Rapid Start With Bictegravir/Emtricitabine/Tenofovir Alafenamide (B/F/TAF) as Initial Treatment in People With HIV-1 (PWH): A Systematic Literature Review (SLR) of Clinical and Patient-Reported Outcomes (PROs)

Poster P154

Jade Ghosn[1], Jeremy Chow[2], Monica Gandhi[3], Miguel Górgolas[4], Aws Al-Hayani[5], Hansel Tookes[6], Max Lee[7], Emily Kaiser[7], David Malebranche[8], Fernando Alvarez Bognar[8], Bhumi Gandhi-Patel[8], Lili Dai[9]

[1]Department of Infectious Diseases, Hôpital Bichat, Paris, France; [2]Department of Internal Medicine, University of Texas Southwestern Medical Center, Dallas, TX, USA; [3]School of Medicine, University of California, San Francisco, San Francisco, CA, USA; [4]Internal Medicine, Fundación Jiménez Díaz, Madrid, Spain; [5]Internal Medicine, Fundación Jiménez Díaz, University Hospital, Madrid, Spain; [6]Infectious Diseases, University of Miami - Miller School of Medicine, Miami, FL, USA; [7]Literature Reviews and Synthesis, Costello Medical, Boston, MA, USA; [8]Global HIV Medical Affairs, Gilead Sciences, Foster City, CA, USA; [9]Department of Infectious Diseases, Beijing Youan Hospital, Capital Medical University, Beijing, China

Conclusions

- B/F/TAF rapid start was efficacious, safe and associated with positive PROs including high treatment satisfaction, improved health-related quality of life (HRQoL) and reduced anxiety
- Newly diagnosed PWH receiving B/F/TAF rapid start or other rapid start regimens had higher engagement in care compared with PWH receiving non-rapid start regimens
- The findings of this SLR reinforce the position of B/F/TAF rapid start as a guideline-recommended initial treatment for PWH
- Future research should investigate how rapid start approaches can further facilitate sustained engagement in care and potentially reduce stigma among PWH who are newly diagnosed

Plain Language Summary

- B/F/TAF is a guideline-recommended HIV treatment taken as a single pill
- We reviewed publications on people who started B/F/TAF as soon as possible after HIV diagnosis (“rapid start”) to understand how this treatment changed their health
- B/F/TAF rapid start was very effective at lowering the amount of HIV in the blood
- B/F/TAF rapid start had few side effects that led to people stopping treatment
- More people who got rapid start treatment than people who started treatment later continued taking their medication and attended future HIV healthcare visits
- People who got B/F/TAF rapid start were satisfied with their treatment. They also had a better quality of life and less anxiety than before they started treatment

Introduction

- HIV treatment guidelines recommend rapid antiretroviral therapy (ART) initiation in eligible newly diagnosed PWH to increase ART uptake, improve engagement in care and reduce time to viral suppression, thereby improving individual health and reducing HIV transmission[1–3]
- B/F/TAF, an integrase strand transfer inhibitor-based single-tablet regimen,[4] has demonstrated efficacy and safety, and is guideline-recommended for rapid start[1,2]
- A comprehensive analysis of all published research on rapid start with B/F/TAF is lacking

Objective

- To synthesise evidence on the efficacy, safety and effect on PROs of B/F/TAF rapid start among PWH who are ART-naïve

Methods

- MEDLINE, Embase, Cochrane Database of Systematic Reviews and Cochrane Central Register of Controlled Trials databases were searched in January 2024, supplemented by searches of conference proceedings and the WHO ICTRP
- Interventional studies of B/F/TAF rapid start (i.e., initiation within 14 days of diagnosis or as defined by the study authors) in ART-naïve adult PWH, reporting efficacy outcomes (including virologic suppression or failure, viral load, engagement in care and CD4 count), safety outcomes (including adverse events [AEs] and treatment discontinuation) or PROs (including treatment satisfaction and HRQoL) were eligible
- All titles/abstracts and potentially relevant full texts were sequentially screened by two independent reviewers
- Relevant data were extracted into a pre-specified Microsoft Excel grid and results were synthesised narratively
- Study quality was assessed using York Centre for Reviews and Dissemination or Risk Of Bias In Non-randomised Studies-of Interventions checklists

