Poster
PE2/37

Comparison of a Two-Drug Regimen (Dolutegravir/Rilpivirine) to Standard Three-Drug Regimens in Virologically Suppressed, Treatment Experienced Individuals in the Real World

Gerald Pierone[1], Kathy L. Schulman[2], Jennifer Fusco[2], Vani Vannappagari[3], Michael Aboud[4], Leigh Ragone[3], Gregory Fusco[2]

[1]Whole Family Health Center, Vero Beach, FL, USA; [2]Epividian, Durham, NC, USA; [3]ViiV Healthcare, Research Triangle Park, NC, USA; [4]ViiV Healthcare, London, United Kingdom

Contact Information:
Kathy L. Schulman
4505 Emperor Blvd, Suite 220, Durham, NC 27703
p: (508) 243-1442,
@: kathy.schulman@epividian.com

OPERA® The Longitudinal Cohort

Background

- Three antiretrovirals from two classes have long been the standard of care for people living with HIV (PLWH)
- Newer, more powerful antiretrovirals have introduced the potential for effective therapy with fewer agents
- Dolutegravir/rilpivirine (DTG/RPV) was the first single tablet, once daily regimen containing only two antiretrovirals to be approved
- DTG/RPV was approved in the US at the end of 2017

Objective

To compare the effectiveness and durability of DTG/RPV to standard three-drug regimens (3-DR) in a real-world population

Methods

Study population

- **Data source:** OPERA database of electronic health records from 94,852 PLWH (84 clinics, 18 U.S. states/territories) as of 9JAN2019
- **Inclusion Criteria:**
  - HIV- 1 positive, HIV-2 negative, ≥13 years of age
  - Initiated a 2-DR (DTG/RPV) or 3-DR (DTG, EVG, RAL, DRV, RPV, or ATV + 2 NRTIs, boosted or unboosted) between 1JAN2018 and 30JUN2018
  - Last viral load <50 copies/mL on or before initiation of regimen of interest
  - No exposure to DTG/RPV prior to initiation
- **Baseline:** Date of initiation of 2-DR or 3-DR of interest
- **Study outcomes:**
  - Virologic failure: 2 VL ≥ 200 copies/mL or 1 VL ≥ 200 copies/mL + regimen discontinuation
  - Sustained suppression: Last VL <50 copies/mL and <200 copies/mL
  - Treatment discontinuation: Modification or discontinuation of regimen of interest
- **Follow-up** until:
  - Regimen discontinuation
  - Death or
  - Study end (31DEC2018)

Analyses

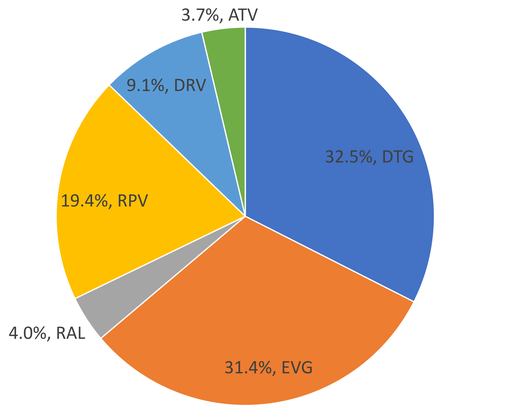
- Description of patient characteristics and outcomes
  - Categorical variables: Pearson's chi-square or Fisher exact tests
  - Continuous variables: Wilcoxon rank-sum
- Time to discontinuation and virologic failure
  - Kaplan-Meier methods
  - Multivariable Cox Proportional Hazards models

Results

Table 1. Baseline Demographic and Clinical Characteristics

Characteristic n (%)	DTG/RPV (n=259)	3-DR (n=2,792)	p-value
Age ≥50 years	143 (55.2%)	1,093 (39.1%)	**<.0001**
Female sex	38 (14.7%)	534 (19.1%)	0.2303
African American race	78 (30.1%)	1,131 (40.5%)	**0.0011**
Hispanic ethnicity	88 (34.0%)	719 (25.8%)	**0.0041**
Care in Southern US	172 (66.4%)	1,355 (48.5%)	**<.0001**
Hx of AIDS	68 (26.3%)	777 (27.8%)	0.5880
CD4 Count >500 cells/ µL	205 (79.2%)	1,986 (71.1%)	0.1100
Hx of Syphilis	72 (27.8%)	1,001 (35.9%)	**0.0094**
Any Comorbidity	224 (86.5%)	2,218 (79.4%)	**0.0067**

