Poster

Starting or Switching to Bictegravir/Emtricitabine/Tenofovir Alafenamide (B/F/TAF) in Clinical Practice:Pooled 12-month Results from the Global BICStaR Study

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Background

- The **Bic**tegravir **S**ingle **Ta**blet **R**egimen (BICSTaR) study[1] is an ongoing, multi-country, observational cohort study planned to enrol at least 1400 PLWH initiating B/F/TAF and followed for 2 years
- We evaluated the effectiveness, safety, and tolerability of B/F/TAF in routine clinical practice in ART-naïve (TN) and ART-experienced (TE) PLWH
- We present 12-month data from sites in Germany, Canada, France, and the Netherlands

Methods

- This analysis includes pooled data from 513 participants who had a baseline and Month 12 (M12) visit or who discontinued the study at the time of data cut-off (March 2020)
- M12 study outcomes included:
  - HIV-1 RNA <50 cp/mL using a Missing=Excluded (M=E) approach
    - Missing data were excluded, such that only HIV-1 RNA data collected within the M12 time window, while on study treatment, were analysed
  - Treatment persistence (% participants still on B/F/TAF)
  - Drug-related adverse events, weight, and body mass index (BMI) changes
- Multivariate logistic regression analysis of risk factors associated with B/F/TAF effectiveness and relative weight increase of >5% from baseline at M12 were explored

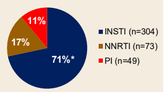
ART, antiretroviral treatment; B/F/TAF, bictegravir/emtricitabine/tenofovir alafenamide; cp, copies; PLWH, people living with HIV

Results

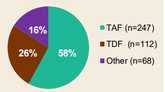
Baseline Characteristics

		TN, n=84	TE, n=429
Demographics	Male, n (%)	76 (91)	392 (91)
	Age, years, median (Q1–Q3)	38 (29–48)	49 (40–56)
	Age ≥50 years, n (%)	20 (24)	209 (49)
	White, n (%)	71 (85)	387 (90)
Ongoing comorbidities	None, n (%)	41 (49)	108 (25)
	1–2, n (%)	25 (30)	168 (39)
	≥3, n (%)	18 (21)	153 (36)
	Neuropsychiatric disordera, n (%)	16 (19)	122 (28)
	Hyperlipidaemia, n (%)	7 (8)	87 (20)
	Hypertension, n (%)	5 (6)	87 (20)
HIV-related characteristics	HIV-1 RNA, $\log_{10}$ cp/mL, median (Q1, Q3)	4.77 (3.94, 5.18)	1.59 (1.28, 1.59)
	<50 cp/mL, n (%)	0 (0)	362/393 (92)
	>100,000 cp/mL, n (%)	30/82 (37)	2/393 (1)
	CD4 countb, cells/µL, median (Q1, Q3)	427 (244, 581)	668 (455, 877)
	CD4 <200 cells/µL, %	21	4
	CD4 <350 cells/µL, %	38	14
	CD4/CD8 ratio, median (Q1, Q3)	0.4 (0.3, 0.6)	0.8 (0.6, 1.2)
	≥1 major mutationc, n (%)	7 (9)	36 (9)
	PI / NNRTI / NRTI / INSTI, n (%)	2 (2) / 5 (6) / 1 (1) / 0	12 (3) / 20 (5) / 16 (4) / 1 (0.3)

Prior ART Regimens (n=427)



*DTG, 34%; EVG, 24%; RAL, 14%; 1 participant without third agent

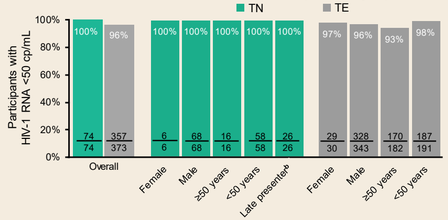


[a]Most common neuropsychiatric disorders at baseline were insomnia 2.9%, depression 1.6% and anxiety 1.4%; [b]Sample size of 78 for TN and 382 for TE; [c]A participant could have >1 mutation/substitution
ART, antiretroviral treatment; cp, copies; DTG, dolutegravir; EVG, elvitegravir; INSTI, integrase strand transfer inhibitor; NNRTI, non-nucleoside reverse transcriptase inhibitor; NRTI, nucleo[s/t]ide reverse transcriptase inhibitor; PI, protease inhibitor; Q, quartile; RAL, raltegravir; TAF, tenofovir alafenamide; TDF, tenofovir disoproxil fumarate; TE, treatment experienced; TN, treatment naïve

Results

Effectiveness and resistance at M12

Effectiveness of B/F/TAF at M12 (M=E analysis)[a]



Virologic Outcomes in Participants with Evidence of Pre-existing GenotypeResistance-associated Mutations at Baseline

Baseline mutation	N (%)	TN or TE	Viraemic at BL, (%)	HIV-1 RNA <50 cp/mL at M12, n (%)
M184V/I*	8 (1.6)	TE	0 (0)	8 (100)
K65R	1 (0.2)	TN	1 (100)	1 (100)

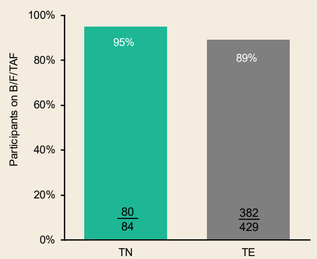
*Alone or in combination with ≥1 TAMs; TAMs included M41L (n=1) and D67N (n=2)

