

# Predictors of mortality in HIV-1 infected children on antiretroviral therapy in Kenya:

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## Abstract:

Background: Among children, early mortality following highly active antiretroviral therapy (HAART) remains high. It is important to define correlates of mortality in order to improve outcome. Methods: HIV-1-infected children aged 18 months-12 years were followed up at Kenyatta National Hospital, Nairobi after initiating NNRTI-based HAART. Cofactors for mortality were determined using multivariate Cox regression models. Results: Between August 2004 and November 2008, 149 children were initiated on HAART of whom 135 were followed for a total of 238 child-years (median 21 months) after HAART initiation. Baseline median CD4% was 6.8% and median HIV-1-RNA was 5.98-log<sub>10</sub> copies/ml. Twenty children (13.4%) died at a median of 35 days post-HAART initiation. Mortality during the entire follow-up period was 8.4 deaths per 100 child-years (46 deaths/100 child-years in first 4 months and 1.0 deaths/100 child-years after 4 months post-HAART initiation). On univariate Cox regression, baseline hemoglobin (Hb) <9 g/dl, weight-for-height z-score (WHZ) < -2, and WHO clinical stage 4 were associated with increased risk of death (Hb <9 g/dl HR 3.00 [95% C.I. 1.21-7.39], p = 0.02, WHZ < -2 HR 3.41 [95% C.I. 1.28-9.08], p = 0.01, and WHO clinical stage 4, HR 3.08 [1.17-8.12], p = 0.02). On multivariate analysis Hb < 9 g/dl remained predictive of mortality after controlling for age, baseline CD4%, WHO clinical stage and weight-for-height z-score (HR 2.95 (95% C.I. 1.04-8.35) p = 0.04). Conclusion: High early mortality was observed in this cohort of Kenyan children receiving HAART, and low baseline hemoglobin was an independent risk factor for death.