

# Early effect of transitioning children to dolutegravir-based regimens on viral load suppression in Malawi

**Authors:** Lucky Makonokaya<sup>1</sup> (lmakonokaya@pedaids.org), Lester Kapanda<sup>1</sup>, Madalitso Bottoman<sup>1</sup>, Shalom Dunga<sup>1</sup>, Zuze Joaki<sup>1</sup>, Louiser Kalitera<sup>1</sup>, Harrid Nkhoma<sup>1</sup>, Kondwani Nkanaunena<sup>2</sup>, Alice Maida<sup>2</sup>, Susan Hrapcak<sup>3</sup>, Dumbani Kayira<sup>2</sup>, Cathy Golowa<sup>1</sup>, Thulani Maphosa<sup>1</sup>

**Affiliations:** <sup>1</sup>Elizabeth Glaser Pediatric AIDS Foundation, Malawi, <sup>2</sup>Centers for Disease Control and Prevention, Malawi, <sup>3</sup>Centers for Disease Control and Prevention, Atlanta

## BACKGROUND

- Viral suppression (VS) in children has remained suboptimal compared to adults.
- In 2021, EGPAF and the Ministry of Health in Malawi rolled out a pediatric formulation of dolutegravir (10mg film-coated tablet) (pDTG) in children <20 kgs.
- We evaluated the impact of transitioning children <20 kgs to pDTG on VS in Malawi.

## METHODS

- We analyzed routine retrospective program data from electronic medical record systems (EMRS) pooled across 169 healthcare facilities in Malawi supported by the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF) in eight districts.
- Children under 15 years and weighing less than 20 kgs, receiving antiretroviral therapy (ART) between July 2021 and June 2022, were included.
- We described the distribution of demographic and clinical characteristics, ART regimen, ART adherence (good adherence defined as missing no more than two antiretroviral doses in a month at the last follow-up visit), and VS (<1000 copies/mL).
- We used a logistic regression to identify factors associated with post-transition VS, adjusting for demographic characteristics, initial ART regimen, guardian type, adherence, and pre-transition viral load.

## Main Findings

**38.6% (n=860) of children had routine viral load testing results six months following the transition to pDTG-based ART; of those with a viral load test, 81.1% (n=700) achieved VS.**

## RESULTS

- 2,468 children living with HIV (CLHIV) were included, 55.3% (n=1,364) of whom were age <60 months.
- 90.4% (n=2,230) had initiated non-DTG-based ART before pDTG was available.
- 62.7% (n=1,398) of the patients who had been on other ART regimens, had a viral load (VL) test result before the transition to pDTG; of those tested, 62.1% (n=868) achieved VS.
- 99.9% of CLHIV (n=2,227) transitioned to pDTG-based regimens (without change in nucleoside backbone). 52.9% (n=1,179) of them had good ART adherence at 6 months post-transition.
- 38.6% (n=860) had routine VL testing results six months following the transition to pDTG-based ART; of those tested, 81.1% (n=700) achieved VS.
- Good ART adherence and being virally suppressed before transition was associated with post-transition VS

**Table 1: Factors associated with viral suppression among CLHIV <20 kgs, receiving ART in EGPAF-supported facilities, who transitioned to pDTG-based ART (Logistic regression)**

| Characteristic                                | VL <1000 copies/mL<br>n (%) | Unadjusted ORs<br>(95% CI) | Adjusted ORs<br>(95% CI) |
|---|-----------------------------|----------------------------|--------------------------|
| <b>Sex</b>                                    |                             |                            |                          |
| Female  | 394 (81.2%)                 | Ref                        | -                        |
| Male  | 306 (81.0%)                 | 0.98 (0.70-1.38)           | 1.03 (0.62-1.71)         |
| <b>Age range (months)</b>                     |                             |                            |                          |
| <12   | 5 (62.5%)                   | Ref                        | -                        |
| 12-23   | 41 (75.9%)                  | 1.89 (0.40-9.02)           | -                        |
| 24-59   | 294 (78.2%)                 | 2.15 (0.50-9.19)           | -                        |
| 60+   | 360 (84.7%)                 | 3.32 (0.78-14.25)          | -                        |
| <b>Facility location</b>                      |                             |                            |                          |
| Urban   | 253 (83.2%)                 | Ref                        | -                        |
| Rural   | 447 (80.0%)                 | 0.80 (0.56-1.16)           | -                        |
| <b>EGPAF clinical staff available on site</b> |                             |                            |                          |
| Yes   | 500 (82.1%)                 | Ref                        | -                        |
| No  | 200 (78.7%)                 | 0.81 (0.56-1.16)           | -                        |
| <b>Initial ART Regimen</b>                    |                             |                            |                          |
| PI-Based*                                     | 549 (81.7%)                 | Ref                        | 1                        |
| NNRTI-Based**                                 | 95 (76.6%)                  | 0.73 (0.46-1.16)           | -                        |
| Other   | 3 (60.0%)                   | 0.34 (0.05-2.03)           | -                        |
| <b>Adherence to ARVs</b>                      |                             |                            |                          |
| Poor Adherence                                | 281 (75.3%)                 | Ref                        | 1                        |
| Good Adherence                                | 419 (85.5%)                 | 1.93 (1.37-2.73)           | 2.79 (1.65-4.71)         |
| <b>Pre-transition Viral load</b>              |                             |                            |                          |
| ≥1000 copies/mL                               | 181 (71.2%)                 | Ref                        | 1                        |
| <1000 copies/mL                               | 358 (93.0%)                 | 5.32 (3.30-8.57)           | 5.53 (3.23-9.48)         |

\*Protease inhibitor-based, \*\*Non-Nucleoside reverse transcriptase inhibitor-based

## CONCLUSIONS

- VS was achieved in most children tested within the first six months after pDTG transition.
- However, adherence was suboptimal in this group, and VL testing at six months post-transition was limited.
- Interventions to improve VL testing and enhance good adherence are needed in children to continue progressing towards the 95-95-95 UNAIDS goals.

The work described in this poster was supported by the U.S President's Emergency Plan for AIDS Relief (PEPFAR) through the Centers for Disease Control and Prevention (CDC) under the Cooperative Agreement NU2GGH002425. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of CDC.