

INFANTS WITH HIV STARTING ART WITHIN 4 MONTHS OF AGE CAN ACHIEVE SUSTAINED UNDETECTABLE HIV-1 DNA

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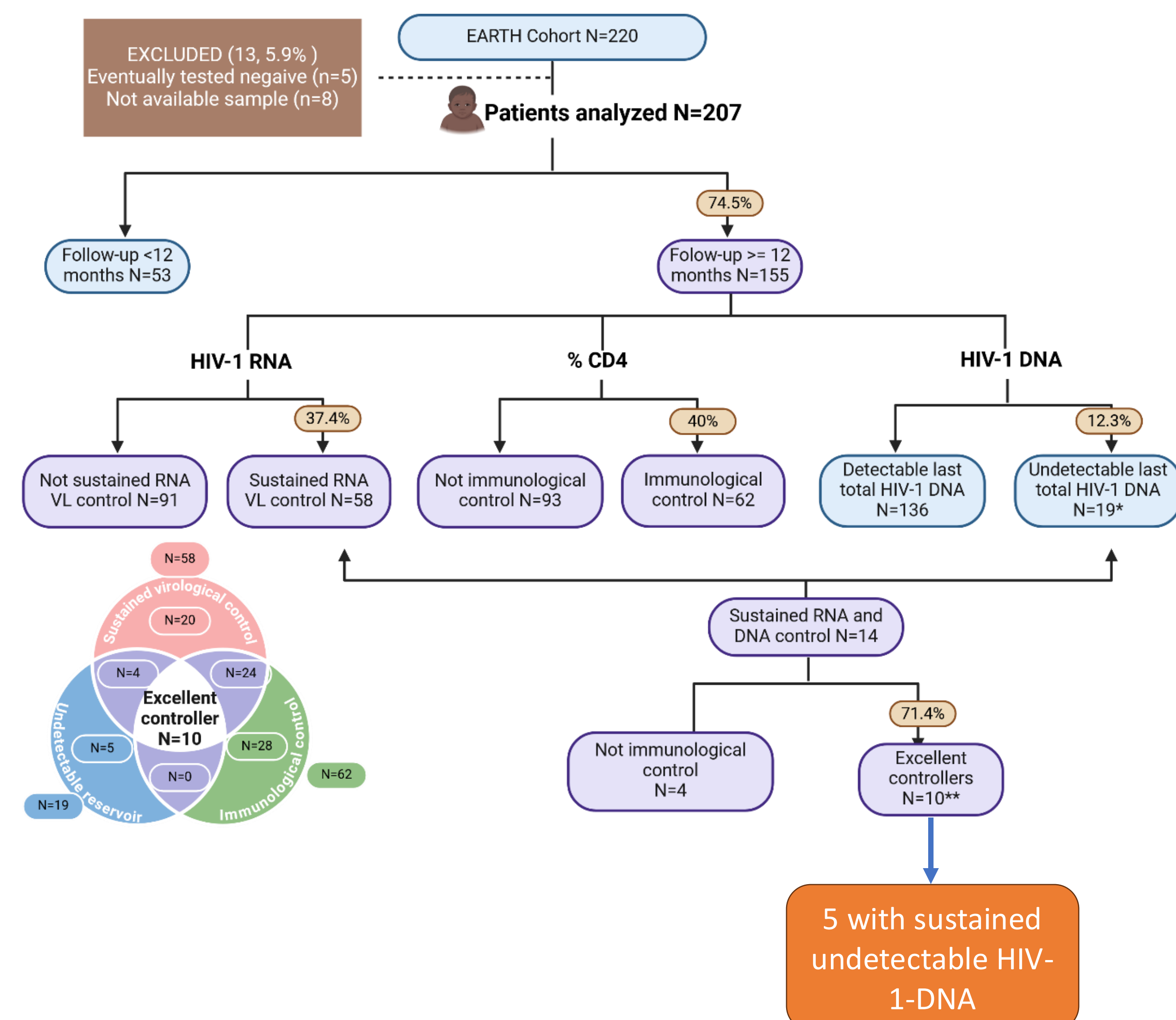
BACKGROUND

Recent studies have reported on children born with HIV and treated from the first 48 hours of life who achieved undetectable HIV-1 DNA after 2 years of life. In this study, we report five children who started ART within 4 months of age in Sub-Saharan Africa (SSA), who achieved sustained undetectable HIV-1 DNA after 2 years of follow-up.

