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

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Abstract : Background: Antiretroviral treatment reduces HIV-related morbidity and prolongs the survival of patients; however, there is a lack of up-to-date information concerning the treatment's long-term effect on the survival of HIV-positive children, especially in the study area. Objective: The objective is 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 the ART clinic from January 1st, 2011, to December 30th, 2021. Data were collected from medical cards by using a data extraction form. Descriptive analyses were used to Summarize the results, and a life table was used to estimate survival probability at a specific point in time after the introduction of ART. Kaplan Meier survival curve, together with the log-rank test, was used to compare survival between different categories of covariates, and a Multivariate Cox-proportional hazard regression model was used to estimate the adjusted Hazard rate. Variables with p-values ≤0.25 in the bivariable analysis were candidates for 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 outcomes, 39 deaths, and 55 children transferred out to different facilities. The overall survival at 6, 12, 24, and 48 months were 98%, 96%, 95%, and 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, stunting nutritional status, 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, treatment