

**PREDICTORS FOR MORTALITY
AMONG HIV INFECTED CHILDREN ON
ANTIRETROVIRAL THERAPY**

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ABSTRACT

The aim of this study was to assess the magnitude and predictors of mortality among children on Antiretroviral Therapy (ART) at specialist hospital, Mingalardon and 300 bedded children hospital, Mandalay.

Both quantitative and qualitative approaches were conducted. For the quantitative approach, ambidirectional cohort study was carried out among HIV positive children (under 15 years aged) on ART from 1st January 2005 to 31st August 2012. Information on relevant variables was collected from patients' ART cards and registries. Life table was used to estimate the cumulative survival of children. Kaplan-Meier survival curves were constructed and assessed the difference between the curves using the log ranks test. Multivariate Cox proportional hazards model was fitted to identify the predictors of mortality. For qualitative approach, four focus group discussions and six key informant interviews were conducted. Each focus group discussion was conducted with six purposively sampled caregivers caring for HIV infected children on ART and key informant interviews were carried with health care providers. Interviews were audio-recorded, transcribed and content analyzed.

A total of 881 records were included in the quantitative data analysis. The mean (SD) age at time of diagnosis was 64.14 (38.15) months and the mean (SD) age at initiation of ART was 74.9(38.04) months. The median follow up period was 26 months (IQR= 14 to 41 months). At the end of follow up, 87(9.9%) were dead, 28(3.2%) were loss to follow up and 15(1.7%) were transferred out to other health facility. Mortality was 4.16 deaths per 100-child-years of follow up period. The cumulative probabilities of survival at 3, 6, 12, 24, and 60 months of ART were 0.94, 0.93, 0.92, 0.91 and 0.89 respectively. Majority (86.2%) of the deaths occurred within the first year of treatment. Presence of previous history of ART treatment (adjusted hazard ratio[AHR]=8.37, 95%CI:2.67,26.21), presence of tuberculosis treatment during course of illness (AHR=3.55, 95%CI:1.46,8.64), WHO clinical staging IV (AHR=2.84, 95% CI: 1.47,5.49), weight for age Z score <-3SD (AHR=6.60, 95%CI:2.99,14.57), haemoglobin level <9mg% (AHR=4.44, 95%CI:2.16,9.11), hospitalization during first 6 months of treatment (AHR=9.88, 95%CI:4.70,20.75)and being treated at ART clinic of 300 bedded children hospital, Mandalay were predictors of mortality.

Thematic content analysis of the caregivers' and health care providers' perceived difficulties in the management of HIV infected children on ART revealed two main themes each from caregivers and health care providers. Themes related to caregivers were (1) treatment seeking and receiving: financial difficulties, long travelling time, long waiting time and crowded waiting place (2) medication related factors: difficulties in administering medication and medication time. Themes emerged from health care providers were (1) Caregivers' characteristics: lack of understanding of ART treatment and not regular follow up (2) Health service factor: limited diagnostic facility, drug supply, waiting place and manpower.

There was a high rate of mortality within one year after initiation of ART. Hence, priority should be given to the children during the first year after initiation of ART. Children with low haemoglobin level and low weight for age should get proper diagnosis and care such as nutrition interventions to reduce the risk of death. Not only health care provider but also caregivers play a critical role to play in management of HIV infected children on ART.