

HIV/AIDS Survival in Adults and Children Under HAART in Rural Malawi

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Background

- Survival of patients diagnosed with acquired immunodeficiency syndrome (AIDS), without antiretroviral therapy (ART) is 2.2 to 23 months in Africa.
- Early reported data regarding the survival outcomes from the ART scale-up in Africa have demonstrated the general success of the approach.
- However, most available data are from urban settings or controlled (research) programs, and there is limited information from rural settings where a substantial portion of the people affected by the epidemic reside.
- Rural settings in Africa have significant differences from urban settings in terms of access (e.g., transportation); health care delivery (e.g., availability of health care workers and diagnostic tools); and environmental (e.g., co-infections)

Objective

- To determine the probability of patients remaining in care after initiating ART among HIV-infected patients residing in a rural setting in Africa

Context

- Chiradzulu is a rural farming district in southern Malawi, estimate 290,000 inhabitants. National HIV prevalence is 20% in 2007 (ANC data)
- MSF has provided free ART to people living with HIV in Chiradzulu, Malawi since 2001, focusing on decentralizing access to care and simplification
- Service delivery is carried out by Clinical Officers, Nurses, Medical Assistants, and community workers

Methods

- The probability of remaining in care was assessed for patients initiating ART between August 2001 and May 2007 in Chiradzulu, Malawi.
- Patients were considered lost to follow-up if they missed their last appointment by one month. Probability of remaining-in-care analysis was performed using Kaplan Meier survival analysis. Death and lost to follow-up were endpoints.
- Patient data was extracted from FUCHIA monitoring system (Epicentre-MSF) and analyzed using STATA (Version 9).

Patient Characteristics at ARV Initiation (N=10, 699)

	Adults N = 9791 (>15 years)	Adolescence N=468 (5-15 years)	Children N=440 (<5 years)
Female Sex, N(%)	6,453 (66)	251(53)	208 (47)
CD4 cell count, N (%)	5172	242	153
Median [IQR]	141 [78-205]	223[104-367]	10[6.7-16]
<50 cells/ml or <15%	750 (15)	32 (13)	107(70)
50-250cells/ml or 15-24%	3795(73)	108 (45)	42(27)
>250 cells/ml or >=25%	627(12)	102(42)	4(3)
WHO stage, N (%)	8673	347	327
Stage 1 or 2	1917 (22)	56 (16)	73 (22)
Stage 3 or 4	6756 (78)	291 (84)	254 (78)
Body Weight – kg, N	9563	464	428
Median [IQR]	50[44-56]	19[16-25]	10[8-12]
ARV naïve, N(%)	8997(92)	448 (95)	442 (98)

Initiation Regimens

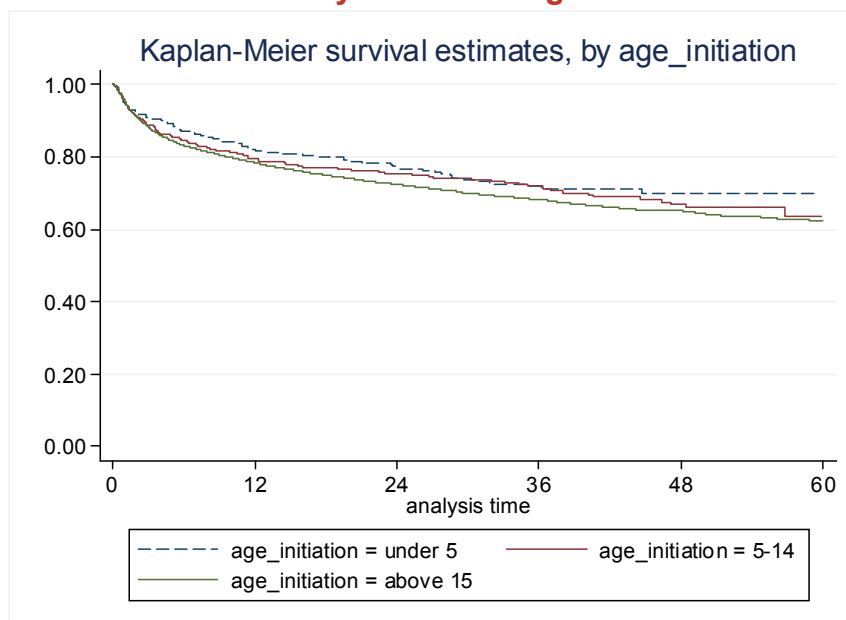
	Adults	Adolescence	Children
3TC-d4T-NVP, N(%)	9105 (93)	426(91)	210 (48)
AZT-3TC-NVP, N(%)	296 (3)	27 (6)	201(45)
d4T-3TC-EFV, N(%)	296 (3)	14 (3)	5(1)
Other	94	3	26

Follow-up Characteristics

	Adults	Adolescence	Children
Median follow-up months [IQR]	20[11-37]	26[12-43]	20 [12-35]
Median time on first ARV regimen* [IQR]	1131 10.6[3.2-25.3]	37 6.6[2.7-31.5]	166 7.6[3.9-13.7]
Death within first 6 months	945(69)	44(62)	34(56)

* Excluding 718 switches due to EFV replacement for NVP during TB treatment (pulmonary and extra-pulmonary)

Probability of Remaining in Care



Remaining in care	Adults	Adolescence	Children
At 12 months (95% CI)	0.80 (0.79-0.81)	0.82(0.79-0.86)	0.82(0.79-0.86)
At 24 months (95% CI)	0.74 (0.73-0.75)	0.79(0.75-0.83)	0.78(0.73-0.82)
At 36 months (95% CI)	0.70 (0.69-0.71)	0.76(0.71-0.80)	0.73(0.68-0.78)
At 48 months (95% CI)	0.67 (0.66-0.68)	0.70(0.65-0.76)	0.71(0.65-0.76)
At 60 months (95% CI)	0.64 (0.62-0.66)	0.67(0.59-0.74)	0.72(0.65-0.77)

Cohort Outcomes as of May 2008

	Adults	Adolescence	Children
Death, N(%)	1,381 (14)	71 (15)	61 (14)
Lost to follow-up, N(%)	1,463(15)	47(10)	47 (11)
Still followed on ART, N(%)	5,937 (61)	270(57)	297 (67)
Transferred-out, N (N%)	981 (10)	82(17)	35(8)

Discussion

This cohort represents a long-term (60+ months) and large scale project delivering ART in a decentralized, rural setting in sub-Saharan Africa. Comparable data demonstrating long term survival effectiveness in similar settings is limited. Treating a large cohort of HIV-positive patients in rural sub-Saharan is possible and access to ART greatly improves survival rates. Unexpectedly, children under-five with severe immunosuppression on ART showed good survival outcomes. Obstacles persist including complicated co-infections, attrition, and limited human resources. Furthermore, early mortality and the quality of care delivered remain ongoing challenges. As programs expand to provide access to ART to all patients in need and survival rates improve, strategies for simplifying treatment delivery and monitoring patients living with HIV long-term are needed.