P028

Effectiveness of switching to DOR-based antiretroviral therapy (ART) under real-world conditions in Germany

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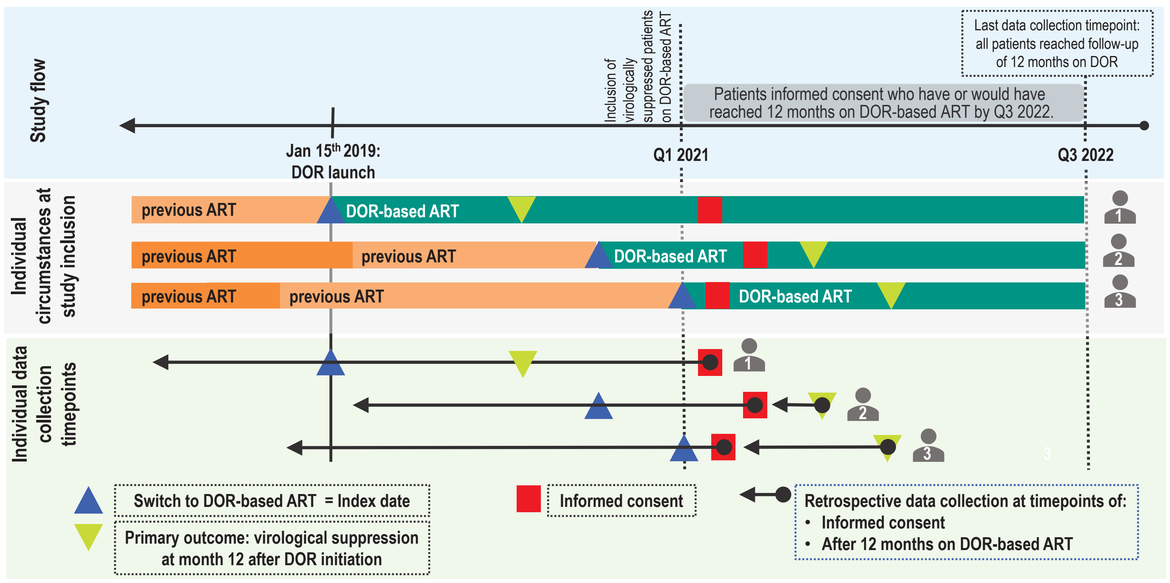
Background

- People living with HIV-1 (PLWH) are frequently switched to other antiretroviral regimens including next-generation nonnucleoside reverse transcriptase inhibitors (NNRTI) for reasons of treatment simplification or toxicity management. Doravirine (DOR), used in combination with other antiretrovirals for the treatment of HIV-1 infection, is effective and well-tolerated,[1-3] but data on virologic suppression and weight changes under DOR-based therapy outside of clinical trials are rare. Additionally, participants in clinical trials are highly selected and therefore may differ from patients who use DOR in in real-life clinical settings
- Therefore, the aim of this study was to assess reasons for switching to a DOR-based therapy and to characterize the effectiveness and impact on both body weight and lipids of DOR-based ART in a virologically suppressed switch population under real-world conditions

Figure 1. Study design – retrospective data collection from patient charts



Methods and objectives

- VICDOR is an ongoing, noninterventional, multicenter, retrospective chart review study of adults living in Germany. Data on DOR-based ART as well as on previous therapy are collected with demographic, clinical, and laboratory data from routine clinical visits 12 months before and up to 15 months after switching to DOR-based ART. Visits within a time frame of ±1 month are considered for each examined timepoint. The study design scheme is represented in **Figure 1**
- Patients included must be ≥ 18 years at the time of switch to DOR-based ART with a confirmed HIV-1 infection and confirmed virologic suppression on their previous (non-DOR-based) ART
- The primary objective of the study is to describe the proportion of patients who maintain virologic suppression* at 12 months after switching to DOR-based ART by means of the HIV-1 RNA level measured in blood
- The presented data reflect an interim analysis conducted on the first 100 patients who were screened, 97 of whom were eligible. Eligible patients were screened up until April 2022 and had switched to a DOR-based ART between January 2019 and June 2021

