

Christine Latham,¹ Rimgaile Urbaityte,² Kenneth Sutton,¹ Denise Sutherland-Phillips,¹ William Spreen,¹ Ronald D'Amico¹

¹ViiV Healthcare, Durham, NC, USA; ²GSK, Brentford, UK

Introduction

- Cabotegravir + rilpivirine long-acting (CAB + RPV LA) administered intramuscularly monthly or every 2 months (Q2M) is the first and only complete LA regimen recommended by treatment guidelines for virologically suppressed people living with HIV-1 (PWH).¹⁻³
- The Phase 3b SOLAR study (NCT04542070) demonstrated the noninferior efficacy of switching to CAB + RPV LA Q2M vs. continuing daily oral bicitegravir/emtricitabine/tenofovir alafenamide (BIC/FTC/TAF) at Month 12, with 90% of switch participants preferring CAB + RPV LA.⁴
- Low and comparable numbers of viral load blips were experienced by participants receiving CAB + RPV LA every 4 weeks (FLAIR [NCT02938520] and ATLAS [NCT02951052]) or every 8 weeks (ATLAS-2M [NCT03299049]) across study visits in Phase 3/3b clinical studies; viral blips were not associated with virologic failure.^{5,6}
- Similar proportions of participants receiving CAB + RPV LA and daily oral therapy experienced viral blips.^{5,6}
- Here, we report HIV-1 RNA viral blips, target not detected (TND), and the impact of HIV-1 RNA viral blips on confirmed virologic failure (CVF) and viral load measurements in participants switching to CAB + RPV LA vs. continuing daily oral BIC/FTC/TAF through Month 12 in the SOLAR study.

Methods

- SOLAR (NCT04542070) is a Phase 3b, randomized (2:1), open-label, multicenter, noninferiority study assessing switching virologically suppressed adults to CAB + RPV LA Q2M vs. continuing BIC/FTC/TAF.⁴
- In consultation with their provider, participants randomized to CAB + RPV LA could select to either use an oral lead-in (OLI) for up to 4 weeks or start with injections (SWI).
- In this exploratory analysis, we analyzed participant plasma HIV-1 RNA samples from baseline through Month 12* in the SOLAR study.
- The analysis was based on the modified intention-to-treat exposed (mITT-E) population (exclusion of one trial site for non-compliance to protocol entry criteria).[†]
- HIV-1 RNA viral blips were defined as a single HIV-1 RNA value between 50 and <200 copies/mL with adjacent values <50 copies/mL.
- HIV-1 RNA values <40 copies/mL were delineated into qualitative target detected (TD) or TND.
- CVF was defined as two consecutive HIV-1 RNA values ≥200 copies/mL.
- Plasma samples were analyzed for HIV-1 RNA viral load using the Abbott RealTime HIV-1 assay, and TD/TND outcomes were provided for HIV-1 RNA <40 copies/mL.

*Participants receiving CAB + RPV LA with an OLI were assessed at Month 1/Month 2/Month 4/Month 6/Month 8/Month 10/Month 12, whereas participants receiving CAB + RPV LA SWI were assessed at Month 1/Month 3/Month 5/Month 7/Month 9/Month 11 (henceforth referred to as Month 1/Month 2/Month 4/Month 6/Month 8/Month 10/Month 12). Participants receiving BIC/FTC/TAF were assessed at Month 2/Month 4/Month 6/Month 8/Month 10/Month 12.
[†]After consultation with a blinded external expert, 11 participants were excluded from the intention-to-treat exposed population (n=681) due to critical findings related to significant and persistent non-compliance to protocol entry criteria at one study site.

Acknowledgments:

The SOLAR study was funded by ViiV Healthcare. The authors thank everyone who has contributed to the success of the SOLAR study, including all study participants and their families, and the SOLAR clinical investigators and their staff, in Australia, Austria, Belgium, Canada, France, Germany, Ireland, Italy, Japan, the Netherlands, Spain, Switzerland, the United Kingdom, and the United States. Editorial assistance was provided by Poppy Mashilo of Nucleus Global, with funding provided by ViiV Healthcare.

