Dettaglio abstract

N. pgm: OP 124

Title: Real-world effectiveness of switching to bictegravir/emtricitabine/tenofovir alafenamide (BIC/FTC/TAF) in women living with HIV: subgroup analysis from ICONA-BIC

Presentation type: Oral Poster

Session/Topic
Open questions about ART efficacy

Authors: A. d'Arminio Monforte[1], A. Tavelli[2], A. Cingolani[3], C. Mussini[4], S. Piconi[5], A. Calcagno[6], G. Orofino[7], S. Cicalini[8], A. Castagna[9], F. Ceccherini Silberstein[10], A. Gori[11], A. Antinori[8]

Affiliation: [1]Department of Health Sciences, Clinic of Infectious Diseases, 'San Paolo' Hospital, University of Milan, Milan, Italy, [2]Icona Foundation, Milan, Italy, [3]Infectious Diseases Unit, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Department of Safety and Bioethics, Catholic University of the Sacred Heart, Rome, Italy, [4]Infectious and Tropical Diseases Unit, Azienda Ospedaliero Universitaria di Modena, University of Modena and Reggio Emilia, Modena, Italy, [5]Infectious Diseases, ASST Lecco, Lecco, Italy, [6]Unit of Infectious Diseases, Ospedale Amedeo di Savoia, Department of Medical Sciences, University of Turin, Turin, Italy, [7]"Divisione A" Unit of Infectious Diseases, Ospedale Amedeo di Savoia, ASL Città di Torino, Italy, [8]Clinical Department, HIV/AIDS Unit, National Institute for Infectious Diseases Lazzaro Spallanzani IRCCS, Roma, Italy, [9]Infectious Diseases Unit, IRCCS San Raffaele Scientific Institute, Vita-Salute San Raffaele University, Milan, Italy, [10]Department of Experimental Medicine, University of Rome Tor Vergata, Rome, Italy, [11]Clinic of Infectious Diseases, IRCCS Ca' Granda Ospedale Maggiore Policlinico, Department of Pathophysiology and Transplantation, University of Milan, Milan, Italy

Abstract
Background: Sex-related factors can influence ART outcomes and the overall wellbeing of people living with HIV (PLWH). Women living with HIV (WLWH) are often under-represented in RCT and research studies. BIC/FTC/TAF is a widely used INSTI-based 3-drug regimen in WLWH. The aim of the present sub-analysis from ICONA-BIC study is to evaluate effectiveness of switching to BIC/FTC/TAF in virologically suppressed PLWH, focusing on ART-experienced women compared to men.
Methods: Observational study of PLWH enrolled in the Icona cohort switching to BIC/FTC/TAF while virologically suppressed (baseline). Study period: Apr2018-Dec2021. Exposure of interest: sex at birth (female vs male). Primary endpoint was treatment failure (TF) defined as treatment discontinuation (TD) for any reason or virological failure (VF, 2 consecutive HIV-RNA > 200 copies/ml or 1 HIV-RNA >1000 copies/mL). Four secondary endpoints were evaluated: TF excluding pregnancy as event (TFEP), TD regardless of the reason, TD excluding pregnancy (TDEP) and VF. Statistical analyses included descriptive statistics, and standard survival analysis. Cox-regression models were used to investigate the risk of primary and secondary endpoints in ART-experienced women compared to men.
Results: 1237 subjects have been included. 229 were women (18.5%), 84% Italian, median age 47 years (39-55), 50% MSM, 37% hetero-, median CD4 702 /mm3 (505-928), 86% previously on other 3-drug INSTI. After a median follow-up of 1.36 years (IQR 0.97-1.67) from switch, 112 PLWH (30 W and 82 M) had TF (9.1%) (14 VF and 98 TD). Overall, the KM-estimated probability of TF was 4.6% (95%CI 3.5-6.1) at 1-year, 7.5% (95%CI 4.7-12.0) in women and 4.0% (2.9-5.5) in men (Figure 1A, log-rank p=0.01). After fitting a Cox regression model adjusted for confounders, women showed 2-times higher risk of TF (AOR 2.01; 95%CI 1.17-3.44) (Table1). In the adjusted Cox model, after excluding the 6 pregnancies as events, women were no longer at higher risk of TF (AOR 1.69, 95%CI 0.93-2.90) (Table1).
100/1237 PLWH (26 W and 74 M) had a TD (8.1%): The 1-yr probability of TD was 4.1% (3.1-5.5): 6.6% (3.9-10.9) and 3.6% (2.5-5.0) respectively for women and men (log-rank p=0.03; Fig 1C). The independent risk of TD was higher in women (AOR 1.94, 95%CI 1.09-3.46), but again not after excluding TD due to pregnancy (AOR 1.53, 95%CI 0.82-2.82)(Table1). Details of reasons for TD are reported in Table 3. In the ITT analysis, VF occurred in only 15 PLWH: overall the 1-year probability of VF was of 0.7%

