PERSISTENT LOW-LEVEL VIREMIA AMONG PEOPLE LIVING WITH HIV ON TLD IN CAMEROON: BURDEN AND PREDICTORS

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BACKGROUND

- Tenofovir+lamivudine+dolutegravir (TLD) has considerably improved the achievement of viral suppression (<1000 copies/ml), with an increased proportion of recipients of care (RoC) in the range of low-level viremia (50-999 copies/ml);
- Of note, persistent low-level viraemia (pLLV) may indicate suboptimal adherence or emerging drug resistance, which are major causes of treatment failure. ;
- This study assessed the burden and determinants of pLLV among RoC on TLD as first-line regimen in Cameroon.

METHODS

- We conducted a retrospective cohort analysis among RoC on TLD monitored for HIV plasma viral load (PVL) between January 2022 and August 2025 at the Chantal BIYA International Reference Centre (CIRCB), Yaoundé. ;
- Eligible patients were those with 2 consecutive PVL results during follow-up; those with treatment interruption or missing consecutive measures were excluded.;
- pLLV was defined as 2 PVL between 50–999 copies/mL over 6 months. Baseline PVL was categorized as 50–200 vs 201–999 copies/mL. Logistic regression was used to identify factors independently associated with pLLV, with p<0.05 considered as statistically significant.

RESULTS

- A total of 975 RoC on TLD experiencing LLV were included (66.7% female, 93.3% adults).
- At baseline, median PVL was 90 [60-173] copies/ml; 77.1% had PVL 50-200 copies/ml and 22.9% 201-999 copies/ml.

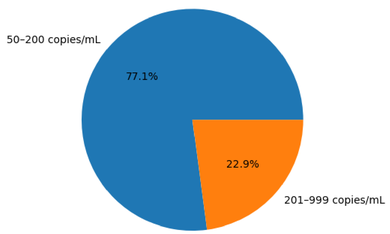


Figure 1 - Base line viral load among participants

Despite high viral suppression (<1000 copies/ml) rate in the TLD era, the substantial burden of persistent low-level viremia (50-999 copies/ml) in Cameroon underscores the urgent need to incorporate routine pLLV surveillance into national HIV programs to sustain treatment effectiveness and prevent emerging resistance.

RESULTS

- The overall burden of pLLV was 77.5%, with a median duration of 18 [12-24] months;
- Stratified by treatment duration, pLLV prevalence was 81.6% (31/38) at 6–12 months, 82.1% (207/252) at 13–24 months, 80.1% (363/453) at 25–45 months, and 66.7% (154/231) beyond 45 months on TLD, (p<0.0001);

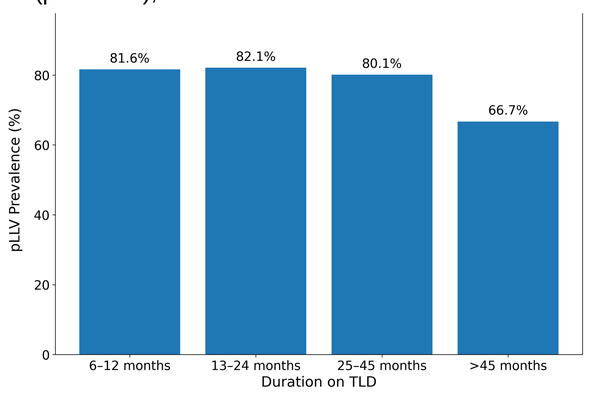


Figure 2 . Prevalence of Persistent LLV by Duration on TLD

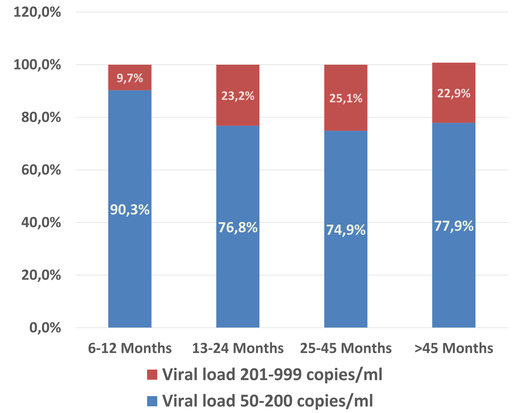


Figure 3 . Distribution of pLLV ranges by duration on TLD

The burden of pLLV was similar by sex (77.7% in female vs 77.2% male, OR: 0.9; p=0.95), but significantly higher among children/adolescents (88.7%; OR: 2.4; p=0.03)

Table . pLLV according to gender and age

		Persistent low level viremia		OR	p-value
		Yes	No		
Gender	Female	505 (77.7%)	145 (22.3%)	1 (ref)	—
	Male	250 (77.2%)	74 (22.8%)	0.97	0.84
Age	Children/Adolescents	700 (76.8%)	212 (23.2%)	1 (ref)	—
	Adults	55 (88.7%)	7 (11.3%)	**2.4**	**0.03**

- At baseline, RoC with PVL 201–999 copies/mL were more likely to experience pLLV (84.3% vs 76.1%, OR 1.7; p=0.006).

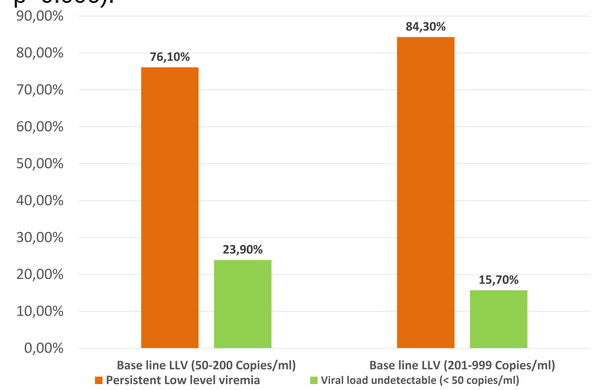


Figure4 . pLLV according to base line LLV

- After multivariable adjustment, only baseline PVL 201–999 copies/mL remained independently associated with pLLV (aOR 1.74; 95% CI: 1.1–2.5; p=0.007).

CONCLUSIONS

In spite of the encouraging viral suppression in the TLD-era, pLLV remains concerning among RoC in Cameroon, driven essentially by baseline viremia between 201–999 copies/mL.

- Thus, achieving epidemic control would require integrating pLLV surveillance into HIV programs. This will ensure a sustained treatment effectiveness, guide timely interventions, and mitigate emerging resistance to TLD in low- and middle-income countries.

Additional key information

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