Figure 1. Distribution of Core Agents Among the 3-DR Group



DTG=dolutegravir, EVG=elvitegravir, RAL=raltegravir
RPV=rilpivirine, DRV=darunavir, ATV=atazanavir

Table 2. Durability and Virologic Suppression with 2-DR versus 3-DR

Outcome (n, % or median, IQR)	DTG/RPV (n=259)	3-DR (n=2,792)	p-value
Durability			
Weeks on regimen	36.4 (29.9 – 43.1)	37.7 (28.3-48.4)	**0.0252**
Discontinuations	25 (9.7%)	438 (15.7%)	**0.0096**
Suppression among those tested			
Last VL < 50 copies/mL	209 (92.1%)	2,003 (90.0%)	0.3139
Last VL < 200 copies/mL	222 (97.8%)	2,134 (95.9%)	0.2083

Figure 2. Unadjusted Cumulative Probability of Discontinuation of 2-DR versus 3-DR

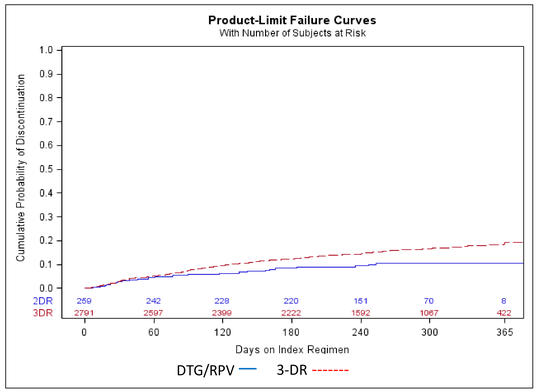


Figure 3. Unadjusted Cumulative Probability of Virologic Failure of 2-DR versus 3-DR

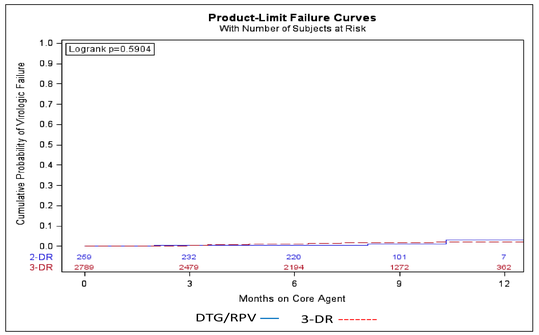


Table 3. Virologic Failure with 2-DR versus 3-DR

	DTG/RPV (n=259)	3-DR (n=2,792)	p-value
Virologic Failure among those tested			
Virologic Failures, n (%)	3 (1.3%)	44 (2.0%)	0.7972
Incidence Rate*	1.7 (0.6, 5.4)	2.3 (1.7, 3.1)	0.6937
Unadjusted HR^	1.0	1.38 (0.43, 4.43)	0.8085
Adjusted HR$^{\mp}$	1.0	1.16 (0.35, 3.79)	0.8085

*IR=Incidence Rate per 100 person-years (95% CI)
^HR=Hazard Ratio (95% CI)
$^{\mp}$HR adjusted for age, sex, race, ethnicity, region, CD4 cell count, history of comorbidities

Discussion

- DTG/RPV users differed from 3-DR users notably (Table 1)
  - DTG/RPV users were older, more likely to be Hispanic, to live in the southern US, and have comorbidities
  - 3-DR users were younger, more likely to be African American, and have a history of syphilis (an indicator of a complex lifestyle)
- DTG/RPV users were followed for less time, experienced fewer discontinuations, and did not differ in sustained suppression compared to 3-DR users (Table 2, Figure 2)
- Virologic failure was uncommon early and did not differ between DTG/RPV and 3-DR users (Table 3, Figure 3)
- Strengths: Large, diverse population of PLWH in the US
- Limitations: No reasons for those who discontinued or resistance data for those who failed

Key Findings

Among ART-experienced, virologically suppressed PLWH initiating DTG/RPV or standard 3-DR, there was no observed difference in their ability to remain suppressed or risk of virological failure in a real-world setting over the first 12 months of approval

Acknowledgements

This research would not be possible without the generosity of people living with HIV and their OPERA caregivers. Additionally, we are grateful for the following individuals: Amelito Torres (SAS programming), Jeff Briney (QA), Bernie Stooks (Database Arch & Mgmt), Judy Johnson (Med Terminology Classification), Rodney Mood (Site Support)

Support

This research was funded by ViiV Healthcare, Research Triangle Park, NC, USA

ViiV Healthcare Epividian