In the SOLAR study, HIV-1 viral blips were not associated with confirmed virologic failure, consistent with prior Phase 3 clinical study data.

Results

Study Population

- Of 670 randomized participants (mITT-E), 447 (67%) switched to CAB + RPV LA (OLI, n=173 [39%]; SWI, n=274 [61%]) and 223 (33%) continued BIC/FTC/TAF.
- Baseline characteristics were similar between arms; the median age was 37 years (range: 18–74), 18% were female (sex at birth), and the median body mass index was 25.9 kg/m² (interquartile range: 23.3–29.5).

Table 1. Participants With HIV-1 Blips and/or CVF

Outcome at Month 12 (mITT-E), n (%)	CAB + RPV LA Q2M (OLI)	CAB + RPV LA Q2M (SWI)	BIC/FTC/TAF
Participants with HIV-1 blip* at any study visit	6/173 (3)	13/274 (5)	9/223 (4)
Participants with CVF [†]	1/173 (<1)	1/274 (<1)	0/223
With HIV-1 blip*	0/6	0/13	0/9
Without HIV-1 blip*	1/167 (<1)	1/261 (<1)	0/214

*A single HIV-1 RNA value between 50 and <200 copies/mL with adjacent values <50 copies/mL.
[†]Two consecutive HIV-1 RNA values ≥200 copies/mL.
 BIC/FTC/TAF, bicitegravir/emtricitabine/tenofovir alafenamide; CAB, cabotegravir; CVF, confirmed virologic failure; LA, long-acting; mITT-E, modified intention-to-treat exposed; OLI, oral lead-in; Q2M, every 2 months; RPV, rilpivirine; SWI, starting with injection.

- The proportion of participants with HIV-1 viral blips through Month 12 was 4% (n=19/447) in the CAB + RPV LA arm (OLI and SWI) and 4% (n=9/223) in the BIC/FTC/TAF arm (Table 1).
- Two (<1%) participants in the CAB + RPV LA arm (OLI, n=1; SWI, n=1) had CVF through Month 12, neither of whom experienced a viral blip at any previous study visit.

Figure 1. Snapshot Outcomes for Participants Without Blips (mITT-E)

