

15. ANNEX 1 – NON-INTERVENTIONAL STUDY REPORT (ABSTRACT)

Rationale and background

When taken as prescribed, daily oral PrEP reduces the risk of HIV diagnosis by 99% compared to placebo or those who do not use PrEP among men who have sex with men. Cabotegravir long-acting injectable (CAB LA) PrEP was shown to have a superior efficacy for HIV prevention over daily oral TDF/FTC. HIV testing is required before PrEP initiation and recommended every 3 months on oral PrEP, or every 2 months on CAB LA PrEP. Regular screening for STIs is also recommended.

Research questions and objectives

Objective 1. Estimate the annual incidence of HIV diagnoses among all people without HIV in OPERA

Objective 1a. Among people with an incident HIV diagnosis, characterize history of PrEP use

Objective 2. Describe the demographic and clinical characteristics of people who initiate an oral or LA PrEP regimen

Objective 3. Estimate the frequency and rate of incident HIV diagnoses during oral PrEP or LA PrEP among people who initiate a PrEP regimen

Objective 4. Evaluate PrEP coverage within 12 months following index oral PrEP or LA PrEP initiation among people who initiate a PrEP regimen

Objective 5. Assess HIV testing and STI screening patterns at index oral or LA PrEP initiation and within 12 months following PrEP initiation, as well as the frequency and rate of STI diagnoses among people who initiate a PrEP regimen

Objective 6. Describe demographic and clinical characteristics, HIV testing, HIV diagnoses, STI screening and STI diagnoses over a 12-month period of follow-up among people who are not on PrEP but could benefit from PrEP

Study design

- Design: Cohort study using secondary data from electronic medical records in the OPERA cohort.

Setting

Electronic health record (EHR) systems throughout the US.

Study populations:

- Objective 1: adults without evidence of HIV and ≥ 1 clinical encounter in OPERA between 2021-2024
- Objective 1a: adults with incident HIV between 2021-2024
- Objectives 2-5: adults without evidence of HIV who started a new PrEP formulation between 21DEC2021 and 30JUN2024
- Objective 6: adults without evidence of HIV not currently on PrEP with ≥ 1 clinical encounter in OPERA between 21DEC2021 and 30JUN2024, with an indication for PrEP

Subjects and study size, including dropouts

Between 21DEC2021 and 30JUN2024, a total of 39,011 adults without evidence of HIV started a new PrEP formulation in OPERA and contributed a total of 41,105 episodes of PrEP use.

Variables and data sources

Exposures:

- PrEP use
- Time-updated PrEP episodes, representing continuous use of a specific PrEP formulation

Outcomes:

- Incident HIV diagnosis
- PrEP coverage
- HIV testing/STI screening

Data Sources: OPERA cohort, a multi-site observational database of patient health records managed in electronic health record (EHR) systems throughout the US.

Results

A total of 2,514 HIV acquisitions were recorded in the OPERA cohort, of whom only 12% had ever received PrEP and 10% had received PrEP within ≤ 30 days before the HIV diagnosis.

A total of 39,011 adults without evidence of HIV started a new PrEP formulation in OPERA and contributed a total of 41,105 episodes of PrEP use during the study period (39,193 oral PrEP episodes, 1,912 CAB LA PrEP episodes). A median of 93% of days followed were covered by CAB LA PrEP (IQR: 81, 100) compared to a median of 58% of days followed covered by oral PrEP (IQR: 25, 94).

Within 12 months of start, there was one HIV acquisition on CAB LA PrEP, for an IR of 0.9 per 1000 person-years (95% CI: 0.1, 6.5), compared to 180 HIV acquisitions on oral

PrEP, for an IR of 4.9 per 1000 person-years (95% CI: 4.3, 5.7). HIV testing occurred more frequently on CAB LA PrEP (IR: 6.51 per person-year; 95% CI: 6.38, 6.65) than oral PrEP (IR: 2.90 per person-year; 95% CI: 2.89, 2.92) over the first year of a PrEP episode. STI testing also occurred more frequently on CAB LA PrEP (IR: 5.09 per person-year; 95% CI: 4.97, 5.20) than oral PrEP (IR: 3.22 per person-year; 95% CI: 3.20, 3.24).

Between 21DEC2021 and 30JUN2024, there were 141,652 individuals who could benefit from PrEP in OPERA. Their rate of HIV diagnosis was 0.75 per 100 person-years (95% CI: 0.71, 0.80). The rate of HIV testing was 1.26 per person-year (95% CI: 1.26, 12.27). A third (35%) received ≥ 1 STI diagnosis. The rate of STI diagnosis was 41.64 per 100 person-years (95% CI: 41.30, 41.97). The rate of STI screening was 1.68 per person-year (95% CI: 1.68, 1.69).

Discussion

In this study, CAB-LA PrEP users represented a more vulnerable population (e.g., women, transgender individuals, Medicaid recipients, etc.) than oral PrEP users. This highlights the role of LA PrEP as a tool to end the HIV epidemic and the importance of having options to better meet the needs of different populations who may benefit from PrEP. PrEP coverage with CAB LA PrEP was excellent, and considerably higher than with oral PrEP. Moreover, HIV acquisition while on PrEP was rare, with >5 times lower rates during CAB LA PrEP use compared to oral PrEP use. These findings confirm the importance of PrEP access and formulation options to end the HIV epidemic. HIV PrEP clinical care represents an opportunity to provide sexual health-related services. However, despite HIV testing being a crucial part of HIV prevention, the timing of HIV acquisition often could not be confirmed because testing was often omitted before or during both the CAB LA and oral PrEP episodes. Suboptimal HIV testing raises concerns for delayed HIV diagnosis and treatment. Rates of both HIV and STI testing were significantly higher during CAB LA PrEP use than oral PrEP use. These results suggest that increased clinical contact from regular CAB LA PrEP injection visits may encourage more frequent HIV and STI testing among PrEP users.

Conclusion

In conclusion, oral and CAB LA PrEP use are effective and resulted in a limited number of HIV acquisitions. While CAB LA PrEP tended to be used by a more vulnerable population than oral PrEP, testing profiles and PrEP coverage were improved with CAB LA compared to oral PrEP. Access to PrEP is a crucial tool in the fight against HIV, and having options in terms of the mode of PrEP delivery is important to serve different populations with unique needs and challenges.