Real world use of dolutegravir/ lamivudine in treatment naive people living with HIV during the COVID pandemic

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BACKGROUND

• For years, antiretroviral therapy (ART) consisting of three-drug regimens (3DR) were the standard to treat people with HIV (PWH)1
• Two-drug regimens (2DR) have been introduced in recent years to potentially reduce ART toxicities and drug-drug interactions for individuals with comorbid conditions while demonstrating comparable efficacy to 3DR2
• Dolutegravir/ lamivudine (DTG/STC) 2DR was approved by the FDA for ART-naive PWH in April 20193
• DTG/STC 2DR uptake in the US coincided with the COVID-19 pandemic

OBJECTIVE

To compare dolutegravir/ lamivudine two-drug regimen to typical three-drug regimens among ART-naive PWH people with HIV initiating ART

METHODS

Study Population

• OPERA® observational cohort
• Prospectively captured, routine clinical data from electronic health records from 96 clinics in the US (23 states, 1 US territory)
• >160K people with HIV (PWH) as of July 2022, representing ~13% of people with diagnosed HIV infection in the US4

Inclusion criteria

• HIV-1 infection without HIV-2 infection
• Age ≥18
• ART-naive
• ART initiated between 01/01/2019 and 30/04/2021 with either:
  • DTG/STC 2DR
  • Bictegravir-based three-drug regimen (BIC 3DR)
  • DTG-based 3DR i.e., DTG/Abacavir (ABC)/3TC, DTG/Tenofovir disoproxil fumarate (TDF)/Emtricitabine (FTC), or DTG/Tenofovir alafenamide (TAF)/FTC

Censoring events: study end (i.e., 31OCT2021), loss to follow-up (i.e., 12 months after last contact), death, or regimen change

Baseline: Date of ART initiation

Outcome Definitions

• Discontinuation (DC): A switch to another regimen or prescription gap > 45 days
• Virologic failure (VF): Two consecutive viral load (VL) ≥200 copies/mL after 24 weeks on the regimen

Analyses

• Univariate Poisson regression to estimate incidence rates (IR) and 95% confidence intervals (CI) of DC and VF
• Cox proportional hazards marginal structural models to estimate hazard ratios (HR) and 95% CIs for the association between ART regimen and VF

RESULTS

Table 1. Baseline demographic and clinical characteristics, N = 3,810

<table>
<thead>
<tr>
<th></th>
<th>DTG/STC 2DR N = 360</th>
<th>BIC 3DR N = 3,114</th>
<th>DTG 3DR N = 336</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median age (IQR)</td>
<td>30 (25, 40)</td>
<td>31 (26, 41)</td>
<td>34 (27, 45)</td>
</tr>
<tr>
<td>Female sex, n (%)</td>
<td>48 (13)</td>
<td>444 (14)</td>
<td>63 (19)</td>
</tr>
<tr>
<td>Black race, n (%)</td>
<td>190 (53)</td>
<td>1,848 (59)</td>
<td>214 (64)</td>
</tr>
<tr>
<td>Hispanic ethnicity, n (%)</td>
<td>93 (26)</td>
<td>591 (19)</td>
<td>49 (15)</td>
</tr>
<tr>
<td>Care received in the Southern US, n (%)</td>
<td>318 (88)</td>
<td>2,418 (78)</td>
<td>288 (86)</td>
</tr>
<tr>
<td>Median viral load, log copies/mL (IQR)</td>
<td>4.7 (4.2, 5.2)</td>
<td>4.8 (4.2, 5.3)</td>
<td>4.7 (4.0, 5.2)</td>
</tr>
<tr>
<td>CD4 cell count &lt; 200 cells/μL, n (%)</td>
<td>53 (15)</td>
<td>763 (24)</td>
<td>81 (24)</td>
</tr>
<tr>
<td>Comorbidities, n (%)</td>
<td>140 (39)</td>
<td>1,221 (39)</td>
<td>183 (54)</td>
</tr>
</tbody>
</table>

2DR, two-drug regimen; 3DR, three-drug regimen; FTC, lamivudine; BIC, bictegravir; DTG, dolutegravir; IQR, interquartile range; n, number

Figure 1. Incidence rate of confirmed virologic failure over follow-up

DISCUSSION

• Among ART-naive PWH in the US, baseline characteristics varied across groups (e.g., higher likelihood of comorbidities with DTG 3DR, lower likelihood of low CD4 count with DTG/STC 2DR; Table 1)
• Rates of confirmed virologic failure were low across regimens (Figure 1); risk of failure was similar between DTG/STC 2DR and BIC 3DR (Figure 2)
• 25% to 62% of the discontinuations were gaps in prescriptions > 45 days
  • Gaps in prescription were less common with DTG/STC 2DR
  • 23% to 35% returned to the initial regimen after the gap
  • Such ART prescription patterns may be an anomaly of the COVID-19 pandemic

KEY FINDINGS

Among ART-naive PWH:

• Virologic failure was uncommon with DTG/STC 2DR, BIC 3DR or DTG 3DR
• Many discontinuation were, in fact, gaps in prescriptions; 1/3 resumed the initial regimen

REFERENCES

1. Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the Use of Antiretroviral Agents in Adults and Adolescents Living with HIV. Department of Health and Human Services.

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