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

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Alfredo Tagarro[1], Kavidha Reddy,[2] Sara Dominguez-Rodriguez[1], Pablo Rojo[1,3], Shaun Barnabas[4], Kennedy Otwombe[5], Maria-Grazia Lain[6], Almoustapha Maiga[7], Louise Kuhn[8], Paolo Palma[9], Nicola Cotugno[9], Eleni Nastuoli[10], Carlo Giaquinto[11], Thumbi Ndung'u[12], Paolo Rossi[6], on behalf of the EPIICAL Consortium

[1] Instituto de Investigación 12 de Octubre, Madrid, Spain. SERMAS, Madrid, Spain. Universidad Europea, Madrid, Spain.[2] Africa Health Research Institute, Durban, South Africa. [3] Universidad Complutense de Madrid, Madrid, Spain.[4] FAMCRU, Tygerberg Children's Hospital (TCH), Stellenbosch University (SU), Cape Town, South Africa. [5] Perinatal HIV Research Unit, Chris Hani Baragwaneth Hospital, University of the Witwatersrand, Soweto, South Africa. [7] Centre Hospitalier Bamako. Bamako, Mali. [8] Gertrude H. Sergievsky Center, Vagelos College of Physicians and Surgeons, Columbia University Irving Medical Center, New York, NY, USA. [9] Clinical Immunology and Vaccinology Unit, Bambino Gesù Children's Hospital, IRCCS, Rome, Italy; Department of Systems Medicine, University of Rome "Tor Vergata", Italy. [10] University College of London, London, UK, [11] Penta Foundation, Padova, Italy. Division of Pediatric Infectious Diseases, Department for Women's and Children's Health, Padova, Italy. [12] HIV Pathogenesis Programme (HPP), Nelson R. Mandela School of Medicine, Durban, South Africa.

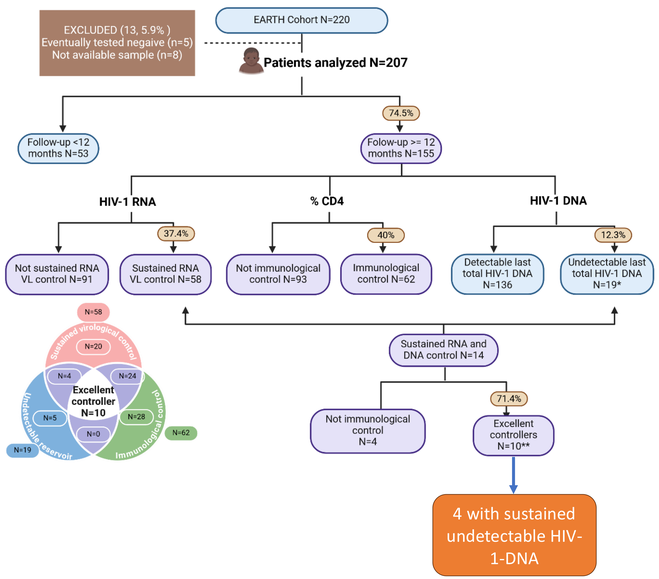
BACKGROUND

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

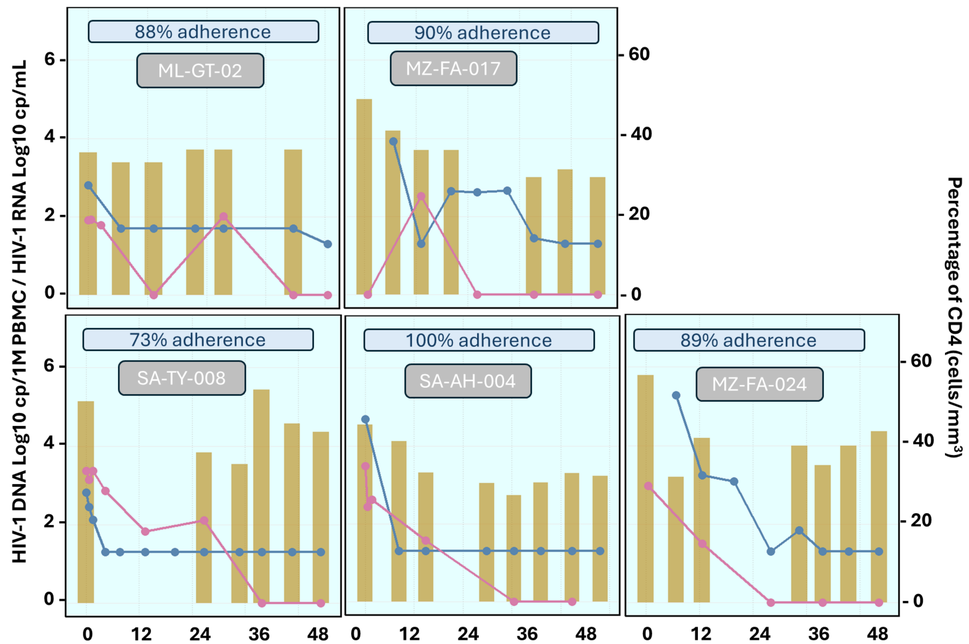
We enrolled infants who initiated ART at 3 months or younger in Mozambique, South Africa and Mali (EARTH-EPIICAL Cohort). Children were monitored 2, 6, 12 and 24 weeks after enrolment, followed by biannual check-ups up to 4 years after enrolment. We identified infants with sustained viral load (VL) suppression, 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 HIV1-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/mm^3)



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

Author Contact Information: alfredo.tagarro@salud.madrid.org, alfredotagarro@gmail.com

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