- HIV-1 RNA was <200 cp/ml in 370/373 (99%) TE participantsc
- Median CD4 change (Q1, Q3) at M12 in TN and TE were +242 cells/µL (119, 453) and +22 cells/µL (−71, 11), respectively
- Median CD4/CD8 ratio changes (Q1, Q3) at M12 in TN and TE were +0.3 (0.2, 0.4) and +0.03 (−0.13, 0.12), respectively
- Having a neuropsychiatric disorder at baseline (n=140) was associated with not achieving viral suppression at M12 (VL <50 cp/mL); adjusted OR 0.26 (95% CI 0.09–0.73; p=0.01)d
- No major resistance substitutions to the components of B/F/TAF emerged

[a]Missing=Excluded analysis. Denominator reflects number of participants with available HIV-1 RNA data analysed within the time window; [b]Defined as CD4 <350 cells/µL and/or ≥1 AIDS-defining event at baseline; [c]One participant with suboptimal adherence had a viral load of 4100 cp/mL at M12 (no major resistance mutations reported). VL was 240, 18,000, and 3700 cp/mL at BL, M3, and M6, respectively. Two participants had VL < 250c/ml; dMultivariate logistic regression model included the following covariates: gender, age, baseline CDC stage, ongoing neuropsychiatric disorders, ongoing metabolic syndrome and number of comorbidities/co-infections per patient ongoing at B/F/TAF initiation.
B/F/TAF, bictegravir/emtricitabine/tenofovir alafenamide; BL, baseline; CDC, Centers for Disease Control; CI, confidence interval; cp, copies; M, Month; OR, odds ratio; Q, quartile; TAM, thymidine analogue mutation; TE, treatment experienced; TN, treatment naïve; VL, viral load

Persistence and Reasons for B/F/TAF Discontinuation at M12

Persistence of B/F/TAF at M12



Discontinuations n (%)	TN n=84	TE n=429
Any discontinuations	4 (4.7)	47 (11.0)
Pregnancy	0	1 (0.2)
Participant decision	0	3 (0.7)
Deatha	0	3 (0.7)
Lack of efficacy	0	3 (0.7)
Investigator's discretion	0	4 (0.9)
AE[b]	4 (4.7)	33 (7.7)

aDeaths were unrelated to B/F/TAF and included sepsis (n=1), brain metastasis (n=1), and unknown reason (n=1); bMost common AEs that led to discontinuation were fatigue (TN, n=1; TE, n=5), weight increase (TN, n=1; TE, n=5), and depression (TE, n=4)

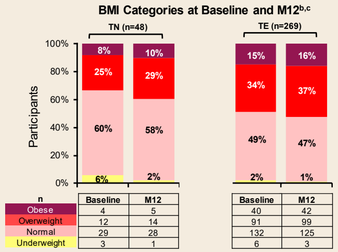
AE, adverse event; B/F/TAF, bictegravir/emtricitabine/tenofovir alafenamide; M, Month; TE, treatment experienced; TN, treatment naïve

Safety at M12

n (%)	All (n=513)	TN (n=84)	TE (n=429)
Any DRAE	76 (15)	12 (14)	64 (15)
Nausea	1 (1.4)	1 (1.2)	6 (1.4)
Diarrhoea	6 (1.2)	0	6 (1.4)
Depression	8 (1.6)	1 (1.2)	7 (1.6)
Weight increased	14 (2.7)	2 (2)	12 (3)
Fatigue	8 (1.6)	1 (1.2)	7 (1.6)
DRAE discontinuations[a]	32 (6.2)	3 (3.6)	29 (6.8)

- Serious DRAEs were rare (0.4%; n=2 cases of depression in TE participants)
- Both led to B/F/TAF discontinuation (1 had prior history of depression)
- No discontinuations due to renal, hepatic or bone DRAEs

BMI Categories at Baseline and M12[b,c]



n	TN Baseline	TN M12	TE Baseline	TE M12
Obese	4	5	40	42
Overweight	12	14	91	99
Normal	29	28	132	125
Underweight	3	1	6	3

- Median (Q1–Q3) BMI change at M12: TN +0.8 kg/m^2 (0.1 to 1.9);TE +0.3 kg/m2 (−0.3 to 1.0)
- Median (Q1–Q3) weight change at M12: TN +2.5 kg (0.5 to 6.3);TE +0.9 kg (−1.0 to 3.a0)
- In a multivariate analysis, no risk factors were identified that were associated with a relative weight increase of >5% from baseline at M12d

[a]Most common DRAEs that led to discontinuation were fatigue (TN, n=1; TE, n=5), weight increase (TN, n=1; TE, n=5), and depression (TE, n=4); [b]Subset of participants with baseline and M12 BMI data were included; [c]BMI category according to the World Health Organization (underweight <18.5 kg/m2; normal, 18.5–24.9 kg/m2; overweight, 25.0–29.9 kg/m2; obese ≥30 kg/m2); dMultivariate logistic regression model including covariates gender, age, baseline BMI, comorbidities and regimen prior to B/F/TAF initiation
B/F/TAF, bictegravir/emtricitabine/tenofovir alafenamide; BMI, body mass index; DRAE, drug-related adverse event; M, Month; Q, quartile; TE, treatment experienced; TN, treatment naïve

Conclusions

- B/F/TAF use in this real-world clinical cohort was associated with high prevalence of effectiveness in PLWH regardless of gender, older age, or low CD4 count
- B/F/TAF showed high persistence and was well tolerated, with no discontinuations due to drug-related renal, hepatic or bone events
- A few participants with pre-existing NRTI (M184V/I) resistance maintained virologic suppression when switched to B/F/TAF
- No resistance-associated mutations emerged to the components of B/F/TAF
- These data support the real-world effectiveness, safety, and persistence of B/F/TAF in treatment-naïve and treatment-experienced PLWH who were characterised by a high prevalence of comorbidities at baseline

B/F/TAF, bictegravir/emtricitabine/tenofovir alafenamide; NRTI, nucleo[s/t]ide reverse transcriptase inhibitor; PLWH, people living with HIV

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