DETERMINANTS OF SWITCHING TO TAF-BASED CART OR TWO-DRUG COMBINATIONS WITH HIV-RNA ≤50 COPIES/ML IN A COHORT OF HIV-INFECTED INDIVIDUALS SEEN FOR CARE IN ITALY

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BACKGROUND

- Randomised studies have shown that switching to a TAF-based regimen is generally safer than continuing to take TDF-containing regimens, particularly for bone/kidney health [1,2].
- How these trial results might have impacted on daily prescriptions and the determinants of switching to TAF-based regimens have not been thoroughly investigated.

AIMS

- To estimate the incidence to TAF-based regimens in HIV-positive individuals with a VL≤50 copie/mL
- To identify predictors of switching to TAF-based cART (including ≥3 drugs) vs. switching to a dual regimen.

STUDY DESIGN AND METHODS

- The analysis includes data of HIV-positive patients in the Icona Foundation Study cohort who showed a stable viral load (VL)≤50 copies/mL while on triple cART after January 1, 2016 (baseline).
- Standard survival analysis of time to switch by means of Kaplan-Meier (KM) curves were used. Separate models were used for the endpoints of switching to 2DC or TAF-based cART.
- Cox regression models were used to identify independent predictors of time to switch. Multivariable models were constructed by including factors that showed a significant association in the univariable analysis.
- A competing risk KM analysis was conducted to jointly modelling the two type of switches.

RESULTS

- A total of 1,471 participants were included, 1,320 (90%) currently on TDF-based cART and 151 (10%) on TDF-sparing cART, all with a HIV-RNA ≤50 copies/mL. Median (IQR) age was 36 (29-43) years, CD4 count 530 (322-752) cells/mm^3 (14% with <200 cells/mm^3), CKD-Epi eGFR 99 (85-111) *ml/min/1.73m^2*, total cholesterol 168 (143-193) mg/dL, 21% female, 49% acquired HIV through MSM, 30% of foreign origin, 6% were co-infected with HCV, 12% had been diagnosed with AIDS before baseline.

Figure. Competing risk KM curves of switching to 2DC or TAF-based cART

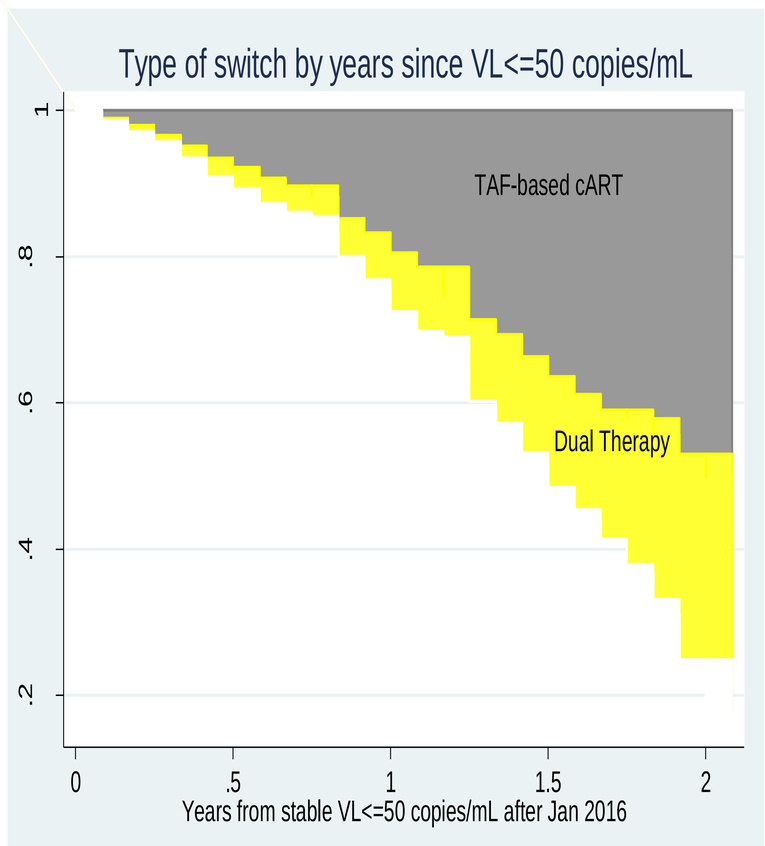

Table. Relative hazards of switching with a VL<=50 copies/mL by switch type (TAF-based cART vs. 2DC)

	Adjusted[&] relative hazards of switch (95% CI)			
	TAF-cART	p-value	2DC	p-value
Previous regimen				
Other	1.00		1.00	
TDF-based	37.59 (9.30, 152.0)	<.001	4.75 (1.69, 13.35)	0.003
eGFR				
60+	1.00		1.00	
0-59	0.59 (0.28, 1.24)	0.163	5.64 (2.27, 13.98)	<.001
Calendar year of baseline				
per more recent	9.16 (6.68, 12.55)	<.001	9.14 (5.59, 14.95)	<.001
Anchor drug				
Other class	1.00		1.00	
INSTI	9.48 (5.98, 15.03)	<.001	0.24 (0.14, 0.40)	<.001
PI/r	3.72 (2.12, 6.53)	<.001	0.56 (0.32, 0.96)	0.036

[&]Also adjusted for: gender, mode of HIV transmission, nationality, AIDS diagnosis, HCV co-infection status, age, CD4 count at baseline, total cholesterol at baseline, use of blood pressure lowering drugs, number of ART drugs previously virologically failed, anchor drug of regimen at baseline (INSTI- vs. PI/r- vs. RPV-based) which all failed to be independently associated with any of the studied endpoints

- In the TDF-based regimen group, the most common anchor drugs besides FTC were EVG (27%), RPV (25%), DTG (18%) and DRV/r (9%). In the TDF-sparing group, the most common anchor was DTG (54%), RAL (13%) or DRV/r (13%) with a backbone of 3TC/ABC. In the separate endpoint approach to analysis, by 2 years from baseline, the probability of switch to 2DC was 14% (95% CI:11-17%) and 26% (95% CI:23-29%) to TAF-based cART. The figure show the percentages using the competing event approach. The Table shows factors found to be independently associated with the probability of switching stratified by switch type.

CONCLUSIONS

- ***The majority of switches to TAF or to 2DC regimens were from TDF-based regimens.***
- ***A lower eGFR led to a greater probability of switching to 2DC but not to TAF-based regimens. Patients appear to be switched away from their successful regimen more frequently in recent periods.***
- ***Selection of 2DC regimens is also based on whether a person was already on regimens not containing INSTI or PI/r as the anchor drug.***

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