

Blood pressure change among people living with HIV transitioning from efavirenz- to dolutegravir-based ART: A Cohort Study from Zimbabwe

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Background

- Following the WHO recommendations in 2019, dolutegravir (DTG) replaced efavirenz as the preferred first-line third drug co-administered with tenofovir and lamivudine/emtricitabine
- Since then, stable people living with HIV receiving efavirenz containing regimens were routinely switched to DTG containing regimens in countries following WHO guidelines for antiretroviral therapy management, including Zimbabwe
- DTG has been associated with hypertension (HTN)

Aims

We aimed to:

- ✓ Assess the overall trend of blood pressure change from 12 months prior to 35 months post switch among clients switching to DTG containing antiretroviral therapy stratified by hypertension diagnosis at the time of switch and sex

Methods

- We abstracted blood pressure (BP), age, sex, and HTN diagnoses records from routinely collected data at Newlands Clinic, Harare, Zimbabwe (Figure 1)
- We included adult patients who routinely transitioned from tenofovir+lamivudine+efavirenz (TLE) to tenofovir+lamivudine+DTG (TLD)

TLE → TLD

- We aggregated data by month (from 12 months prior to 35 months after transitioning), HTN status and sex.
- For each aggregated data cell, we calculated median systolic and diastolic pressure (SBP, DBP) among patients contributing BP measurements to the data cell.
- We then fitted separate additive models to describe trends in median SBP and DBP by sex and baseline HTN diagnosis



Figure 1: A nurse measuring blood pressure at Newlands Clinic

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Results

- We analyzed 36,781 BP records from 3,416 participants (2,403 [70.3%] female)
- The median age was 44 years (IQR: 37 – 50)
- 712 (20.8%) had a diagnosis of HTN at baseline
- 82 (2.4%) had a diagnosis of diabetes mellitus at baseline
- Among the non-hypertensive at baseline, there was strong evidence for an increase in median SBP, which was more pronounced in males compared to females and some evidence for a slight increase in DBP as well (Figure 2).
- Among hypertensive participants, there was evidence for both increasing SBP and DBP, with similar estimated median DBP for both sexes, but higher SBP among males both before and after baseline
- The increase in BP among hypertensive participants peaked at 18 months post baseline with an estimated median of 133 (95% CI 131-134) mmHg SBP and 87 (86-89) mm DBP in females and 139 (95% CI 137-141) mmHg SBP and 88 (87-89) mm DBP in males and plateaued thereafter.

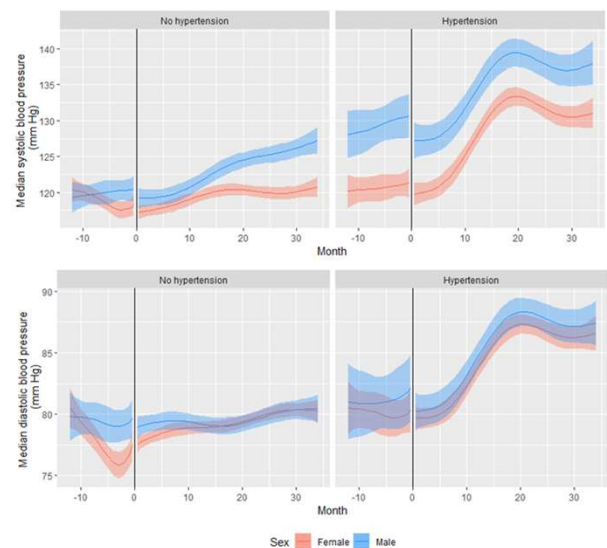


Figure 2: Median blood pressure from 12 months prior to- until 35 months post-transitioning from tenofovir + lamivudine + efavirenz to tenofovir + lamivudine +dolutegravir among patients with and without hypertension at time of transitioning (Month 0).

Conclusions

- Among non-hypertensive participants we observed smaller increase in SBP after transitioning from TLE to TLD and a larger increase in both SBP and DBP all hypertensive participants.
- Males and those with HTN on TLD could benefit from vigilant BP monitoring.

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