Patterns of Doravirine Use in a US Cohort

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OPERA® The Longitudinal Cohort

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BACKGROUND

- Doravirine (DOR) is the newest non-nucleoside reverse transcriptase inhibitor (NNRTI) to be developed.
- DOR is available as a single agent or co-formulated with lamivudine (3TC) and tenofovir disoproxil fumarate (TDF)
- Its efficacy and safety have been established in antiretroviral therapy (ART) naïve and experienced people with HIV (PWH)[1]
- DOR was approved in the United States by the FDA on 30AUG2018 and in Europe by the European Medicines Agency on 22NOV2018
- While the European AIDS Clinical Society (EACS) recommends DOR for ART-naïve adults,[2] the US Department of Health and Human Services recommends DOR in certain clinical conditions[3]

OBJECTIVE

To characterize doravirine users and describe treatment patterns before and with doravirine in the US

METHODS

Study Population

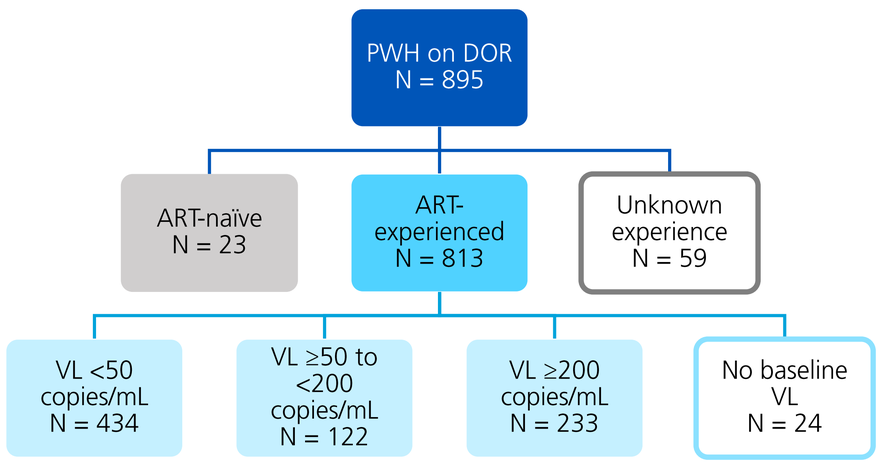
- OPERA® observational cohort
  - Prospectively captured, routine clinical data from electronic health records from 96 clinics in the US (22 states, 1 US territory)
  - >148K people with HIV (PWH) as of July 2022, representing ~14% of people with diagnosed HIV infection in the US[4]
- Inclusion criteria
  - Diagnosis of HIV infection with laboratory confirmation
  - Initiated/switched to DOR between 30AUG2018 and 30NOV2021
  - ≥18 years old at DOR initiation/switch
- Index date: Date of first DOR-containing regimen initiation during the study period

Analyses

- Descriptive statistics for demographic, clinical and ART patterns stratified by viral load (VL) at DOR initiation, among ART-experienced PWH with baseline viral load
- Sankey diagram to illustrate pathways from prior ART regimens to DOR-containing regimens, among PWH with ART experience or unknown prior experience

RESULTS

Figure 1. Study population



ART, antiretroviral therapy; DOR, doravirine; N, number; PWH, people with HIV; VL, viral load

Table 1. Baseline characteristics of ART-experienced PWH with baseline viral load, N = 789

	VL <50 (N = 434)	VL ≥50 to <200 (N = 122)	VL ≥200 (N = 233)
Median age (IQR)	54 (43, 61)	54 (45, 59)	49 (38, 56)
Male sex, n (%)	328 (76)	99 (81)	163 (70)
Black race, n (%)	145 (33)	45 (37)	145 (62)
History of AIDS-defining events, n (%)	168 (39)	49 (40)	117 (50)
Comorbidities, n (%)[a]	392 (90)	115 (94)	208 (89)
Median VACS index (IQR)[b]	22 (12, 34)	18 (12, 28)	35 (19, 52)

