

1 out of 20 children with HIV can achieve undetectable HIV-1 reservoir in Africa

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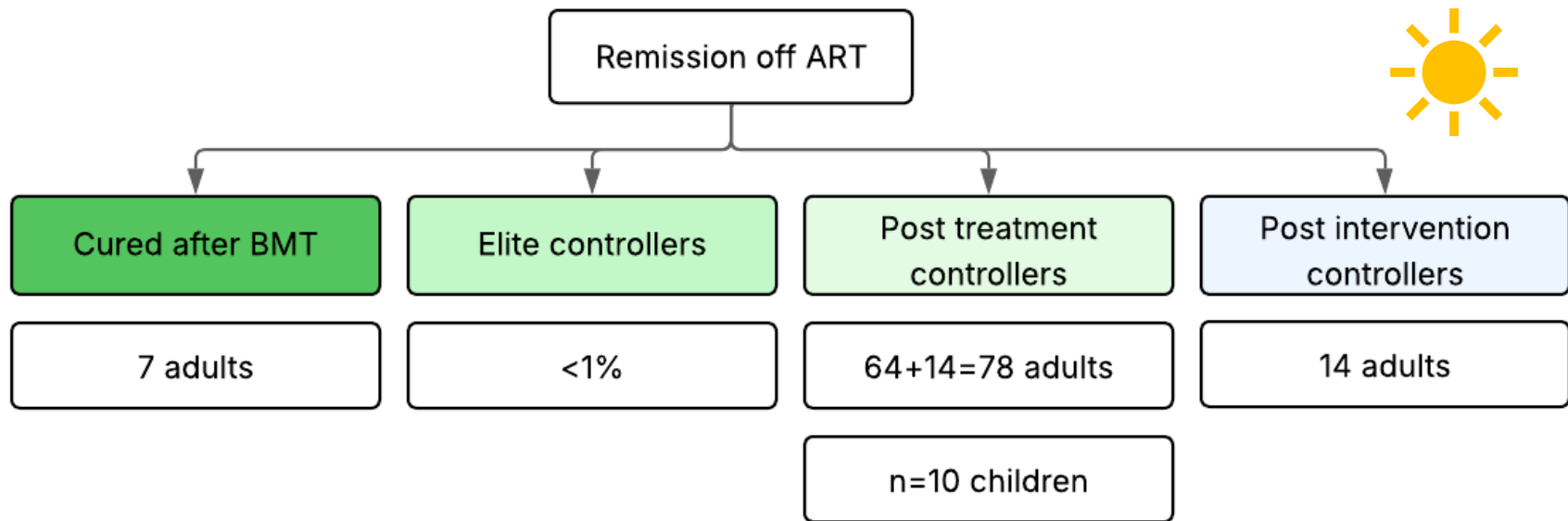
Conflict of Interest



	No, Nothing to disclose
x	Yes, please specify

Company / Name	Honoraria / Expense	Consulting / Advisory Board	Funded Research	Other (Please specify)
ViiV			To my institution, investigator-initiated research project	
Pfizer			To my institution, investigator-initiated research project	
Gilead	Webinar 2021			
GSK				Registration meeting via Scientific Society
Astra Zeneca				Registration meeting via Scientific Society
Biomerieux	Seminar 2025			
Cepheid		Consulting 2024		

