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ORAL COMMUNICATION

Long-term effectiveness of oral ART

OC 52 Long-term effectiveness of bictegravir-emtricitabine-tenofovir alafenamide (B/F/TAF) as first-line therapy and as switch strategy in virologically suppressed persons with HIV up to 192-weeks: data from the ICONA-BIC Study

Authors
A. d'Arminio Monforte[1], A. Tavelli[1,2], R. Gagliardini[3], S. Rusconi[4], L. Taramasso[5], A. Cervo[6], R. Marocco[7], V. Mazzotta[3], A. Costantini[8], G. Burastero[9], A. Giacomelli[10], A. Saracino[11], S. Nozza[12], S. Lo Caputo[13], A. Antinori[3] on behalf of Icona Foundation Study Group

Affiliation
[1]Icona Foundation, Milan, Italy, [2]National PhD Programme in One Health approaches to infectious diseases and life science research, Department of Public Health, Experimental and Forensic Medicine, University of Pavia, Pavia, Italy, [3]Clinical Infectious Diseases Department, National Institute for Infectious Diseases Lazzaro Spallanzani IRCCS, Rome, Italy, [4]Infectious Diseases Unit, Ospedale Civile di Legnano, ASST Ovest Milanese, and DIBIC, Università degli Studi di Milano, Milan, Italy, [5]Infectious Disease Clinic, IRCCS Ospedale Policlinico San Martino, Genova, Italy, [6]Department of Infectious Diseases, Azienda Ospedaliero-Universitaria di Modena, Policlinico di Modena, University of Modena and Reggio Emilia, Modena, Italy, [7]Department of Public Health and Infectious Disease, S. Maria Goretti Hospital, Sapienza University of Rome, Latina, Italy, [8]Clinical Immunology Unit, Azienda Ospedaliero Universitaria delle Marche - Università Politecnica delle Marche, Ancona, Italy, [9]Department of Infectious Diseases, ASST Grande Ospedale Metropolitano Niguarda, Milan, Italy, [10]III Infectious Diseases Unit, ASST Fatebenefratelli-Sacco, DIBIC Luigi Sacco, Università degli Studi di Milano, Milan, Italy, [11]Clinic of Infectious Diseases, Department of Precision and Regenerative Medicine and Ionian Area, Polyclinic of Bari, University Hospital Polyclinic, University of Bari, Bari, Italy, [12]Department of Infectious Diseases, IRCCS San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Milan, Italy, [13]Clinic of Infectious Diseases, Department of Clinical and Surgical Sciences, University of Foggia, Foggia, Italy

ABSTRACT

Background: We aim to confirm in a real-life setting the clinical trial data of the long-term effectiveness of B/F/TAF, both as first-line therapy and as a switch strategy, in virologically suppressed persons with HIV (PWH) up to 192-weeks.

Materials and Methods: Observational cohort study of PWH enrolled in ICONA who started B/F/TAF as initial therapy or as switching regimen while virologically suppressed from June 2016 to August 2023.

The primary endpoint was time to treatment failure (TF): discontinuation for toxicity/intolerance or virological failure (VF, 2 HIV-RNA>200 copies/ml or 1 >1000 copies/ml followed by ART change, >6 months from starting for naive). Secondary endpoints: i) VF as previously defined and ii) discontinuation for toxicity/intolerance (TDT). Cumulative probabilities of the three endpoints were calculated by Kaplan-Meier curves at 144 weeks (and 192 weeks for ART experienced).

Results: 929 ART-naive and 1653 ART-experienced PWH initiated B/F/TAF. Baseline characteristics are shown in Table 1.

ART-naïve group: over a median follow-up of 141 weeks (IQR 94-189), 54 (5.8%) ART-naïve PWH experienced TF, 17 VF and 37 discontinuations for toxicity/intolerance. The cumulative probability of TF at 144 weeks was 6.7% (95%CI 5.0-8.8) [Figure 1A]. The 144-week probability of VF was 2.7% (1.6-4.4): in detail, 9 of 17 VF did not reach VS after 6 months, while 8/17 had a viral rebound after the first suppression. The median HIV-RNA at VF were 2,287 and 958 copies/ml. Only 4 changed B/F/TAF after VF, 6 out of the 9 PWH with virological follow-up after VF reached HIV-RNA<50 while remaining on B/F/TAF. The 144-week probability of TDT was instead 4.3% (3-6.2). The reasons for TDT are shown in Table 2A.

ART-experienced virologically suppressed group: Over a median follow-up of 216 weeks (IQR 156, 244), 76 (4.6%) out of 1653 switching PWH experienced TF (11 VF and 65 TDT); The cumulative probability of TF at 144- and 192-weeks were 4.0% (4.2-6.7) and 5.3% (4.2-6.7), respectively [Figure 1B]. The probabilities of VF were 0.7% (0.4-1.4) at 144- and 1.0% (0.5-1.8) at 192 weeks. Median HIV-RNA values at VF were 3400 and 1539 copies/ml, respectively. Only 4 PWH changed B/F/TAF after VF, 6/6 PWH with virological follow-up after VF while remaining on B/F/TAF reached HIV-RNA<50 copies/ml. Finally, the 144-week and 192-week probability of TDT were 3.4% (2.6-4.4) and 4.4% (3.4%-5.7%), respectively. The reasons for TDT are shown in Table 2B.

Conclusion: Overall, we in the clinical real-life setting B/F/TAF is well tolerated and virologically effective in ART-naïve and experienced PWH in the long term up to 192-weeks. Discontinuation for toxicity remains a rare event both in naïve (4.3% at 144 weeks) and experienced (3.4% and 4.4% at 144 and 192 weeks). VF was low both in naïve and experienced PWH, given the subsequent VS without ART change, we can hypothesize that in those PWH, poor adherence was the cause of VF.