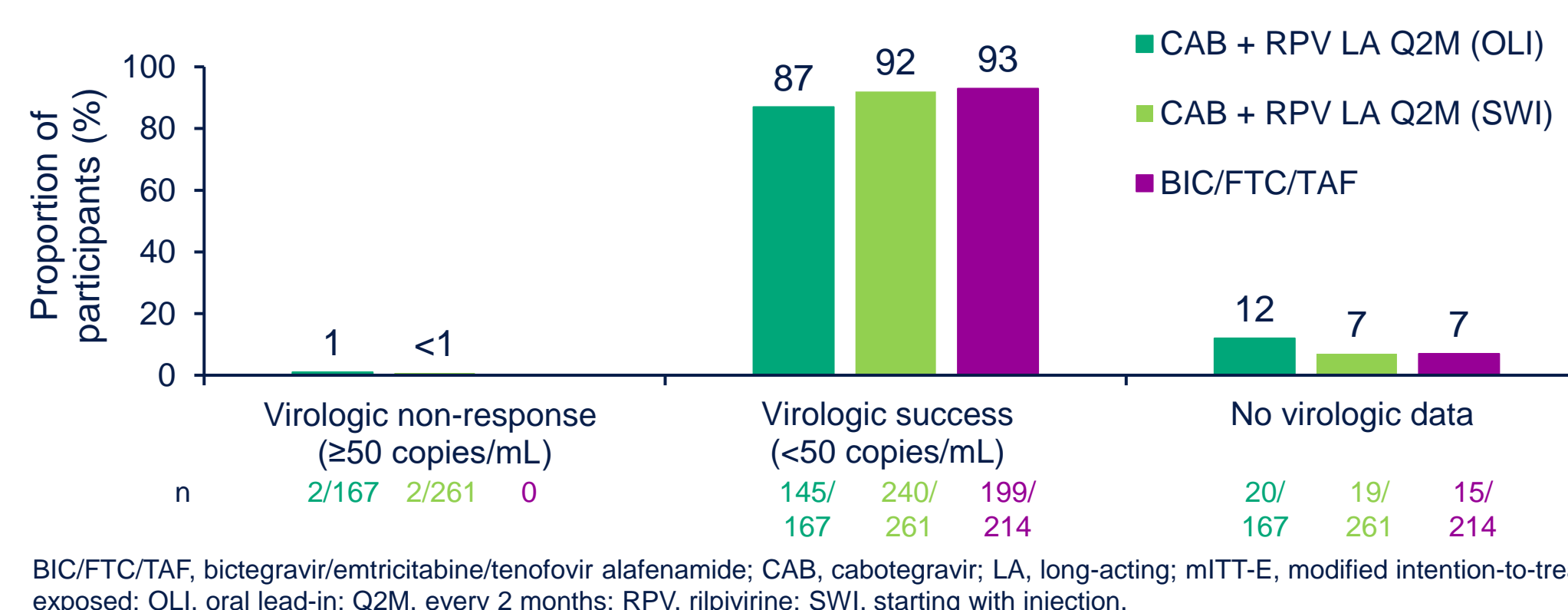
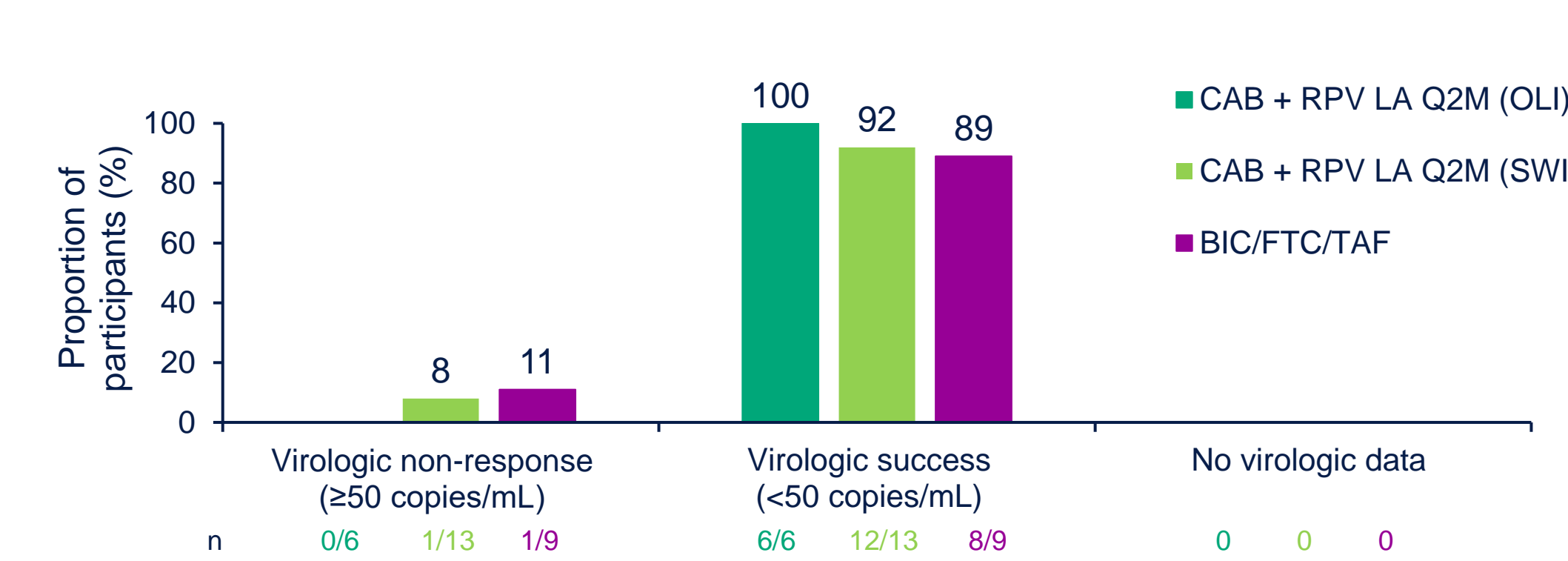