Background

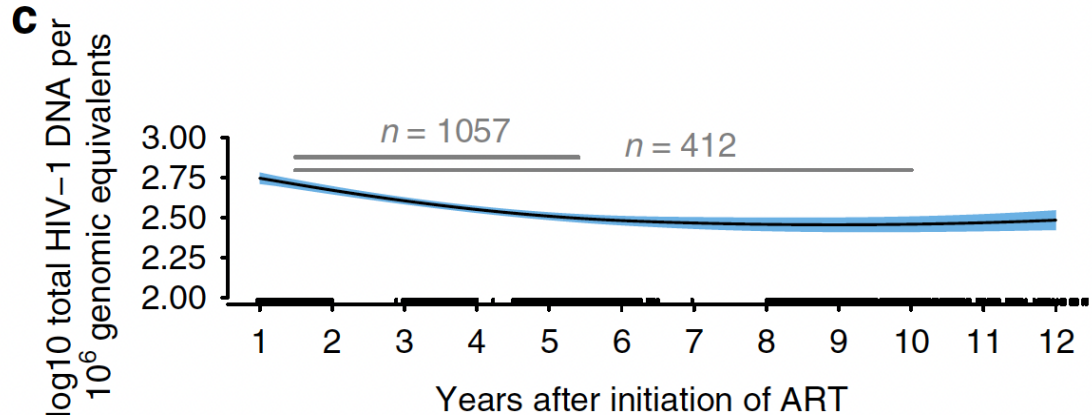
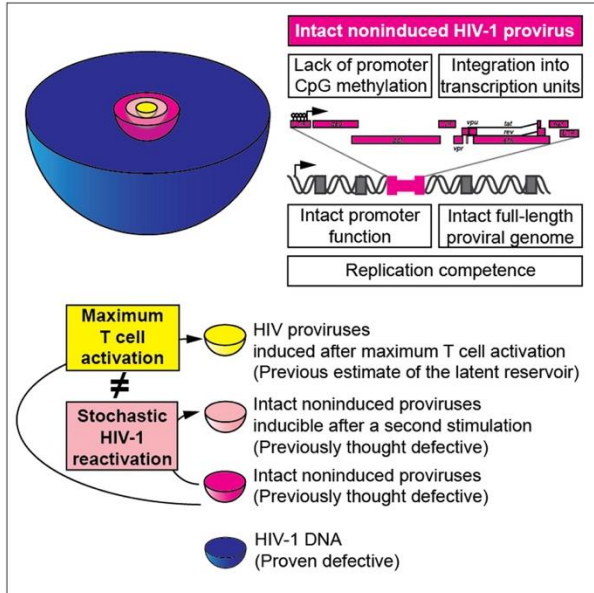


- Mississippi baby (Persaud et al) – treated <48h
- French adolescent (Frange et al)
- South African child (Violari et al)
- Three children IMPAACT P1115 (Persaud et al) – treated <48h
- Five children (Bengu et al) – cART 11 days

Very early treatment

Viral features of post-treatment controllers

- No residual replication
- No viral evolution
- **Very low HIV-DNA**, and if any, defective (not intact).

