

## Incidence and Predictors of Mortality Among HIV Positive Children on Art in Public Hospitals of Harer Town, Enrolled From 2011 to 2021

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**Abstract :** Background; antiretroviral treatment reduce HIV-related morbidity, and prolonged survival of patients however, there is lack of up-to-date information concerning the treatment long term effect on the survival of HIV positive children especially in the study area. Objective: To assess incidence and predictors of mortality among HIV positive children on ART in public hospitals of Harer town who were enrolled from 2011 to 2021. Methodology: Institution based retrospective cohort study was conducted among 429 HIV positive children enrolled in ART clinic from January 1st 2011 to December30th 2021. Data were collected from medical cards by using a data extraction form, Descriptive analyses were used to Summarized the results, and life table was used to estimate survival probability at specific point of time after introduction of ART. Kaplan Meier survival curve together with log rank test was used to compare survival between different categories of covariates, and Multivariate Cox-proportional hazard regression model was used to estimate adjusted Hazard rate. Variables with p-values  $\leq 0.25$  in bivariable analysis were candidates to the multivariable analysis. Finally, variables with p-values  $< 0.05$  were considered as significant variables. Results: The study participants had followed for a total of 2549.6 child-years (30596 child months) with an overall mortality rate of 1.5 (95% CI: 1.1, 2.04) per 100 child-years. Their median survival time was 112 months (95% CI: 101-117). There were 38 children with unknown outcome, 39 deaths, and 55 children transfer out to different facility. The overall survival at 6, 12, 24, 48 months were 98%, 96%, 95%, 94% respectively. being in WHO clinical Stage four (AHR=4.55, 95% CI:1.36, 15.24), having anemia(AHR=2.56, 95% CI:1.11, 5.93), baseline low absolute CD4 count (AHR=2.95, 95% CI: 1.22, 7.12), stunting (AHR=4.1, 95% CI: 1.11, 15.42), wasting (AHR=4.93, 95% CI: 1.31, 18.76), poor adherence to treatment (AHR=3.37, 95% CI: 1.25, 9.11), having TB infection at enrollment (AHR=3.26, 95% CI: 1.25, 8.49),and no history of change their regimen(AHR=7.1, 95% CI: 2.74, 18.24), were independent predictors of death. Conclusion: more than half of death occurs within 2 years. Prevalent tuberculosis, anemia, wasting, and stunting nutritional status, socioeconomic factors, and baseline opportunistic infection were independent predictors of death. Increasing early screening and managing those predictors are required.

**Keywords :** human immunodeficiency virus-positive children, anti-retroviral therapy, survival, Ethiopia

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