Results

Included Studies

- Of 460 non-duplicate records from electronic databases and 3,434 records from supplementary searches, eight unique studies were included (**Table 1**; PRISMA flowchart presented in **Figure S1** [QR code])
- Across all studies, 725 PWH received B/F/TAF rapid start, 143 PWH received rapid start comparator regimens and 255 PWH received non-rapid start comparator regimens
- The mean or median cohort age ranged from 28–45 years and >75% of participants were male (baseline characteristics presented in **Table S1**)
- Risk of bias was overall low to moderate, with potential sources of bias largely stemming from the open-label study designs and missing data
  - Risk of bias assessment was limited by the number of included studies that have only reported results in conference abstracts to date

Table 1. Characteristics of Included Studies

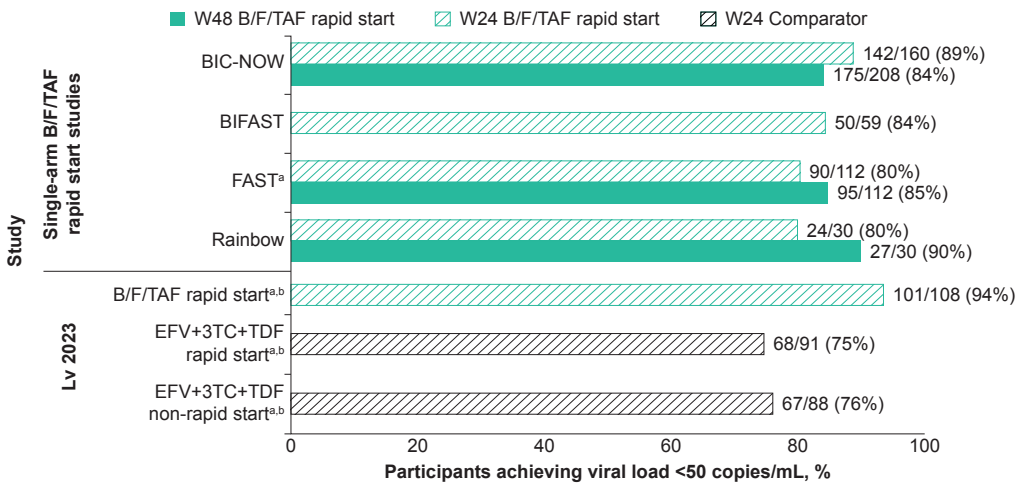
Study name	Treatment arm (sample size)	Rapid start definition	Latest available timepoint
BIC-NOW[5]	B/F/TAF rapid start (n=208)	Same day as first care visit	W48
BIFAST[6]	B/F/TAF rapid start (n=59)	Offered the same day as the first care visit, with or without lab results[a]	W24[b]
FAST[7]	B/F/TAF rapid start (n=112)	Same day as first care visit without lab results	W48
Rainbow[8]	B/F/TAF rapid start (n=30)	≤7 days of diagnosis	W48
Test&Treat[9]	B/F/TAF rapid start (n=100)	≤7 days of diagnosis without lab results	W4[b]
Benidir 2022[10]	Non-randomised: B/F/TAF rapid start (n=65) B/F/TAF non-rapid start (n=42)	≤7 days of diagnosis	Care visit 5[c]
BIC T&T[11]	Randomised: B/F/TAF rapid start (n=19) D/C/F/TAF rapid start (n=17)	≤14 days of diagnosis without lab results	W48
Lv 2023[12]	Randomised: B/F/TAF rapid start (n=132) B/F/TAF non-rapid start (n=91) EFV+3TC+TDF rapid start (n=126) EFV+3TC+TDF non-rapid start (n=122)	≤14 days of diagnosis	W24[b]

[a]The study included two subgroups based on treatment initiation with or without lab results; both were considered rapid start. [b]Interim results. [c]Median follow-up duration not reported.

