type 1 (HIV-1) infection in Africa, especially from individuals with well-defined dates of infection. We used data from a prospective cohort study of female sex workers in Mombasa, Kenya, who were followed up monthly from before the date of HIV-1 infection. **METHODS:** Antiretroviral-naïve women who had a well-defined date of HIV-1 infection were included in this analysis. The effects of set point plasma viral load (measured 4-24 months after infection), early CD4+ cell count, and symptoms of acute HIV-1 infection on mortality were assessed using Cox proportional hazards analysis. **RESULTS:** Among 218 women, the median duration of follow-up after HIV-1 infection was 4.6 years. Forty women died, and at 8.7 years (the time of the last death), the cumulative survival rate was 51% by Kaplan-Meier analysis. Higher set point viral load, lower early CD4+ cell count, and more-symptomatic acute HIV-1 illness each predicted death. In multivariate analysis, set point viral load (hazard ratio [HR], 2.28 per 1 log₁₀ copies/mL increase; P=.001) and acute HIV-1 illness (HR, 1.14 per each additional symptom; P=.05) were independently associated with higher mortality. **CONCLUSION:** Among this group of African women, the survival rate was similar to that for HIV-1-infected individuals in industrialized nations before the introduction of combination antiretroviral therapy. Higher set point viral load and more-severe acute HIV-1 illness predicted faster progression to death. Early identification of individuals at risk for rapid disease progression may allow closer clinical monitoring, including timely initiation of antiretroviral treatment