

ORAL COMMUNICATION

## Switch for a Long-Term Success

OC 70

# Switching antiretroviral therapy after weight gain: pro and cons from the ICONA Foundation cohort

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### Affiliation

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### ABSTRACT

**Background:** Antiretroviral therapy (ART)-associated weight gain is a frequent phenomenon after ART initiation, whose occurrence is sometimes reported as a reason for switching in observational and randomised studies. The aim of the present study is to describe the durability of the regimen after switching due to weight gain, the probability of virological failure and the weight trajectories across different post-switch ART regimens.

**Material and Methods:** This is a prospective observational multicentre study conducted within the ICONA (Italian Cohort Naïve to Antiretrovirals) Foundation cohort, between 1 January 2008 and 30 April 2025. Participants with undetectable HIV RNA (<50 copies/mL) whose reason to switch ART was weight gain, as reported by treating physician, were included. PWH were excluded if they had a diagnosis of a new malignancy, were pregnant, or had received GLP-1 agonists.

Kaplan–Meier curves were used to describe ART durability and virological failure by two years after switching ART. Virological failure was defined as a single HIV RNA > 200 copies/mL or a confirmed HIV RNA > 50 copies/mL. The trajectories of weight change were modelled using linear mixed models with repeated measures.

**Results:** A total of 56 people living with HIV (PWH) were included, 30.4% were women, with 19.6% reporting an AIDS-defining event in their medical history (Table 1). On average, they had gained 14.6% of their body weight in the two years preceding the switch.

Most participants switched from regimens containing INSTI (82%) to NNRTI- (60%) or PI-based regimens (20%). TAF was the most prevalent backbone before the switch (66%), whereas TDF became the most prevalent after the switch (41%).

Two years after switching, the probability of discontinuing the ongoing ART regimen was 24.5% (95%CI: 14.6%–39.3%), while the probability of virological failure was 12.7% (95%CI: 5.9%–26.3%), as shown in Figure 1. After switching, a significant overall reduction in body weight of -1.9 (95%CI: -3.3– -0.6) kg per year was observed ( $p = 0.007$ ): the change per year was -2.5 (95%CI: -4.4–0.6), -1.7 (95%CI: -4.2–0.8) and 0.7 (95%CI: -3.7–2.3) kg in people switched to NNRTIs, to INSTIs and to PIs respectively, without significant differences across regimens ( $p = 0.61$  for comparison between INSTI vs NNRTI;  $p = 0.32$  for comparison bPI vs NNRTI). Similarly, with regard to backbone drug, in the post-switch period, weight change was -3.8 (95%CI: -6.8 – -0.9) kg per year in PWH switched to TAF, -1.8 (95%CI: -3.9–0.3) kg per year in those switched to TDF, and -1.0 (95%CI: -3.1–1.8) kg per year in those on other backbones, without significant differences between TDF and TAF ( $p = 0.264$ ) or between other ART drugs and TAF ( $p = 0.12$ ), see Figure 2.

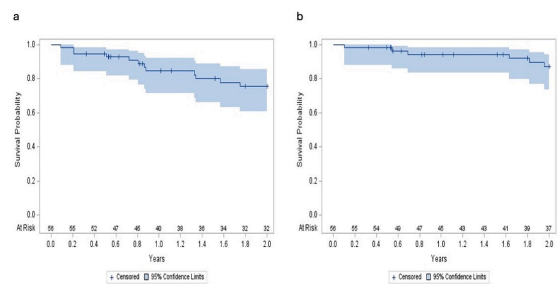
**Conclusions:** In ICONA, switches for weight gain have been burdened by a high rate of discontinuation and virological failure. Although PWH lost weight after switching, their weight trajectories were similar in people remaining in INSTI or TAF and in those who switched to other regimens.

**Table 1.** Demographic and clinical data of the study participants at study enrolment (n=56).

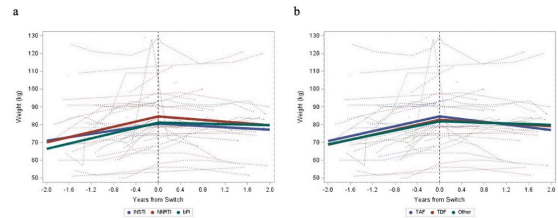
VARIABLES	
Sex at birth, n (%)	
Male	39 (69.6)
Female	17 (30.4)
Age (years), median (IQR)	50.1 (43.5-59.0)
Height (cm), median (IQR)	170.0 (165.0-177.0)
BMI, median (IQR)	28.4 (25.2-30.7)
Year of ART switch, n (%)	
2008-2014	3 (5.4)
2015-2019	8 (14.3)
2020-2025	45 (80.4)
Months on ART, median (IQR)	70.0 (28.9-140.1)
CD4 cells/mm <sup>3</sup> , median (IQR)	668.0 (458.5-871.0)
CDC stage C, n (%)	11 (19.6)
HCV-Ab pos, n (%)	3/53 (5.7)
HIVAg pos, n (%)	3/53 (5.7)
Mode of HIV Transmission, n (%)	
MSM	17 (30.4)
Heterosexual	31 (55.4)
IDU	6 (10.7)
Other/unknown	2 (3.6)
Ethnicity, n (%)	
Black	8 (14.3)
Caucasian	46 (82.1)
Latin	2 (3.6)
Other	0 (0.0)
ART regimen before switch	
NNRTI	4 (7.1)
bPI	6 (10.7)
INSTI	46 (82.1)
ART regimen after switch	
NNRTI	34 (60.7)
bPI	11 (19.6)
INSTI	11 (19.6)
Backbone before switch	
TAF	37 (66.1)
TDF	4 (7.1)
Other	15 (26.8)
Backbone after switch	
TAF	18 (32.1)
TDF	23 (41.1)
Other	15 (26.8)
ART discontinuation, n (%)	21 (37.5)
Time to ART discontinuation (days), median (IQR)	573 (295-861)
Switch for "Weight gain", n (%)	49 (87.5)

ART: antiretroviral therapy; bPI: boosted Protease Inhibitor; CD4: CD4<sup>+</sup> T-lymphocytes; CDC: Centers for Disease Control and Prevention; IQR: interquartile range; INSTI: integrase strand transfer inhibitor; IDU: intravenous drug use; MSM: men who have sex with men; N: number of observations; NNRTI: non-nucleoside reverse transcriptase inhibitor; NRTI: nucleoside reverse transcriptase inhibitor.

**Figure 1.** Kaplan–Meier survival curves for ART discontinuation (12 events; panel a) and virological failure (6 events; panel b) at 2 years after switching ART treatment.



**Figure 2.** Observed weights (dotted lines) and predicted weight trajectories (solid lines) from 2 years before to 2 years after ART switch, stratified by post-switch ART regimen, anchor drug (panel a) and backbone (panel b).



Slopes were estimated using linear mixed models with repeated measures per patient: one model for pre-switch values (-2 years to 0) and one for post-switch values (0 to +2 years). A separate overall model was fitted on the full dataset to obtain a robust estimate of the intercept at time 0.