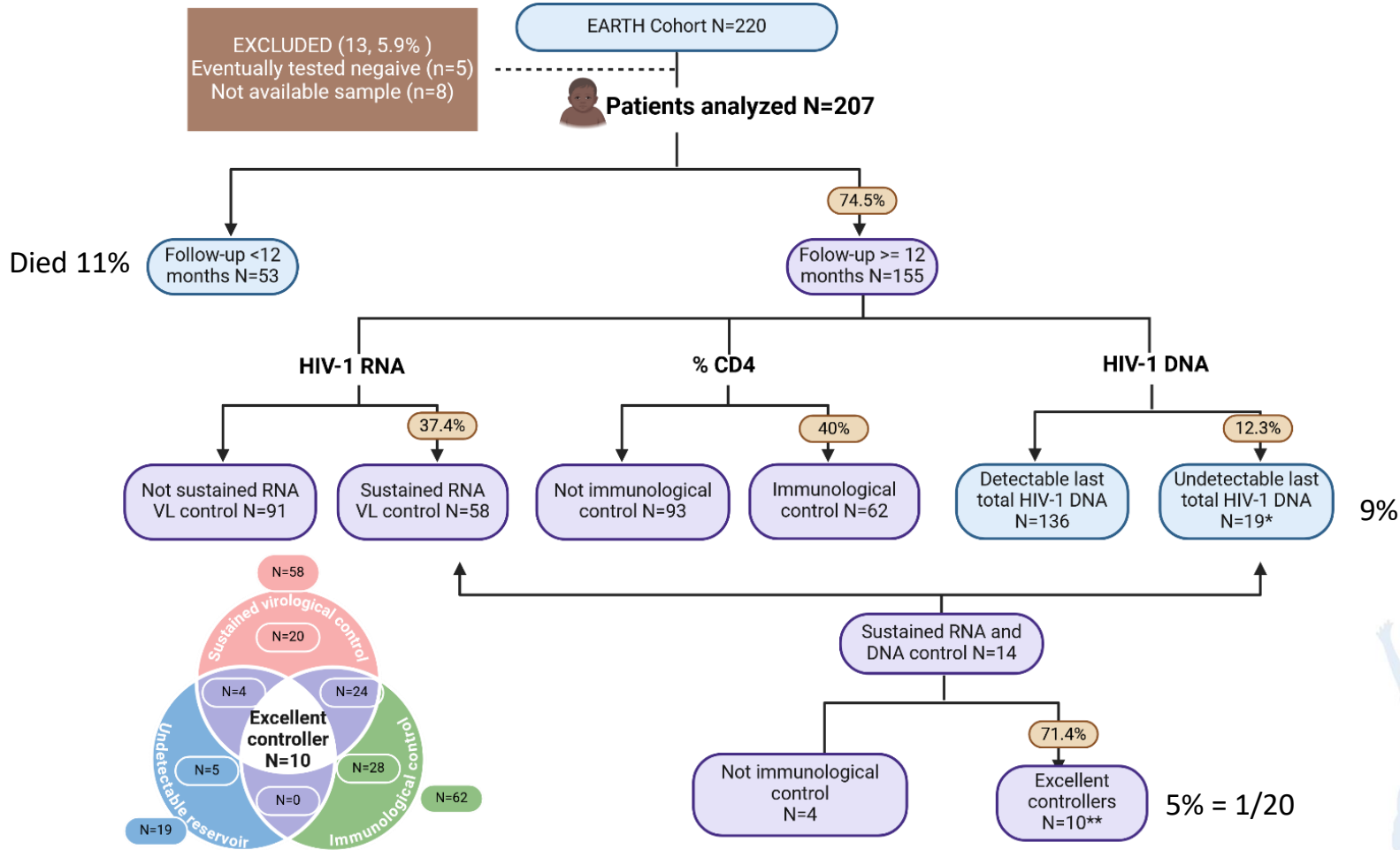


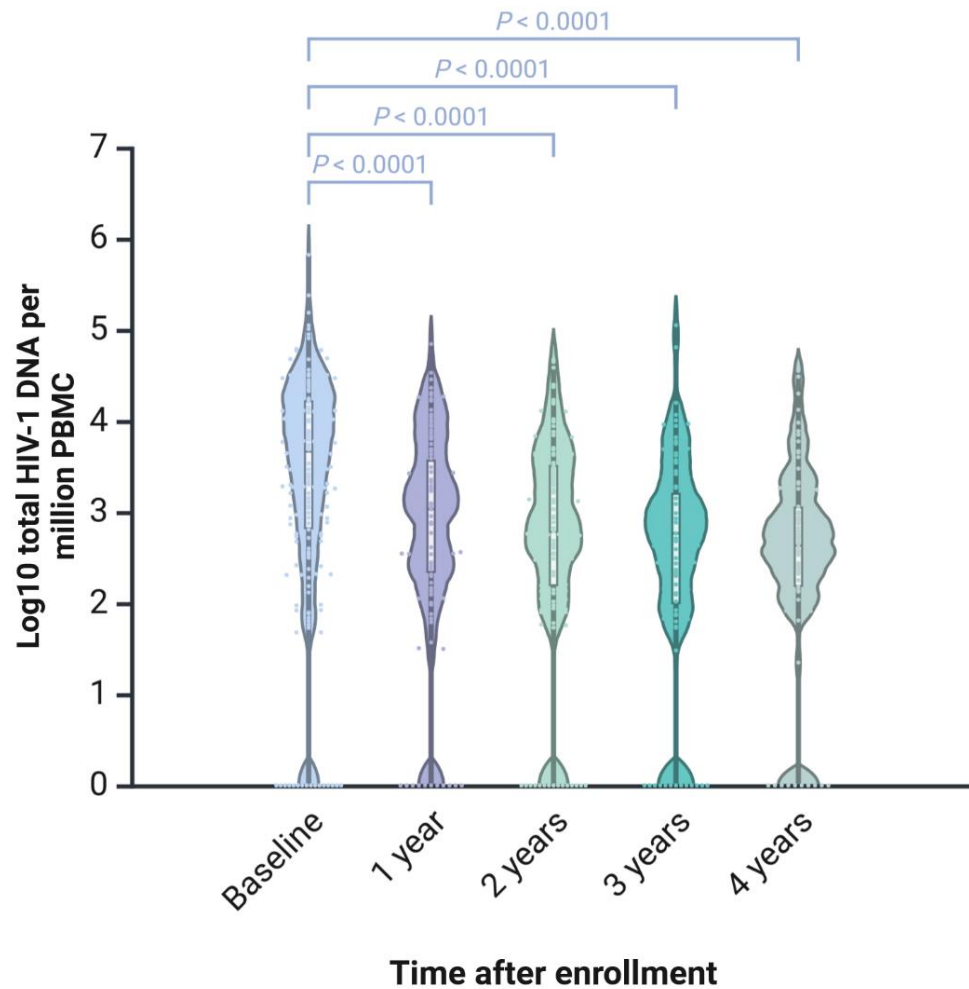
Methods

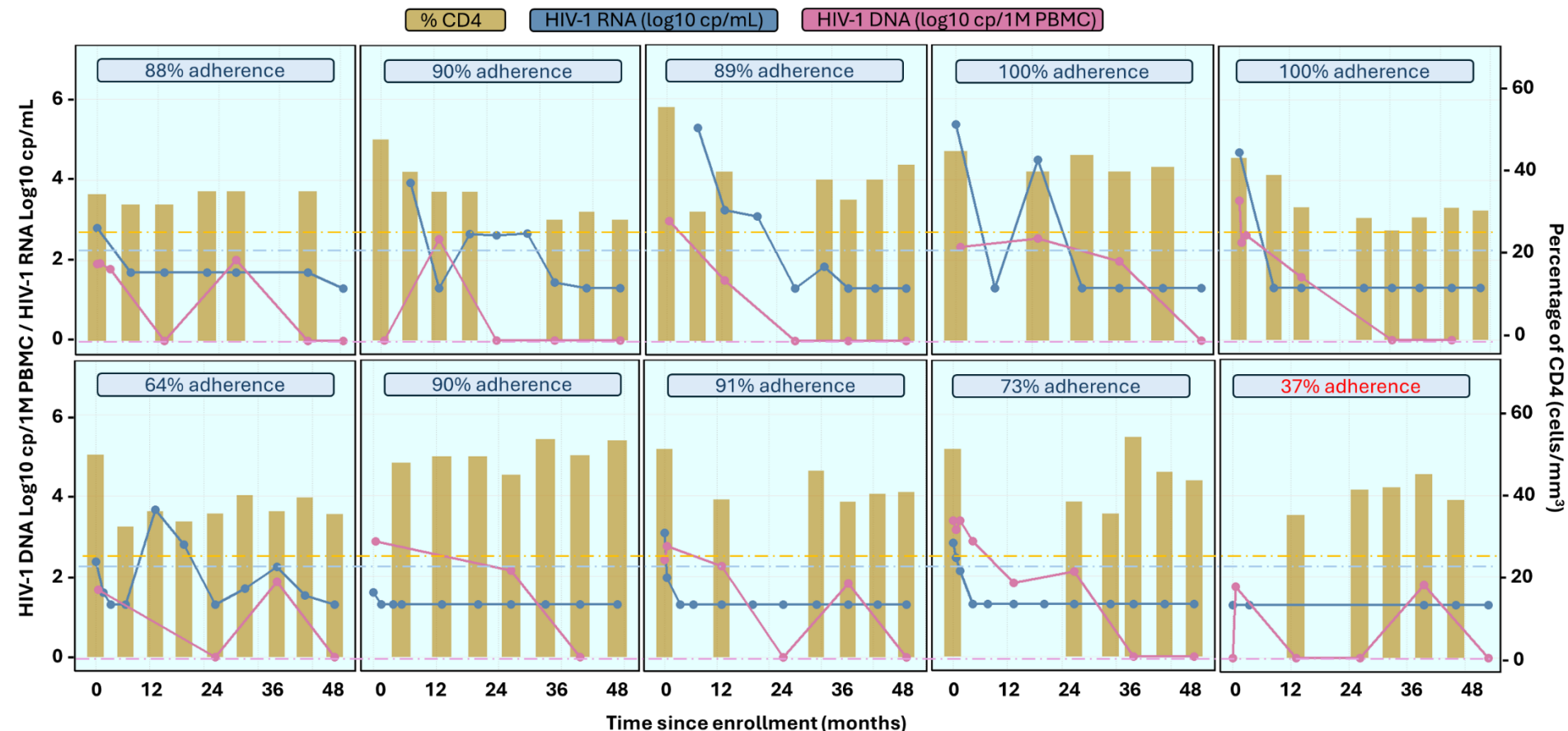


- We enrolled infants <6 months in Mozambique, South Africa and Mali
- Early treated (median, 32 days)
- Monitored 2w, 6w, 3 mo and 6 mo, and ev/6 months up to 4 years after enrolment.
- The reservoir was measured with ddPCR - HIV-1 DNA in ≥ 5 million PBMC, once a year
 - Proviral HIV-1 DNA was undetectable if below 1 copy/ 10^6 PBMC.
- Definitions
 - Sustained VL suppression: VL undetectable for the last 12 months.
 - Immunological control: no significant immunosuppression during the last 12 months.









