BACKGROUND

Patients on second-line ritonavir-boosted protease inhibitor (PI/r)-based regimens in resource-limited settings have high rates of nucleoside reverse transcriptase inhibitor (NRTI) resistance, but this information is unknown in routine clinical care. This study compared continuing PI/r + NRTIs versus bictegravir/tenofovir alafenamide/emtricitabine (B/F/TAF) in persons living with HIV (PWH) on second-line ART with no prior drug resistance testing.

METHODS

This prospective, open-label trial conducted at GHESKIO in Port-au-Prince, Haiti, randomized adults (≥18 years) with viral suppression on second-line PI/r-based ART to continue their current regimen vs. switch to B/F/TAF.

• Primary endpoint: Proportion of participants with HIV-1 RNA ≥200 copies/mL at week 48 using the FDA snapshot algorithm.

• The difference between groups was assessed with a non-inferiority margin of 4%.

Enrollment was stopped in December 2023, after 301 participants enrolled (290 with complete data; 11 in follow-up), at the recommendation of the Data Safety Monitoring Board (DSMB), due to limited access to the control regimen in Haiti.

RESULTS

Between October 2020 and March 2023, 290 participants were randomized and treated (B/F/TAF: 149; bPI: 141). Median age was 50 years (IQR 42, 58) and 165 (57%) were women. At enrollment, 175 (60%) were taking lopinavir/ritonavir and 115 (40%) atazanavir/ritonavir; 226 (78%) were taking tenofovir disoproxil fumarate, 51 (18%) zidovudine, and 13 (4%) abacavir; all were taking lamivudine or emtricitabine. The median time on PI/r was 3.7 years (IQR 2.2, 5.7 years).

Efficacy at the Week 48:

In preliminary analysis, at week 48, the proportion with HIV-1 RNA ≥200 copies/mL was 0.7% (1/149) and 2.8% (4/141) in the B/F/TAF and PI/r groups, respectively; difference -2.1 (95% CI: -6.7 to 2.2), meeting non-inferiority for B/F/TAF compared to PI/r (Table 1).

140 (94.0%) and 129 (91.5%), respectively had 48-week HIV-1 RNA <200 copies/mL. Eight in each group were censored – all had HIV-1 RNA <200 copies/mL at latest test. There were no study drug discontinuations due to adverse events in either group.

Safety:

There were no study drug discontinuations due to adverse events in either group.

This study was conducted during both COVID-19 and severe civil unrest and gang-related violence in Haiti. Follow-up was enabled by community health workers and neighborhood drug distribution when travel in Port-au-Prince was not safe or not possible for participants.

CONCLUSIONS

Switching virally suppressed adults on a second-line PI/r regimen to B/F/TAF is non-inferior to continuing PI/r-based ART, despite expected high rates of NRTI resistance and extreme civil unrest. Rates of viral suppression were high in both groups.