DETECTABLE VIRAL LOAD PREDICTS VIROLOGICAL FAILURE AT FOLLOW-UP

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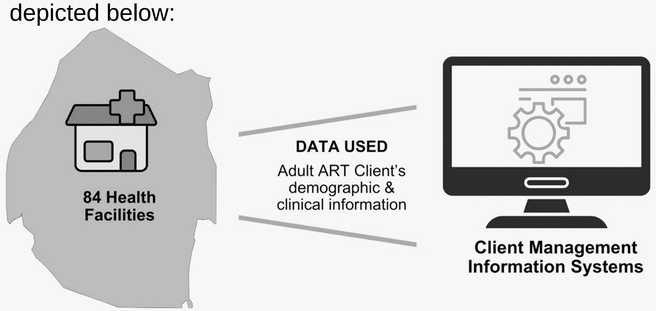
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BACKGROUND

- Eswatini adopted the WHO recommended cut-off of HIV RNA above 1000 copies/ml as a criterion for virologic treatment failure[2]. Virologic failure (VF) is however more likely to occur in patients with detectable viral load (VL) >200 copies/ml than in those with low-level viremia between 50 and 199 copies/ml[1]. Current body of evidence indicates that failure rate is (about 2x) higher if VL is 50-200c/ml and drug resistance continues to emerge if this persists.
- We described and assessed the association of different levels of low-level viremia (LLV) with subsequent virological failure among a cohort of HIV-infected patients receiving combination ART in Eswatini (Manzini and Lubombo regions) who had their first VL done between October 2021 to September 2022.

METHODS

- We conducted a cross-sectional secondary analysis of HIV care data from Lubombo and Manzini regions. The method is depicted below:



INCLUSION CRITERIA

☑Clients with a baseline and one-year follow-up VL results (Oct 21-Sep 22)

DATA ANALYSIS

- Descriptive, comparative and multivariate logistic regression analysis reporting adjusted odds ratios (AOR).
- Viral load was categorized into <50, 50-200, 201-500, 501-999 and ≥1000.

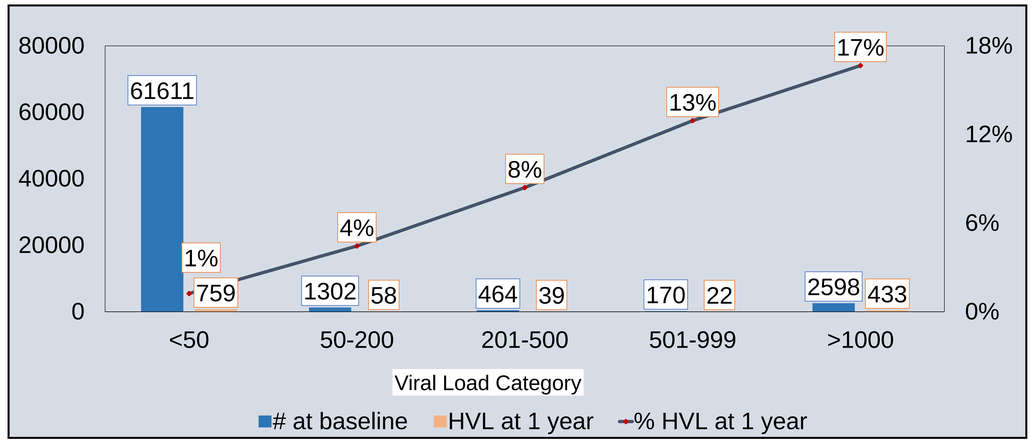


Figure 1: Comparison of clients with HVL at follow-up with baseline viral load categories.

The risk of breakthrough virological failure increases with the level of detectable viremia.

RESULTS

- Of 66,145 PLHIV in the database, 63,547 (96%) had a suppressed viral load.
- Most 57,547 (87%) were on a Dolutegravir-based ART regimen.
- The median age was 39 (IQR: 32, 48); 43,879 (66.3%) were females, and the median duration on ART was six years (IQR: 4, 10).
- Of 2598 with a high viral load (HVL) (VL≥1000) at baseline, 1,550 (59.8%) had follow-up VL data; 1,117 (72%) were suppressed, and 433 (28%) remained unsuppressed.
- Among clients with suppressed baseline VL (n=63,547), 34,757 (54.7%) had follow-up VL data; 33,879 (97.5%) remained suppressed, and 878 (2.5%) had HVL.
- Comparison of clients with HVL at follow-up with baseline categories of VL indicates a linear increase in the proportion of clients with HVL (***Figure 1***).
- **Baseline predictors of HVL at follow-up:**
  - ***age <15*** (AOR 2.0; 95%CI: 1.46,2.74; p<0.001), ***15-24*** (AOR 2.72; 95%CI:2.17,3.40; P<0.001), ***25-34*** (AOR 1.62;95% CI: 1.33, 1.99;p<0.001) compared to ≥45 years;
  - ***males*** (AOR 1.15; 95%CI:1.01,1.31; p=0.029) compared to females;
  - ***baseline VL=50-200*** (AOR 3.52; 95%CI:2.65,4.67; p<0.001), ***VL=201-500*** (AOR 7.22; 95%CI: 5.1, 10.3; p<0.001), ***VL=501-999*** (AOR 11.4; 95%CI: 6.9, 18.8; p<0.001), ***VL≥1000*** (AOR 13.1; 95%CI: 11.4, 15.1; p=0.001) compared to baseline VL<50.

CONCLUSIONS

- Our results showed that 96% of all PLHIV who received their first VL were suppressed, and this was sustained at second VL, with no differences across regions. The risk of breakthrough VF increased with the level of viremia.
- Persistent detectable VL may predict future virological failure. It is necessary for programs in LMICs to consider changing from a VL threshold of >1000 copies/ml as indicative of VF and adopting a lower cut-off to guide timely case management of viremia cases.
- This analysis also highlights the need for strategies that support initiating and strengthening stepped-up adherence counselling (SUAC) early for all clients with LLV, to prevent progression to virological failure and propagating resistance.
- As a result, the revised Eswatini National Treatment Guidelines now recommend a cut-off of <50 copies/ml to define undetectable VL and provide for SUAC for all clients with LLV.

REFERENCES

1. Fleming J, Mathews WC, Rutstein RM, Aberg J ,et al. Low-level viremia and virologic failure in persons with HIV infection treated with antiretroviral therapy. AIDS. 2019;33(13):2005-12.
2. Eswatini Integrated HIV Management Guidelines 2022. Link

ADDITIONAL KEY INFORMATION

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