Virological Suppression

- Virological suppression (HIV-1 RNA <50 copies/mL) in B/F/TAF rapid start groups was observed in ≥80% of PWH at week (W) 24 and W48 (**Figure 1**)[5–8,12]
- In Lv 2023, more PWH receiving B/F/TAF rapid start achieved virological suppression at W24 than PWH receiving EFV+3TC+TDF rapid start (p<0.001) or non-rapid start (p value NR)[12]

Figure 1. Participants Achieving Virological Suppression at W24 and W48 in ITT Analysis Sets



Data labels are n/N (%). Data reported before W24 for BIC-NOW, Rainbow, and Test&Treat were omitted from the figure because virological suppression at earlier timepoints is not representative of treatment efficacy. Benidir 2022 was omitted because virological suppression data were not reported at W24 or W48 timepoints. [a]Virological suppression was assessed by the FDA Snapshot method. [b]mITT cohort.

Safety

- Of three studies reporting the number of participants with AEs, 0–2% of B/F/TAF rapid start participants experienced grade 3/4 AEs[5,11,12] (**Table 2**)
- In Lv 2023, fewer participants receiving B/F/TAF rapid start experienced treatment-related AEs (TRAEs) vs participants receiving EFV+3TC+TDF[12]
- Four studies reported low discontinuation rates due to AEs (0–3%) for B/F/TAF rapid start[5,7,8,12]

Table 2. Summary of Safety Outcomes

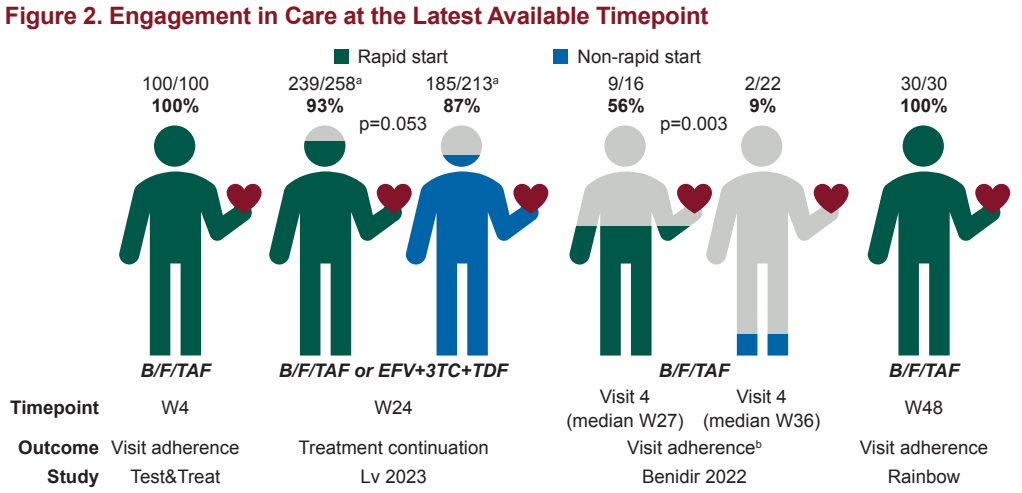
Study name	Timepoint	Treatment arms	Grade 3/4 AEs	TRAEs	Discontinuation due to AEs
BIC-NOW[5]	W48	B/F/TAF rapid start	0/208 (0%)	NR	0/208 (0%)
FAST[7]	W48	B/F/TAF rapid start	11/NR (NR)[a]	0/112[a] (0%)	3/112 (2.7%)[b]
Rainbow[8]	W48	B/F/TAF rapid start	NR	15/209 (7.2%)[c]	0/30 (0%)
BIC T&T[11]	W48	B/F/TAF rapid start	0/17 (0%)	NR	NR
		D/C/F/TAF rapid start	0/19 (0%)	NR	NR
Lv 2023[12]	W24	B/F/TAF rapid start	2/108 (1.9%)	15/108 (13.9%)	0/108 (0%)
		EFV+3TC+TDF rapid start	1/91 (1.1%)	29/91(31.9%)	6/121 (5.0%)[d]
		EFV+3TC+TDF non-rapid start	NR	NR	5/122 (4.1%)[d]