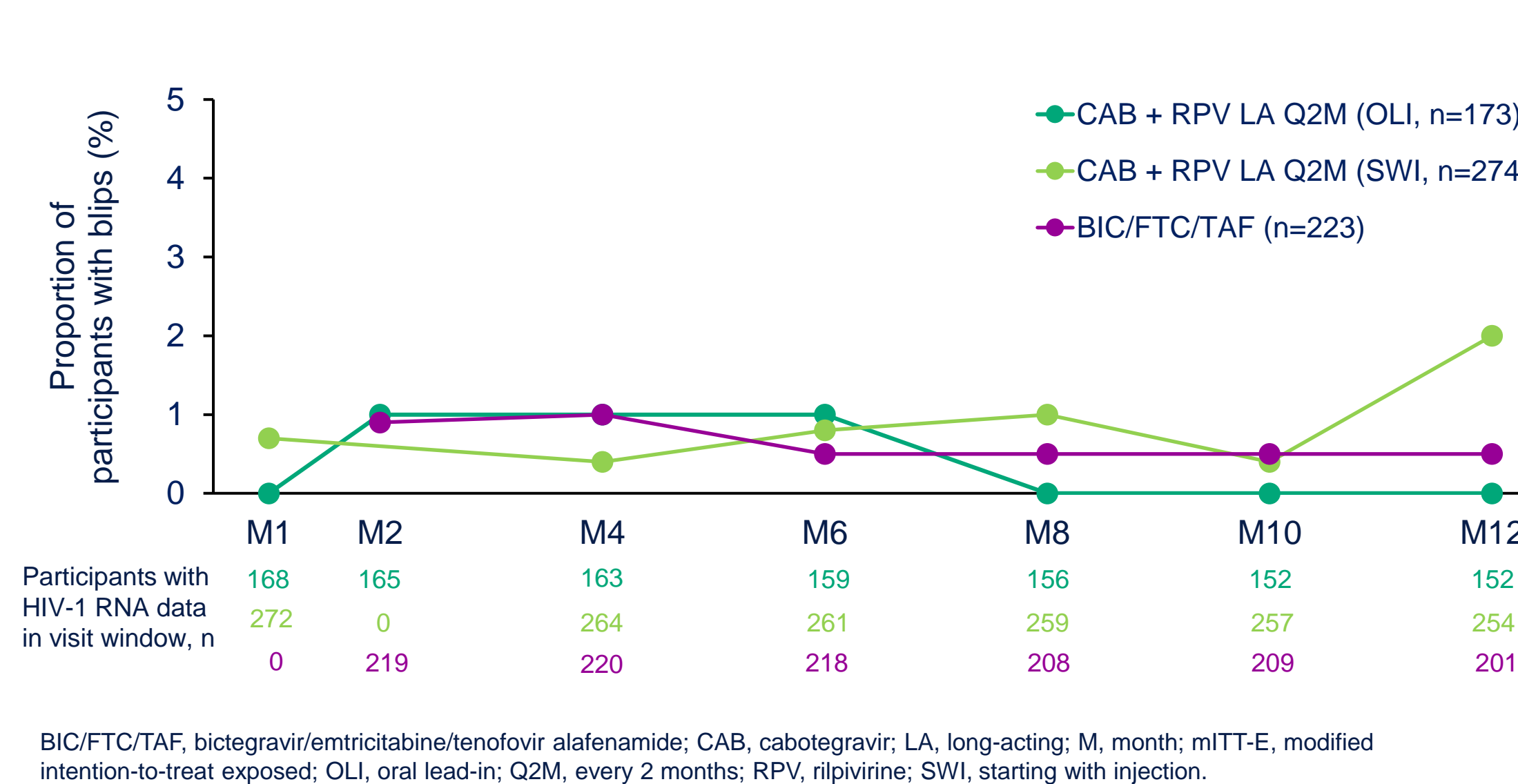
Figure 2. Snapshot Outcomes for Participants With Blips (mITT-E)