Table 1. Baseline characteristics

Age (years)	Median (IQR)
Age at the time of switch	48 (40-55)
Gender at birth	**n (%)**
Male	83 (85.57)
Female	14 (14.43)
Body weight (kg)	**Median (IQR)**
Body weight at the time of switch	85 (77-100)
BMI (kg/m²) (categorical)	**n (%)**
Underweight (BMI < 18.5)	1 (1.03)
Normal weight (BMI 18.5-24.9)	29 (29.90)
Overweight (BMI 25-29.9)	34 (35.05)
Obese Class 1 (BMI 30-34.9)	21 (21.65)
Obese Class 2 (BMI 35-39.9)	4 (4.12)
Obese Class 3 (BMI ≥ 40)	4 (4.12)
Missing	4 (4.12)
Comorbidities	**n (%)**
Yes	79 (81.44)
No	18 (18.56)
Most frequent comorbidities	**n (%)**
Arterial hypertension	28 (28.87)
Psychiatric disorder	20 (20.62)
Disorder of lipid metabolism	17 (17.53)
Cardiac, cardiovascular, or cerebrovascular disorder	14 (14.43)
Bone and bone metabolism disorder	13 (13.40)

Table 2. Prior ART and DOR-based ART

Anchor class of prior ART	n (%)
INSTI	61 (62.89)
PI	13 (13.40)
NNRTI	23 (23.71)
TAF-containing prior ART	**n (%)**
Yes	62 (63.92)
No	35 (36.08)
Reason for switch (multiple answers possible)	**n (%)**
Tolerability regarding weight gain	43 (44.33)
Tolerability regarding other aspects	17 (17.53)
Other reason	13 (13.40)
Improve management of comorbidities	8 (8.25)
Treatment simplification, convenience	7 (7.22)
Tolerability regarding CNS symptoms	6 (6.19)
Reduce potential for drug-drug interactions	6 (6.19)
Reason cannot be determined	3 (3.09)
Economic motivation	1 (1.03)
DOR-based ART regimens	**n (%)**
DOR / 3TC / TDF	89 (91.75)
DOR / DTG	4 (4.12)
DOR / DTG / FTC	1 (1.03)
DOR / RAL	1 (1.03)
DOR / TAF / FTC	1 (1.03)
DOR / TDF / DTG	1 (1.03)

3TC, lamivudine; BMI, body mass index; CNS, central nervous system; DOR, doravirine; DTG, dolutegravir; FTC, emtricitabine; INSTI, integrase strand transfer inhibitors; NNRTI, nonnucleoside reverse transcriptase inhibitors; PI, protease inhibitors; RAL, raltegravir; TAF, tenofovir alafenamide; TDF, tenofovir disoproxil fumarate.

Results

- Of the 97 PLWH included, the median age was 48 years, 85.6% were male, 29.9% were obese (BMI ≥ 30), and 81.4% had at least 1 comorbidity (**Table 1**). Most patients were switched from an integrase stand transfer inhibitor (INSTI)–containing regimen (62.9%); 63.9% had been on a tenofovir alafenamide (TAF)–containing regimen. The main reason for the switch was to improve tolerability regarding weight gain (44.3%). 91.8% were switched to doravirine/lamivudine/tenofovir disoproxil fumarate (DOR/3TC/TDF), and 8.2% were switched to other DOR-based regimens (**Table 2**)
- No cases of virologic failure** were observed. Of the 61 individuals with HIV-1 RNA results at 12 months, 100% remained virologically suppressed* (**Figure 2**)
- Mean increase of CD4+ T-cell counts was 13.48 cells/µl from switch to month 12 (**Table 3**). Of those PLWH who switched to DOR/3TC/TDF, levels of low-density lipoprotein-cholesterol (LDL-C) decreased a median of -5.5 mg/dl (**Table 4**), and body weight decreased a mean of -0.89 kg between switch and month 12 (**Table 5**)
- Among patients who switched to DOR/3TC/TDF specifically to improve tolerability regarding weight gain, body weight decreased by a mean of -2.54 kg from switch to month 12 (**Table 5**)