Reported good adherence – but 3 of them only 37%, 64% and 73% of visits.

Excellent controllers

- All had PMTCT, started ART at a median of 29 days (range 11 to 112 days).
- Baseline
 - Lower VL (2.81 vs 4.88 logs), $p=0.002$
 - Lower DNA (2.3 vs 3.6 logs), $p=0.001$
 - Higher CD4% (46 vs 38%), $p=0.012$
- Faster time to viral suppression (1.4 vs 5.26 months, $p=0.054$).

	Excellent control YES N=10	Other N=144	P value
Enrolling site:			0.139
South Africa	8 (80.0%)	89 (61.8%)	
Mozambique	1 (10.0%)	49 (34.0%)	
Mali	1 (10.0%)	6 (4.17%)	
Birth Sex:			0.516
Female	6 (60.0%)	66 (45.8%)	
Time of follow-up:			0.279
Months	44.1 [43.6;45.8]	44.0 [36.9;45.4]	
Weight for age at baseline:			0.528
Z-score	-1.48 [-1.96;-0.93]	-1.21 [-2.23;-0.33]	
Age at HIV-1 diagnosis:			0.812
Days of life	20.0 [2.00;31.8]	31.0 [0.00;50.0]	
Age at ART initiation:			
Days of life	28.5 [17.8;42.5]	34.0 [21.5;78.5]	0.236
Less than 1 month	6 (60%)	51 (35.4%)	0.174
WHO Clinical stage at baseline:			0.570
Stage I	9 (90.0%)	132 (92.3%)	
Stage II	1 (10.0%)	3 (2.10%)	
Stage III	0 (0.00%)	4 (2.80%)	
Stage IV	0 (0.00%)	4 (2.80%)	
Baseline viral load RNA:			
Log10 copies/mL	2.81 [2.37;3.08]	4.88 [3.58;5.59]	0.002
>5 logs	1 (11.1%)	66 (46.5%)	0.044
Peak viral load RNA			0.013
Log10 copies/mL	3.65 [2.81;5.37]	5.61 [4.55;6.30]	
Baseline percentage CD4:			0.012
%	46.2 [41.3;51.1]	38.0 [29.6;44.2]	
Baseline percentage CD4:			1.000
<15%	0 (0.00%)	8 (5.67%)	
15-25%	0 (0.00%)	5 (3.55%)	
>25%	10 (100%)	128 (90.8%)	
Percentage of CD4 nadir			<0.001
%	34.5 [32.1;37.7]	23.8 [18.6;28.5]	
Baseline total HIV-1 DNA			0.001
Log10 copies/10 ⁶ PBMC	2.36 [1.78;2.94]	3.67 [2.91;4.22]	
Percentage of Adherence			0.599
%	0.11 [0.02;0.24]	0.20 [0.00;0.36]	
Viral Control			
Time to viral suppression (m):	1.46 [1.11;4.80]	5.26 [2.17;16.3]	0.054
Time suppressed (y)	2.68 [1.81;3.36]	2.23 [1.18;3.04]	0.247
RNA Blips	0 (0.00%)	3 (2.08%)	0.238
Mother social:			0.526
Yes	4 (40.0%)	75 (52.1%)	
Mother health issues:			1.00
Yes	3 (30.0%)	48 (33.3%)	

Conclusions



- Children with ART started within 4 months of life can achieve undetectable reservoir (not only those treated extremely early in controlled studies)
 - Those children might represent post-treatment controllers
 - There might be thousands of them undetected
- Children with these undetectable VL and DNA represent ideal candidates for analytical treatment interruption trials targeting HIV cure.

EPIICAL → PEDIATRIC HIV CURE INITIATIVE



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