Table 1. Characteristics of PWH initiation B/F/TAF

	ART-naive (N=929, 36%)	ART-experienced (N=1653, 64%)
Italian, n(%)	668 (71.9%)	1,390 (84.1%)
Ethnicity, Caucasian, n(%)	744 (80.1%)	1,462 (88.4%)
Sex at birth, Female, n(%)	165 (17.8%)	315 (19.1%)
Age, years, median (IQR)	42 [32 52]	48 [39 56]
Age, >50 years, n(%)	288 (31.0%)	755 (45.7%)
Mode of HIV Transmission, n(%)		
Heterosexual	388 (41.8%)	642 (38.8%)
PWID	53 (5.7%)	134 (8.1%)
MSM	405 (43.6%)	785 (47.5%)
Other/Unknown	83 (8.9)	92 (5.5%)
Acute/Recent HIV infection, n(%)	96 (10.3%)	191 (11.6%)
AIDS, n(%)	130 (14.0%)	299 (18.1%)
CD4 B/F/TAF start, cells/mm^3, median (IQR)	292 [96 483]	705 [505 928]
<200 CD4/mm^3, n(%)	362 (39.0%)	40 (2.4%)
<350 CD4/mm^3, n(%)	533 (57.4%)	193 (11.7%)
HIV-RNA B/F/TAF start, log10 cps/mL, median (IQR)	5.1 [4.5 5.7]	1.2 [0.0 1.3]
>100.000 copies/mL	488 (52.5%)	0 (0.0%)
HCVAb positive status, n(%)	45 (5.3%)	173 (10.8%)
HBsAg positive status, n(%)	22 (2.8%)	72 (4.6%)
BMI, kg/m2, median (IQR)	23.1 [21.0 25.3]	24.2 [22.2 26.9]
CVD diagnosis, n(%)	6 (0.6%)	37 (2.2%)
NADM diagnosis, n(%)	17 (1.8%)	65 (3.9%)
FU after B/F/TAF start, weeks, median (IQR)	141 [94 189]	216 [156 244]
At least 96-weeks follow-up, n(%)	687 (73.9%)	1493 (90.3%)
At least 144-weeks follow-up, n(%)	454 (48.9%)	1300 (78.6%)
Previous ART-regimen	.	
INSTI-based	.	1342 (81.2%)
NNRTI-based	.	150 (9.1%)
PI-based	.	41 (2.5%)
Other	.	120 (7.3%)
N. Previous ART-lines	.	2 [2 4]
Years from first VS, median (IQR)	.	4.6 [2.7 7.8]

Abbreviations: PWID: People who inject drugs; MSM: Male sex with male; CVD: Cardiovascular diseases; NADM: Non-AIDS defining Maligancies; FU: Follow-up; VS: Virological supplession

Figure 1. Kaplan–Meier curves showing probabilities of TF at among naive (A) and virologically suppressed experienced (B) PWH initiating B/F/TAF

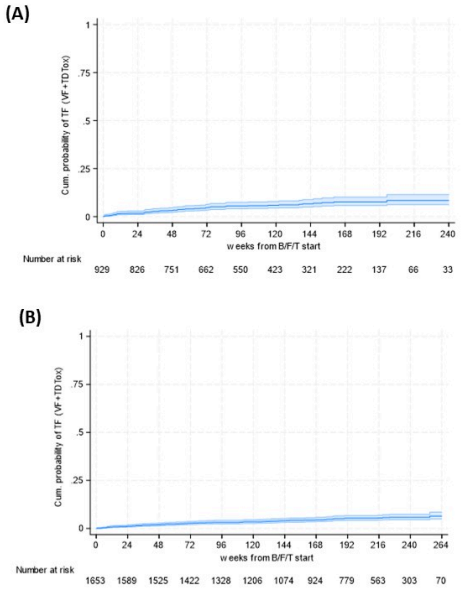

Table 2. Reasons for B/F/TAF discontinuation for toxicity in ART-naive (A) and virologically suppressed ART-experienced (B)

(A)	n	% over tot. n. PWH
ART- Naive	**37**	**4.0%**
Other toxicities/Clinical contraindications	**2**	0.2%
Renal toxicity	**3**	0.3%
Arthro-myalgia	**1**	0.1%
GI intolerance	**4**	0.4%
Allergic reactions	**4**	0.4%
Heamatological toxicity	**1**	0.1%
Hepatic Toxicity	**1**	0.1%
Lipid Metabolism toxicity	**4**	0.4%
Weight Gain	**6**	0.6%
Skin	**1**	0.1%
Osteopenia	**1**	0.1%
NPAEs	**9**	1.0%
Sleep Disoreders	*6*	*0.6%*
Amnesia	*1*	*0.1%*
Daze	*1*	*0.1%*
Suicidal Ideation	*1*	*0.1%*

(B)	n	% over tot. n. PWH
ART-Experienced	**65**	**3.9%**
Renal Toxicity	**8**	0.5%
Osteopenia/Osteoporosis	**2**	0.1%
GI intolerance	**8**	0.5%
Allergic reactions	**3**	0.2%
Hepatic Toxicity	**1**	0.1%
Lipid Metabolism toxicity	**14**	0.8%
Weight Gain	**9**	0.5%
Arthro-myalgia	**2**	0.1%
Loss of libido	**1**	0.1%
Unknown	**2**	0.1%
NPAEs	**15**	0.9%
Insomnia/Sleep Disorders	*11*	*0.7%*
Panic Attack/Anxiety/Depression	*3*	*0.2%*
Headache	*1*	*0.1%*

Abbreviations: GI: Gastrointestinal; NPAEs: Neuropsychiatric adverse events