Figure 2. Virologic suppression* and virologic failure***

Patients with measurement of viral load (HIV-1 RNA copies/ml) at the respective timepoint

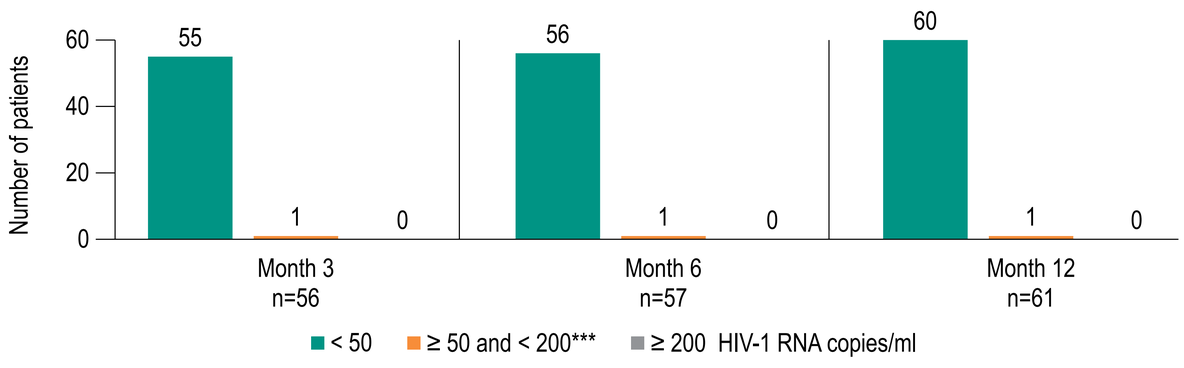


Table 3. CD4+ T-cells – Change from baseline

Time after switch	Number of patients (n)	Mean (SD) (cells/µl)
Month 3	55	+34.73 (172.05)
Month 6	55	+19.60 (138.41)
Month 12	61	+13.48 (194.66)

Table 4. LDL-C – Change from baseline

Patients who switched to DOR/TDF/3TC

Time after switch	Number of patients (n)	Median (IQR) (mg/dl)
Month 3	40	-9.0 (-26.5 - 2.5)
Month 6	43	-14.7 (-25 - 10.5)
Month 12	44	-5.5 (-23 - 11)

Table 5. Weight – Change from baseline

Patients who switched to DOR/TDF/3TC

	Total		Patients who switched to improve tolerability regarding weight gain (subgroup analysis)	
Time after switch	Number of patients (n)	Absolute difference in mean weight (SD) (kg)	Number of patients (n)	Absolute difference in mean weight (SD) (kg)
Month 3	35	-0.48 (2.46)	16	-0.59 (2.79)
Month 6	38	-1.09 (5.66)	19	-0.93 (5.68)
Month 12	49	-0.89 (4.71)	23	-2.54 (4.72)

Conclusions

The preliminary data suggest that, in the real world, DOR-based ART is effective in maintaining viral suppression and has no evidence of weight increase in a switch population of PLWH with a high prevalence of comorbidities.

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References

1. Molina JM, et al. *Lancet HIV.* 2020;7(1):e16-e26.
2. Orkin C, et al. *Clin Infect Dis.* 2019;68(4):535-544.
3. Johnson M, et al. *J Acquir Immune Defic Syndr.* 2019;81(4):463-472.

* defined as **1)** HIV-1 RNA < 50 copies/ml at 12 months, or **2)** if HIV-1 RNA is between 50 and 200 copies/ml at 12 months, with a subsequent next available measurement of < 50 copies/ml (within 120 days)
** defined as **1)** 2 consecutive measurements of ≥ 200 copies/ml, or **2)** 1 measurement of ≥ 200 copies/ml and a discontinuation
***Per protocol, these patients needed to have a follow-up visit with a viral load < 50 copies/ml to be regarded as virologically suppressed. Please note that the patient with a viral load of ≥ 50 and < 200 HIV-1 RNA copies/ml was not identical between the different measurements.

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