[a]Grade 3/4 or serious. [b]One participant each discontinued due to dizziness, modification of fat distribution, and dry mouth. [c]Proportion of total AEs. [d]The AEs leading to discontinuation were NR.

Engagement in Care

- Two single-arm studies of B/F/TAF rapid start reported 100% engagement in care[8,9] and two comparative studies reported higher engagement in care for rapid start regimens compared with non-rapid start regimens[10,12] (**Figure 2**)

Figure 2. Engagement in Care at the Latest Available Timepoint

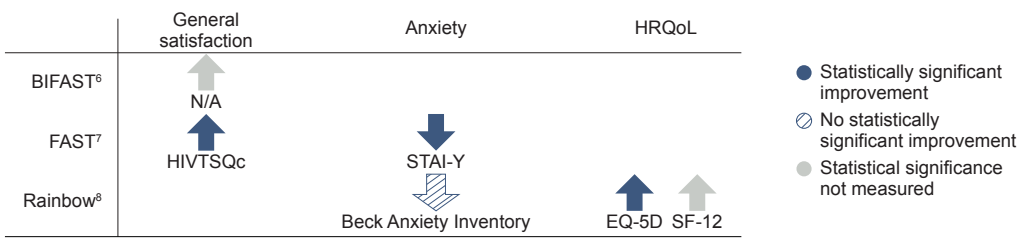


Data labels are n/N, %. [a]Calculated from reported cohort size and percent engagement in care. [b]Defined as ≥3 visits in the first 12 months of care, ≥1 visit between 9–12 months, and no gaps in care ≥6 months.

PROs

- Three studies reported improvements in PROs with B/F/TAF rapid start treatment (**Figure 3**)[6–8]
- Anxiety decreased through W48 in two studies[7,8] and HRQoL (measured by EQ-5D) significantly improved in Rainbow through W48[8]
- BIC-NOW additionally reported high treatment satisfaction at W48[5]

Figure 3. Change in General Satisfaction, Anxiety and HRQoL from Baseline



BIFAST: self-perception, satisfaction with ART and comfort with ART improved from W4 to W24 (values NR); **FAST:** mean HIVTSQc (general/clinical satisfaction and lifestyle/comfort scale, max score 30) was 25.9–26.8 (p<0.05 vs baseline, baseline values NR) at an unspecified follow-up timepoint and mean STAI-Y (anxiety scale, max 80) decreased from 52 to 37 at W48 (p<0.001); **Rainbow:** from baseline to W48, Beck Anxiety Inventory decreased from 15% to 9% of PWH with moderate-to-severe anxiety (p=0.678), mean EQ-5D (general HRQoL, max 100) increased from 57 to 75 (p=0.001) and mean SF-12 (general HRQoL, max 100) increased from 48 to 51 (p value NR).

Abbreviations: 3TC, lamivudine; AE, adverse event; ART, antiretroviral therapy; B, bictegravir; BAI, Beck Anxiety Index; BL, baseline; C, cobicistat; D, darunavir; EFV, efavirenz; F, emtricitabine; FDA, Food and Drug Administration; HIVTSQc, Human Immunodeficiency Virus Treatment Satisfaction Questionnaire; HRQoL, health-related quality of life; ITT, intent-to-treat; mITT, modified intent-to-treat; N/A, not applicable; NR, not reported; PRO, patient-reported outcome; PWH, people with HIV-1; RCT, randomised controlled trial; SAE, serious adverse event; SF-12, 12-Item Short Form Survey; SLR, systematic literature review; STAI-Y, State-Trait Anxiety Inventory-Form Y; TAF, tenofovir alafenamide; TDF, tenofovir disoproxil fumarate; TRAE, treatment-related adverse event; W, week; WHO ICTRP, World Health Organization International Clinical Trials Registry Platform.