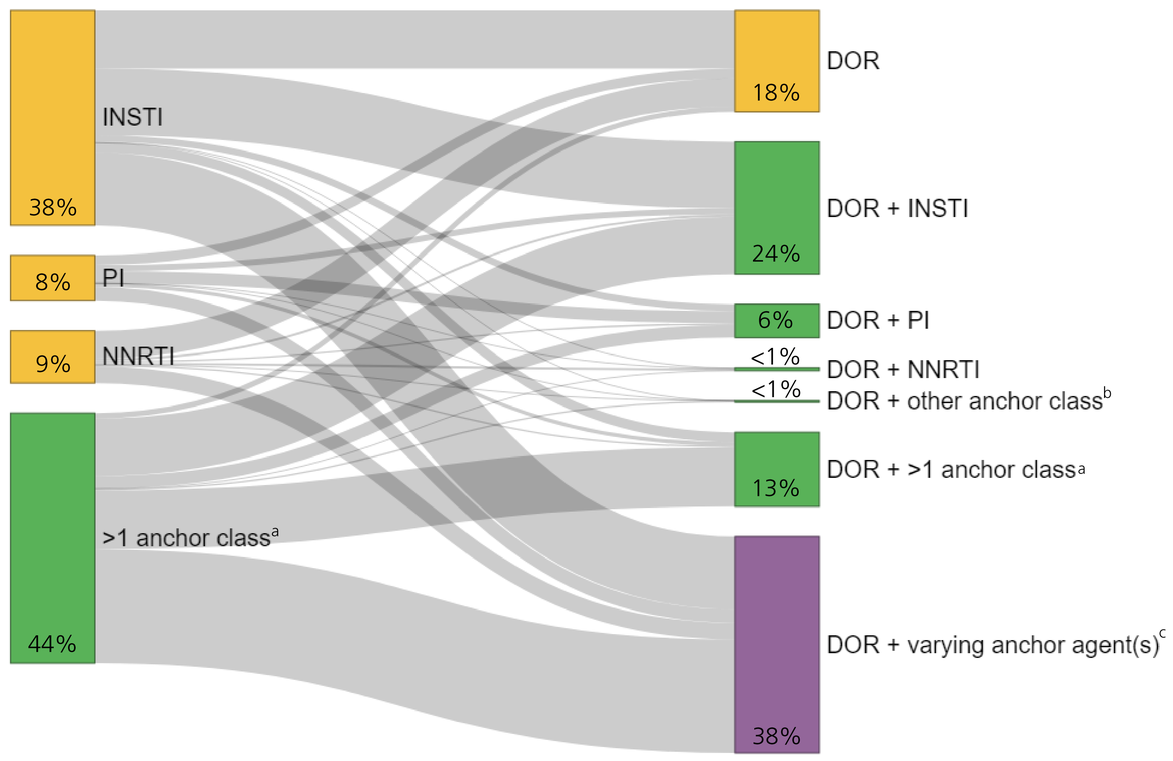
ART, antiretroviral therapy; IQR, interquartile range; N, number; VACS, Veterans Aging Cohort Study
[a] Any diagnosis of cardiovascular disease, endocrine disorder, mental health condition, liver disease, bone disease, peripheral neuropathy, renal disease, hypertension, rheumatoid arthritis, or substance abuse
[b] 5-year mortality index, scored by summing pre-assigned points for age, CD4 cell count, HIV-1 RNA, hemoglobin, platelets, aspartate and alanine transaminase, creatinine, and viral hepatitis C infection. A higher score is associated with a higher risk of 5-year all-cause mortality.

Table 2. Treatment patterns among ART-experienced PWH with baseline viral load, N = 789

	VL <50 (N = 434)	VL ≥50 to <200 (N = 122)	VL ≥200 (N = 233)
Median calendar year of ART initiation (IQR)	2014 (2010, 2017)	2016 (2012, 2018)	2015 (2012, 2018)
NNRTI included in prior regimen, n (%)	60 (14)	≤5[a]	7 (3)
DOR/3TC/TDF single tablet formulation, n (%)	112 (26)	11 (9)	38 (16)
Anchor agent, n (%)			
DOR only	139 (32)	12 (10)	39 (17)
DOR + other anchor agent(s)[b]	295 (68)	110 (90)	194 (83)

3TC, lamivudine; ART, antiretroviral therapy; DOR, doravirine; IQR, interquartile range; N, number; NNRTI, non-nucleoside reverse transcriptase inhibitor; TDF, tenofovir disoproxil fumarate; VL, viral load
[a] HIPAA requires the masking of cells with 1 to 5 individuals
[b] Integrase strand transfer inhibitor (INSTI), protease inhibitor (PI), non-nucleoside reverse transcriptase inhibitor (NNRTI), attachment inhibitor, fusion inhibitor

Figure 2. Pathways from prior regimen to doravirine-containing regimen among ART-experienced PWH switching from a known regimen, N = 743



ART, antiretroviral therapy; DOR, doravirine; INSTI, integrase strand transfer inhibitor; NNRTI, non-nucleoside reverse transcriptase inhibitor; PI, protease inhibitor; PWH, people with HIV
[a] ≥2 anchor agents from different classes (i.e., INSTI, PI, NNRTI, attachment inhibitor, fusion inhibitor)
[b] Attachment inhibitor, fusion inhibitor
[c] Anchor agent(s) changed over time while maintaining DOR

DISCUSSION

- In the US, between 30AUG2018 and 30NOV2021, DOR was most often prescribed to:
  - ART-experienced PWH (**Figure 1**)
  - PWH with comorbidities and elevated mortality risk (**Table 1**)
- Overall, the single agent formulation (DOR alone) was often preferred over the single tablet formulation (DOR/3TC/TDF) (**Table 2**)
  - However, the single tablet formulation was more commonly used for PWH with baseline VL <50 copies/mL than those with baseline VL ≥50 copies/mL (**Table 2**)
- Multiple patterns of ART regimen sequences from prior to next regimen were observed.
  - DOR was used in combination with other anchor agent(s) in 68% of experienced PWH with baseline VL <50 copies/mL and 83-90% of those with baseline VL ≥50 copies/mL (**Table 2**)
  - Once prescribed, DOR use was often maintained despite regimen readjustment (i.e., changes in other core agents while maintaining DOR) occurring in 38% of experienced PWH (**Figure 2**)
- These findings highlight the intricacy of ART regimen selection in a population who may have complex needs

KEY FINDINGS

- In the US, DOR has been preferentially prescribed to ART-experienced PWH, in combination with other anchor agents.
- Treatment patterns suggest the need to accommodate complex needs in this population

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