ART Regimen Persistence Among Treatment-Experienced Patients With HIV Switching to a MTR or STR Since 2018

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Background
- There are approximately 38 million people living with HIV (PLWH) worldwide and approximately 1.7 million people are newly infected each year.
- Lack of adherence to antiretroviral treatment (ART) may result in both disease progression and HIV transmission due to uncontrolled viral replication.
- Current guidelines indicate that integrase strand transfer inhibitors (INSTIs) are the preferred anchor drugs in antiretroviral drug regimens and are often combined with one or two nucleoside reverse transcriptase inhibitors (NRTIs).
- This study investigates differences in treatment persistence among the different DHHS recommended INSTI-based triple-drug single tablet regimens (STRs) and multi-tablet regimens (MTRs).

Objective
- Determine the rates of regimen switching and of antiretroviral treatment discontinuation for three-drug INSTI-based STRs and MTRs among treatment-experienced PLWH.

Methods
- A retrospective study using claims data from Optum Research Database (01/01/2010-03/31/2020).
- Inclusion criteria:
  - ≥2 non-diagnostic medical claims with a diagnosis code for HIV during the baseline or follow-up periods.
  - ≥1 pharmacy claim for guideline-recommended INSTI-based triple therapy from 01/01/2018 – 12/31/2019 (identification period)
- Measures:
  - Baseline patient demographics and clinical characteristics
  - ICD-9-CM and ICD-10-CM comorbid conditions based on Clinical Classifications Software
  - Proportional hazards models were utilized to control for differences that remain after IPTW.

Results
- The final study sample included 4,251 treatment-experienced PLWH on the following regimens at entrance into the study:
  - B/FTC/TAF
  - ABC/3TC/DTG
  - FTC/TDF+DTG
  - FTC/TAF+DTG
  - FTC/TDF+DTG vs. B/FTC/TAF (Figure 1)

Persistence and reasons for end of LOT by regimen:
- MTRs were more likely than STRs to be discontinued (15% vs 11%, p<0.003) or switched (25% vs 7%, p<0.001)

Table 2. Persistence and reason for end of LOT

<table>
<thead>
<tr>
<th>Regimen</th>
<th>Total</th>
<th>STRs</th>
<th>MTRs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reasons</td>
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</tr>
<tr>
<td>ART discontinuation</td>
<td>525 (12.4)</td>
<td>139 (6.1)</td>
<td>386 (26.8)</td>
</tr>
<tr>
<td>Switching</td>
<td>1,911 (45.0)</td>
<td>422 (19.5)</td>
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Time to ART switch by regimen:
- Kaplan-Meier analysis

Table 3. Persistence and reason for end of LOT by regimen

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Risk of ART switch by regimen:
- Compared to B/FTC/TAF, the risk of switching was higher for other regimens (p<0.001). (Figure 2)

Figure 1. Kaplan-Meier Analysis: Time to ART switch

Figure 2. Proportional hazards model risk of ART switch by regimen

Figure 3. Kaplan-Meier Analysis: Time to discontinuation of ART

Figure 4. Proportional hazards model risk of ART discontinuation by regimen

Conclusions
- Total follow-up time, days, mean (SD) 370.6 (203.0) 333.1 (178.5)

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* Risk of ART switch by regimen:
  - The risk of switching was lower for B/FTC/TAF compared to all other regimens, p<0.001 (Figure 4)
  - The risk of discontinuation was higher for female gender, Medicare coverage, higher Charlson comorbidity score, substance use disorder, acute renal dysfunction and severe renal dysfunction.

Limitations
- PLWH were primarily covered by commercial insurance, and results might not be generalizable to a broader population.
- This study was conducted only in the United States and the geographic distribution was skewed to the US South.

References
- 1Optum, Eden Prairie, MN, USA; 2Gilead Sciences, Foster City, CA, USA; 3Independent Healthcare Analyst; 4AccessHealth MA, Boston, MA, USA

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