BIC/FTC/TAF, bicitegravir/emtricitabine/tenofovir alafenamide; CAB, cabotegravir; LA, long-acting; mITT-E, modified intention-to-treat exposed; OLI, oral lead-in; Q2M, every 2 months; RPV, rilpivirine; SWI, starting with injection.

- Of participants with viral blips, 5% (n=1/19) in the CAB + RPV LA arm (OLI and SWI) and 11% (n=1/9) in the BIC/FTC/TAF arm had HIV-1 RNA ≥50 copies/mL at Month 12 (Figure 2).

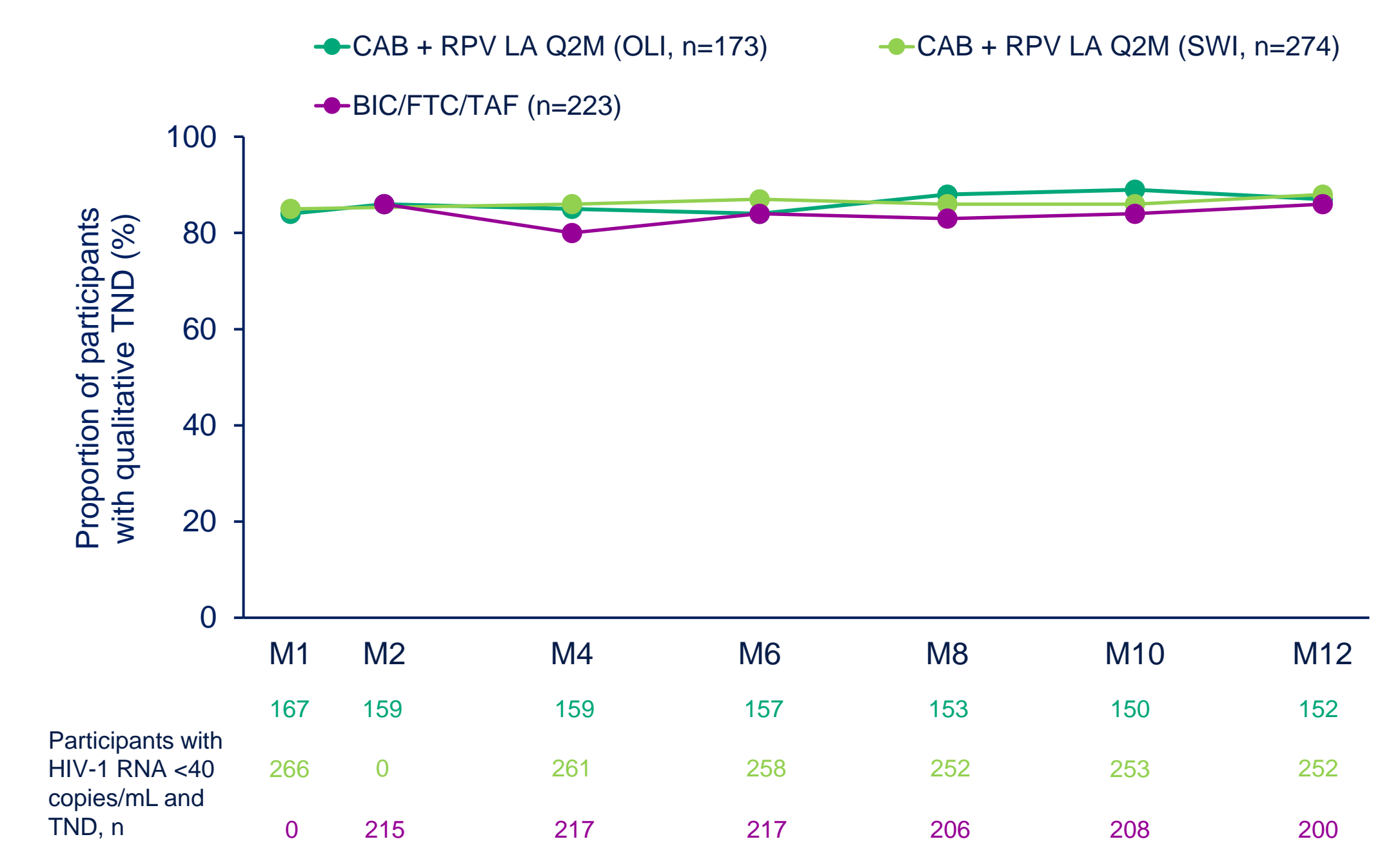
Figure 3. Proportion of Participants With Blips by Visit (mITT-E)