References: 1. Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the Use of Antiretroviral Agents in Adults and Adolescents with HIV. Department of Health and Human Services. https://clinicalinfo.hiv.gov/en/guidelines/adult-and-adolescent-arv. **2.** EACS Guidelines Version 12.0; 2023. https://www.eacsociety.org/media/guidelines-12.0.pdf. **3.** WHO. The role of HIV viral suppression in improving individual health and reducing transmission. 2023. https://iris.who.int/bitstream/handle/10665/360860/9789240055179-eng.pdf. **4.** BIKTARVY® FDA Label. https://www.accessdata.fda.gov/drugsatfda_docs/label/2018/210251s000lbl.pdf. **5.** Hidalgo-Tenorio C, et al. Bictegravir/Emtricitavine/Tenofovir alafenamide as first-line treatment in naïve HIV patients in a rapid-initiation model of care: BIC-NOW clinical trial [Abstract 696]. Presented at: European AIDS Conference 2023. **6.** Al-Hayani AWM, et al. Starting antiretroviral therapy (ART) at the first HIV-specialist appointment with or without baseline laboratory data with BIC/FTC/TAF (The BIFAST study) [Abstract EPB153]. Presented at: International AIDS Conference 2022. **7.**Bachelard A, et al. Same-day initiation of bictegravir/emtricitabine/tenofovir alafenamide: Week 48 results of the FAST study—IMEA 055. *J Antimicrob Chemo* 2023;78(3):769–778. **8.** Camici M, et al. Rapid ART initiation with bictegravir/emtricitabine/tenofovir alafenamide in individuals presenting with advanced HIV disease (Rainbow study). *Int J Antimicrob Agents* 2024;63(1):107049. **9.** Ugarte A, et al. Rapid initiation of antiretroviral therapy (ART) with bictegravir/emtricitabine/tenofovir alafenamide (BIC/FTC/TAF) in a tertiary hospital in Barcelona, Spain: a prospective clinical trial [Abstract P076]. Presented at: HIV Glasgow 2022. **10.** Benidir B, et al. Impact of rapid initiation of antiretroviral therapy on retention in care in the Southern United States [Abstract 1272]. Presented at: IDWeek, 2022. **11.** Whitlock G, et al. A randomised control trial of BIC/F/TAF vs DRV/c/F/TAF in context of HIV test-and-treat [Abstract 703]. Presented at: European AIDS Conference 2023. **12.** Lv S, et al. Rapid ART initiation using BIC/FTC/TAF and TDF+3TC+EFV in people with HIV in China [CROI Abstract 521]. In Special Issue: Abstracts From CROI 2023 Conference on Retroviruses and Opportunistic Infections. *Top Antivir Med.* 2023;31(2):483.

Acknowledgements: Graphic design support was provided Jon Green (Costello Medical, USA), funded by Gilead.

Disclosures: JG: Honoraria from Gilead Sciences, Inc. and ViiV Healthcare. **JC:** Received grants from Gilead Sciences, Inc.. **MGa:** Nothing to disclose. **MGó:** Advisory honoraria from Gilead Sciences, Inc., Johnson & Johnson, and ViiV Healthcare. **AAH**: Received grants and personal fees from ViiV Healthcare; received personal fees from Gilead Sciences, Inc., Janssen, and Merck. **HT:** Received grants from Gilead Sciences, Inc. and ViiV Healthcare. **ML, EK:** Employees of Costello Medical, which received funding from Gilead Sciences, Inc. for conducting this work. **DM, FAB, BGP:** Employees and shareholders of Gilead Sciences, Inc. **LD:** Nothing to disclose.