24-MONTH HIV VIRAL LOAD TRENDS SINCE DOLUTEGRAVIR INITIATION AMONG CHILDREN AND ADOLESCENTS WITH HIV

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BACKGROUND

- Dolutegravir (DTG) has become the preferred antiretroviral therapy (ART) option for children and adolescents living with HIV due to its high potency, favorable resistance profile, and once-daily dosing.
- However, data on virological response in this population remain limited in real-world settings

OBJECTIVE

- **To describe patterns of virological response to DTG-based ART in a cohort of children and adolescents living with HIV in West Africa.**

METHODS

- **All children and adolescents living with HIV aged 0 to 19 years initiating DTG-based ART** between **2019-2023** and enrolled in pediatric HIV care sites contributing to the West African pediatric International epidemiological Database for Evaluating AIDS (IeDEA pWADA)



Figure 1. Map of the IeDEA West African pediatric collaboration (IeDEA pWADA)

- Baseline : DTG initiation
- Follow up : 24 months since baseline or loss-to-follow-up (no clinical contact ≥ 7 months) or death, or database closeout date, whichever came first.
- Baseline viral load (VL) was the closest measurement within 6 months prior and 2 weeks post DTG initiation
  - Viral suppression (VS): VL < 200 copies/mL
  - Low level viremia (LLV) : 200 ≤ VL <1000 copies/mL
  - Viral failure (VF) : VL ≥ 1000 copies/mL
- **Group-based trajectory modelling (GBTM)** to assign each CALHIV to a group based on their VL across visits during follow-up:
  - Logistic trajectory to identify groups with similar longitudinal patterns of viremia based on detectable or undetectable VL at a 1000-copy threshold.
- **Multinomial regression analysis** adjusted for age, sex and program was used to identify factors associated with each VL trajectory.

Children and adolescents experiencing viral failure at DTG initiation remain in moderate or high probability for viral failure, unable to achieve viral suppression by 24 months on DTG.

RESULTS

Table 1. Baseline characteristics and 24-month outcomes of the 2,319 children and adolescents living with HIV initiating DTG

	N (%)
Female	1,065 (46%)
Site	
CePREF, Côte d'Ivoire	307 (13%)
Cocody, Côte d'Ivoire	262 (11%)
Yopougon, Côte d'Ivoire	236 (10%)
CIRBA, Côte d'Ivoire	270 (12%)
Yaldago, Burkina Faso	180 (8%)
Cotonou, Benin	203 (9%)
Gabriel Toure, Mali	475 (20%)
Korle Bu, Ghana	201 (9%)
NIMR, Nigeria	185 (8%)
Age at DTG initiation	
< 5 years	171 (7%)
5-9 years	499 (22%)
≥ 10 years	1,649 (71%)
Viral load at baseline	
Viral suppression	1,147 (49%)
Low level viremia	100 (5%)
Viral failure	450 (19%)
Missing	622 (27%)
24-month outcome	
Deceased	14 (0.6%)
Lost-to-follow-up	148 (6.4%)

Median follow-up time: 15 months (IQR : 5-24)

Figure A

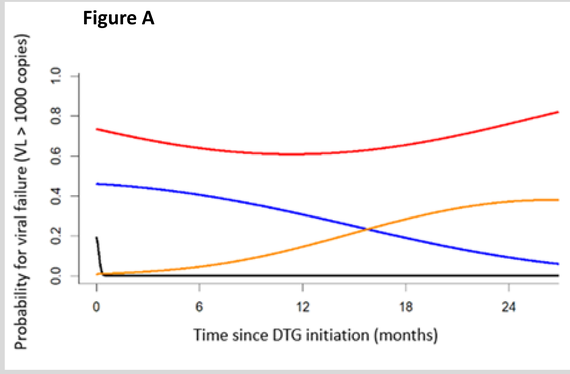


Figure B

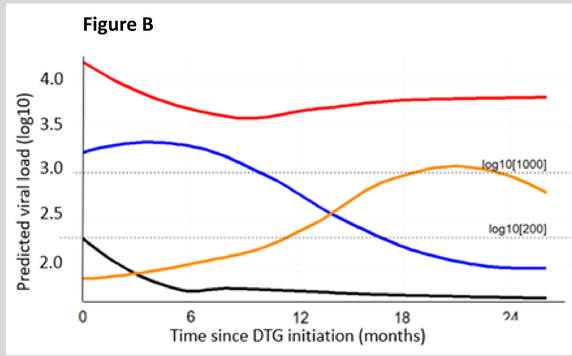


Figure 1. Probability for viral failure (A) and predicted HIV Viral Load trajectories since Dolutegravir (DTG)-based ART initiation (B) in children and adolescents living with HIV in West Africa (IeDEA pWADA). Group Based Trajectory Modelling.

RESULTS, continued

- Sex and age were not associated with having one of the four trajectories identified using GBTM
- There was a site effect, where children followed-up in the CePREF site in Côte d'Ivoire were most likely to experience sustained viral failure.
- Of note, the CePREF cohort is a historical cohort of children who have been on ART the longest

CONCLUSIONS

- We identified four different patterns among children and adolescents living with HIV initiating DTG; 78% had sustained viral suppression
- Those in VF at DTG initiation remained at moderate or high probability for VF, unable to achieve VS by 24 months on DTG.
- No individual factors associated with HIV viral load trends in this model. Further investigation is needed, in particular regarding ART history
- Additional studies are needed to better understand among children and adolescents living with HIV in VF at DTG initiation and guide interventions to improve virological outcomes among children and adolescents living with HIV.

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