BIC/FTC/TAF, bicitegravir/emtricitabine/tenofovir alafenamide; CAB, cabotegravir; LA, long-acting; M, month; mITT-E, modified intention-to-treat exposed; OLI, oral lead-in; Q2M, every 2 months; RPV, rilpivirine; SWI, starting with injection.

- The proportions of participants with viral blips were comparable between treatment arms through Month 12 (Figure 3).

Figure 4. Proportions of Participants With HIV-1 RNA <40 Copies/mL and TND by Visit (mITT-E)



BIC/FTC/TAF, bicitegravir/emtricitabine/tenofovir alafenamide; CAB, cabotegravir; LA, long-acting; M, month; mITT-E, modified intention-to-treat exposed; OLI, oral lead-in; Q2M, every 2 months; RPV, rilpivirine; SWI, starting with injection; TND, target not detected.

- TND outcomes at individual study visits were similar between study arms (CAB + RPV LA OLI, 84–89%; CAB + RPV LA SWI, 85–88%; BIC/FTC/TAF, 80–86%) through Month 12 (Figure 4).

Conclusions

- The proportions of study participants with HIV-1 RNA viral blips, TND, and HIV-1 RNA <40 copies/mL were similar between CAB + RPV LA Q2M (whether OLI or SWI) and BIC/FTC/TAF through Month 12.
- HIV-1 viral blips with CAB + RPV LA were not associated with CVF, consistent with prior CAB + RPV LA Phase 3/3b clinical study data.^{5,6}
- Neither of the two (<1%) participants with CVF in the CAB + RPV LA arm experienced a viral blip at any previous study visit.
- Overall, 4% of participants in each arm experienced viral blips through Month 12, two of whom (CAB + RPV LA, n=1; BIC/FTC/TAF, n=1) had viral loads ≥50 copies/mL at Month 12.
- These data support the robustness of CAB + RPV LA for the maintenance of virologic suppression in PWH.

References:

- U.S. Department of Health and Human Services. Guidelines for the Use of Antiretroviral Agents in Adults and Adolescents with HIV. December 2023. Available from: <https://clinicalinfo.hiv.gov/en/guidelines/hiv-clinical-guidelines-adult-and-adolescent-ary/whats-new>. Accessed January 2024.
- European AIDS Clinical Society. Guidelines Version 11.1. October 2022. Available from: https://www.eacsociety.org/media/guidelines-11.1_final_09-10.pdf. Accessed January 2024.
- International Antiviral Society–USA. Antiretroviral Drugs for Treatment and Prevention of HIV Infection in Adults: 2022 Recommendations of the International Antiviral Society–USA Panel. December 2022. Available from: <https://www.iasusa.org/resources/guidelines/>. Accessed January 2024.
- Ramgopal MN, et al. *Lancet HIV*. 2023;10(9):e566–e577.
- Latham C, et al. HIV Drug Therapy Glasgow 2022 (Poster P083).
- Talarico C, et al. IDWeek 2020 (Poster 1021).