

Supplementary Materials Table 1. Baseline Characteristics of Cohort by Initial CD4+ Recovery

Characteristic	Low Recovery (n = 748)	High Recovery (n = 1136)
Age, years	37 (29, 44)	36 (29, 44)
Age ≥45 years	176 (23.5%)	255 (22.4%)
Male	544 (72.7%)	843 (74.2%)
Female	204 (27.3%)	293 (25.8%)
Race		
White/Other	327 (43.7%)	587 (51.7%)
Asian	59 (7.9%)	83 (7.3%)
Black	257 (34.4%)	305 (26.8%)
Hispanic	105 (14.0%)	161 (14.2%)
Geographic Location		
United States	65 (8.7%)	119 (10.5%)
Africa	202 (27.0%)	217 (19.1%)
Asia	51 (6.8%)	74 (6.5%)
Europe & Israel	222 (29.7%)	399 (35.1%)
Australia	19 (2.5%)	32 (2.8%)
Latin America	189 (25.3%)	295 (26.0%)
Treatment Regimen		
NNRTI + 2 NRTIs	612 (81.8%)	858 (75.5%)
Protease Inhibitor + 2 NRTIs	109 (14.6%)	228 (20.1%)
Integrase Inhibitor + 2 NRTIs	25 (3.3%)	49 (4.3%)
Other	2 (0.3%)	1 (0.1%)
Body Mass Index, kg/m ²	24.46 (21.90, 27.91)	24.86 (22.28, 28.22)
Hepatitis C Co-infection	26 (3.6%)	38 (3.4%)
Hepatitis B Co-infection	29 (4.0%)	28 (2.5%)
1st CD4+, cells/mm ³	647.0 (564.0, 792.0)	661.0 (578.5, 782.5)
2nd CD4+, cells/mm ³	691.0 (591.5, 831.0)	615.0 (552.0, 723.0)
Baseline CD8+, cells/mm ³	1081 (800.0, 1481)	1013 (768.0, 1329)
Baseline log ₁₀ HIV RNA copies/mL	3.95 (3.20, 4.47)	4.27 (3.71, 4.73)
Baseline IL-6 pg/mL	1.41 (0.96, 2.11)	1.36 (0.98, 2.15)
Baseline D-dimer µg/mL	0.32 (0.21, 0.51)	0.32 (0.23, 0.49)
Years since HIV diagnosis	0.96 (0.37, 3.09)	0.96 (0.34, 2.58)

Low Recovery: Initial CD4 Recovery ≤ 50 cells/mm³ 8 months after initiating ART

High Recovery: Initial CD4 Recovery > 50 cells/mm³ 8 months after initiating ART

Values given are median (25th, 75th percentile) for continuous variables and N (%) for categorical variables. Percentages are column percentages.

Supplementary Table 2. Univariable and Multivariable Risk Ratios Estimated by Log Binomial and Poisson Regression for Low CD4+ Count Recovery.

Risk Factor	Univariable (Log Binomial)		Multivariable (Poisson Regression)*	
	RR (95% CI)	p-value	RR (95% CI)	p-value
Age, RR per 10 years higher	1.03 (0.98 - 1.09)	0.23	1.05 (0.99 - 1.12)	0.11
Female	1.00 (ref.)		1.00 (ref.)	
Male	0.96 (0.84 - 1.08)	0.47	1.24 (1.05 - 1.45)	0.009
Race				
White/Other	1.00 (ref.)		1.00 (ref.)	
Asian	1.16 (0.94 - 1.44)	0.17	1.07 (0.53 - 2.20)	0.84
Black	1.28 (1.13 - 1.45)	<.001	1.05 (0.85 - 1.31)	0.65
Hispanic	1.10 (0.93 - 1.31)	0.26	1.15 (0.95 - 1.40)	0.16
Geographic Location				
United States	1.00 (ref.)		1.00 (ref.)	
Africa	1.36 (1.10 - 1.70)	0.005	1.24 (0.98 - 1.59)	0.08
Asia	1.15 (0.87 - 1.54)	0.33	1.14 (0.53 - 2.45)	0.75
Europe & Israel	1.01 (0.81 - 1.26)	0.92	1.01 (0.80 - 1.28)	0.94
Australia	1.05 (0.70 - 1.58)	0.80	1.06 (0.69 - 1.62)	0.80
Latin America	1.11 (0.88 - 1.38)	0.38	1.08 (0.85 - 1.36)	0.54
Treatment Regimen				
NNRTI + 2 NRTIs	1.00 (ref.)		1.00 (ref.)	
Protease Inhibitor + 2 NRTIs	0.78 (0.66 - 0.92)	0.003	0.86 (0.73 - 1.03)	0.10
Integrase Inhibitor + 2 NRTIs	0.81 (0.59 - 1.12)	0.21	0.94 (0.68 - 1.31)	0.73
Other	1.60 (0.72 - 3.57)	0.25	1.29 (0.39 - 4.28)	0.68
Body Mass Index, RR per kg/m ² higher	1.00 (0.99 - 1.01)	0.53	0.99 (0.98 - 1.00)	0.09
Hepatitis C Co-infection	1.03 (0.76 - 1.40)	0.83	0.99 (0.73 - 1.33)	0.94
Hepatitis B Co-infection	1.30 (1.00 - 1.68)	0.05	1.18 (0.90 - 1.55)	0.24
Screening CD4+, RR per 100 fewer cells/mm ³	1.00 (0.97 - 1.03)	0.84	1.05 (1.01 - 1.08)	0.004
Baseline CD8+, RR per 100 more cells/mm ³	1.02 (1.01 - 1.03)	<.001	1.03 (1.02 - 1.04)	<.001
Baseline HIV RNA copies/mL, RR per log ₁₀ lower	1.32 (1.26 - 1.38)	<.001	1.40 (1.31 - 1.50)	<.001
Baseline IL-6 pg/mL, RR per log ₂ higher	1.00 (0.95 - 1.07)	0.89	1.04 (0.97 - 1.10)	0.28
Baseline log ₂ D-dimer µg/mL	1.09 (1.02 - 1.17)	0.008	1.11 (1.01 - 1.21)	0.034
Baseline (log ₂ D-dimer µg/mL) ²	1.04 (1.01 - 1.06)	0.007	1.05 (1.02 - 1.08)	0.004
Time since HIV diagnosis, RR per 1 year higher	1.02 (1.01 - 1.04)	0.004	1.01 (1.00 - 1.03)	0.13

*Due to convergence issues with the log-binomial model, the model was fit using Poisson regression with robust standard errors

Low Recovery: Initial CD4 Recovery ≤ 50 cells/mm³ 8 months after initiating ART

High Recovery: Initial CD4 Recovery > 50 cells/mm³ 8 months after initiating ART

RR: Relative Risk; 95% CI: 95% confidence interval.

Supplementary Figure 1. Percent of participants with low CD4+ recovery after 8 months by tertiles of baseline CD8+ and baseline RNA copies/mL. Samples sizes are indicated for each subgroup.