(0.3-1.4), too few cases to infer in sex-related differences (Fig 1D).
Conclusions: In this large real-world study of ART-experienced PLWH switching to BIC/FTC/TAF, the regimen showedhigh effectiveness (4.6% TF and 0.7% VF by 1-year). The higher risk of TF and TD in females compared to males is related to discontinuation due to pregnancy. and after excluding these the success of BIC/FTC/TAF is similar in men and women. First case reports of BIC/FTC/TAF use in pregnancy are promising but more comprehensive studies need to be completed in pregnant women.

Table 1. Hazard Ratio (HR) and Adjusted Hazard ratio (AHR) of the different endpoints in women vs. men

	HR	95%CI	p	AHR*	95%CI	p
Treatment Failure						
Women (vs Men)	1.72	1.13-2.62	0.011	2.01	1.17-3.44	0.01 1
Treatment Failure excluding pregnancy						
Women (vs Men)	1.38	0.87-2.18	0.164	1.63	0.93-2.90	0.08 9
Treatment discontinuation						
Women (vs Men)	1.63	1.04-2.56	0.031	1.94	1.09-3.46	0.02 3
Treatment discontinuation excluding pregnancy						
Women (vs Men)	1.26	0.77-2.07	0.359	1.53	0.83-2.82	0.17 6

*Adjusted for nationality and mode of HIV transmission

Fig1. KM curves of (A) TF, (B) TFEP, (C) TD according to sex and KM of VF200 (D)

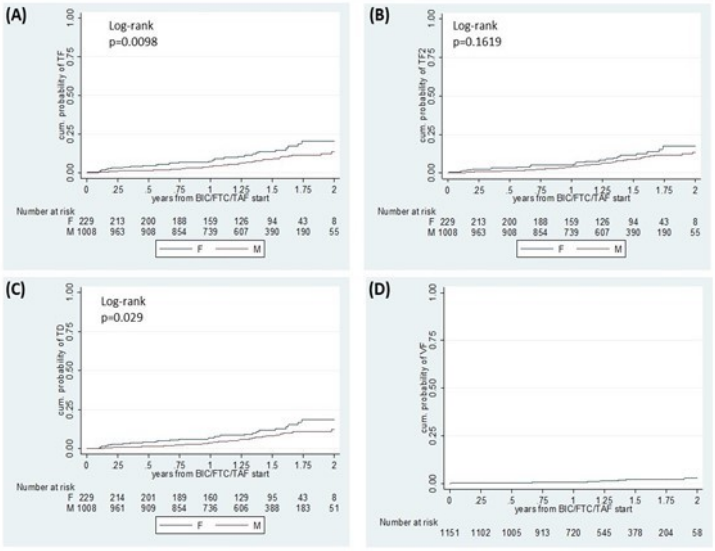

Table 2. Reasons for treatment discontinuation in ART-experienced group

	n	percent (over n TD)	percent (over tot subjects)
FAILURE	**3**	**3.0%**	**0.2%**
Virological Failure	3		
OTHER	**23**	**23.0%**	**1.9%**
Pregnancy	6		
Enrollment in RCT	7		
Unknown	7		
Other	3		
PATIENT'S DECISION	**3**	**3.0%**	**0.2%**
SIMPLIFICATION	**41**	**41.0%**	**3.3%**
TOXICITY/INTOLERANCE	**30**	**30.0%**	**2.4%**
Renal Toxicity	5		
SNC/SNP Symptoms	7		
Clinical Contraindications	1		
DDI	1		
GI intolerance	4		
Allergic reactions	4		
Hepatic Toxicity	1		
Lipid Metabolism toxicity	3		
Arthromyalgia	2		
Other toxicities	2		