METHODS

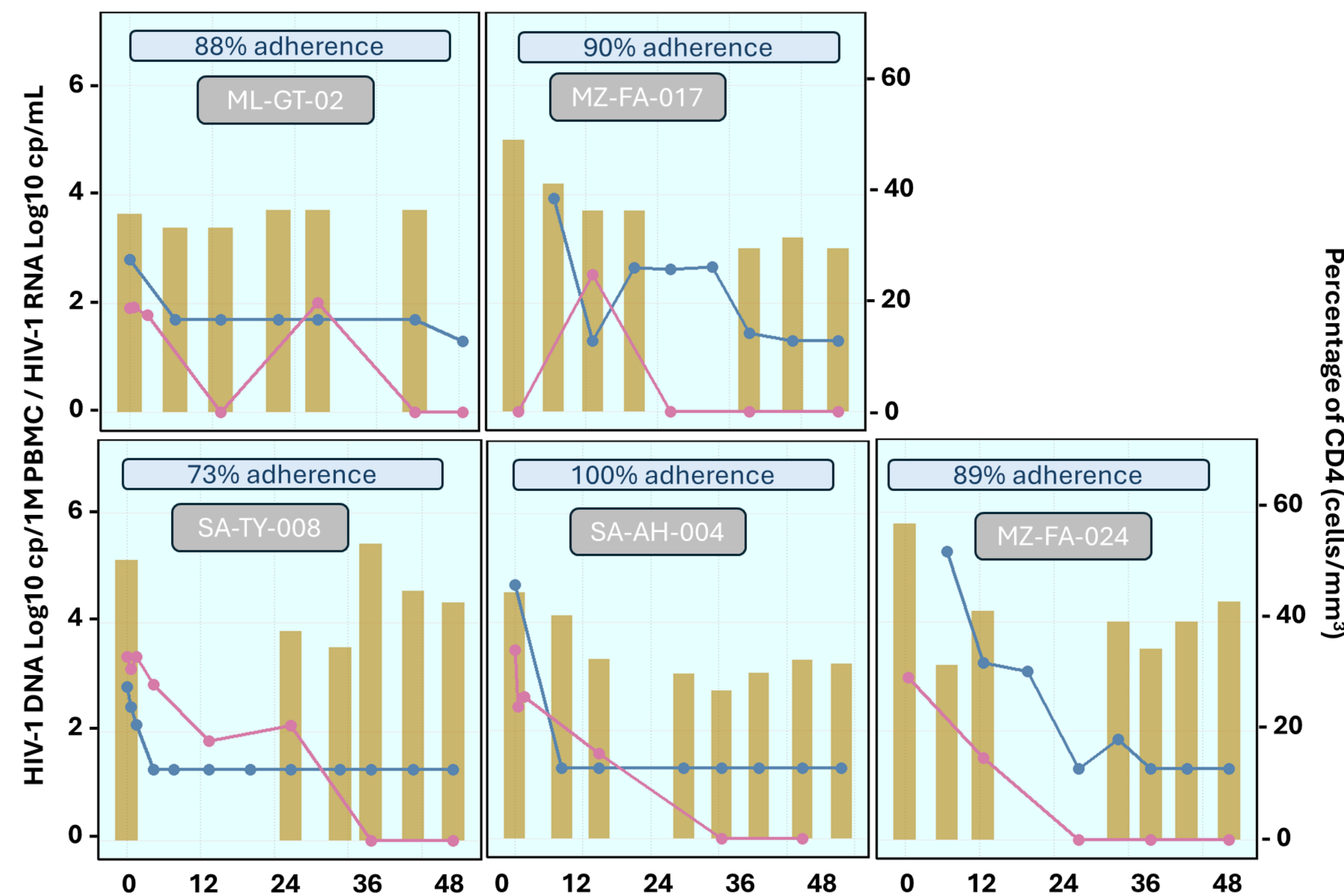
We enrolled infants who initiated ART at 6 months or younger in Mozambique, South Africa and Mali (EARTH-EPIICAL Cohort). Children were monitored 2, 6, 12 and 24 weeks after enrolment, followed by biannual check-ups up to 4 years after enrolment. We identified infants with sustained viral load (VL) suppression, immunological control, and sustained undetectable HIV-1 DNA. All participants had 48 months follow-up. Sustained VL suppression was defined as VL below the level of detection for the last 12 months (at least 3 tests, interval 6 to 9 months). Immunological control was defined as no significant immunosuppression (low CD4 counts or CD4%) during the last 12 months according to WHO definition (3 or more tests, separated 6 to 9 months). Sustained undetectable proviral HIV-1-DNA was defined as two consecutive measurements below 1 copy/106 PBMC (minimum, 5 million) with an interval of 6 +/-1 months. DNA was measured by droplet digital PCR.

Figure 2. Flow Chart of the EARTH COHORT, according to viral load control, HIV-1 DNA control and CD4.



Sustained undetectable HIV-DNA can be achieved in children; not only treating immediately at birth, but also in children treated from 27 to 112 days of life

Figure 2. Blue, viral load. Red, HIV-1 DNA. Yellow, percentage of CD4 (cells/mm³)



RESULTS

We enrolled 207 participants; 155 (74.9%) had at least 12 months of follow-up. Five participants (3 female and 2 male) (3.2% [5/155]) had two consecutive negative HIV-1 DNA, sustained VL suppression and immunological control. Their median baseline VL was 22 341 copies/mL (IQR, 649 to 5,041,861), baseline CD4 count and % were 1928 (1698 to 3080) and 42% (34% to 48%). They started ART at 27, 32, 32, 59 and 112 days, and 3/5 reached VL undetectable before 1 year of ART. They all received PMTCT and treatment with the standard of care schedule at their country, which was abacavir, lamivudine and lopinavir/ritonavir. They all remained in WHO Clinical stage I. The adherence (combining self-reported and observed) to ART was recorded as good in 73% to 100% of the visits.

CONCLUSIONS

Children with ART started within 4 months of life and immediately after diagnosis as per standard of care in SSA can achieve sustained undetectable HIV-1 DNA, VL and high CD4, similar to children treated in the first 48 hours of life. Children with these features may have a greater likelihood of ART-free viral control and represent ideal candidates for future analytical treatment interruption trials targeting HIV cure.

ADDITIONAL KEY INFORMATION

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