Real-World Implications of CABENUVA in a HIV-1 Treatment Setting: An Observational Study

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INTRODUCTION

Cabunuva (CAB+RPV LA)[1] is a novel long-acting injection for the treatment of HIV-1. This complete antiretroviral regimen offers an alternative to daily oral medication, as it may be administered either monthly or every 2 months. This allows People Living with HIV (PLWH) the opportunity to alleviate the stress of medication adherence, HIV status disclosure, and stigma that accompanies taking daily antiretroviral medication. Cabunuva received FDA approval in January of 2021, as a result of the ATLAS[2] and FLAIR[3] trials which proved its non-inferiority to standard oral ARV regimens in HIV-1 viral load suppression[4]. Due to its novel treatment modality, gaps in data exist that necessitate further investigation. This study seeks to address some of these gaps by analyzing real-world patient data in a practice setting. Specifically, this study aims to evaluate the efficacy of Cabenuva among underrepresented populations as compared to the findings from the ATLAS[2]and FLAIR clinical trials.

OBJECTIVES

Primary Objective:

- To assess efficacy of Cabenuva in underrepresented populations from the FLAIR and ATLAS clinical trials

Secondary Objectives:

- To assess adherence once initiated on Cabenuva
- To determine the length of time from 1st discussion of Cabenuva to 1st injection
- To compare MCA and FLAIR/ATLAS prescribing patterns
- To determine the cause of ineligibility for Cabenuva initiation

INCLUSION CRITERIA

- HIV-1 positive individuals over the age of 18 with complete medical records available at LA General Hospital

***Complete medical records = complete laboratory and treatment history records available from the time of HIV diagnosis*

METHODS

Study Design: Retrospective cohort study

Patient Population: HIV-1 diagnosed patients at LA General Maternal, Child, Adolescent and Adult Center for Infectious Disease and Virology (MCA).

Data Collection: Electronic Medical Records (EMR) were used to gather data on patient demographics, medical history, viral load suppression, and adherence.

Data Analysis: A per protocol approach was used; patients that were lost to follow-up were excluded from data analysis. Patients subsequently enrolled in the LATITUDE[4] trial were excluded from 1st discussion to 1st injection of Cabenuva data analysis.

RESULTS

In this study, a cohort of 83 eligible patients underwent screening, of which 82 successfully received the initial Cabenuva injection. Among these participants, 2 patients were subsequently enrolled in the LATITUDE Trial, while 4 patients were lost to follow-up after their initial Cabenuva administration. Notably, 1 participant declined the initial injection citing concerns related to needle size. Of the 4 patients lost to follow-up, 1 refused further injections due to painful reactions at the injection site. The reasons for loss to follow-up in the remaining 3 cases were unknown.

At the MCA clinic, 12 patients were determined to be ineligible for Cabenuva injections due to genotype mutations. Among them, 10 had NNRTI-resistant genotypes, and 2 had INSTI-resistant genotypes.

Table 1. Comparison of Demographic Characteristics

Demographics	This Study	FLAIR	ATLAS
Age in years – # of patients (%)			
< 35	33 (40)	288 (51)	160 (26)
35 to <50	24 (29)	216 (38)	294 (48)
≥ 50	25 (31)	62 (11)	162 (26)
Sex – # of patients (%)			
Males	43 (52)	439 (78)	413 (67)
Females	40 (48)	127 (22)	203 (33)
Race – # of patients (%)			
White	3 (4)	417 (74)	421 (68)
Black	5 (6)	103 (18)	139 (23)
Hispanic/Latino	52 (63)	N/A	N/A
Asian	2 (2)	N/A	35 (6)
Pacific Islander	0 (0)	N/A	N/A
American Indian	1 (1)	N/A	N/A
Other	20 (24)	44 (8)	21 (3)
Missing	0 (0)	2 (<1)	N/A
BMI in kg/m² – # of patients (%)			
< 30	48 (58)	489 (86)	N/A
30 to 40	35 (42)	77 (14)	N/A
> 40	3 (4)	0 (0)	N/A
Previous ARV Regimen – # of patients (%)			
INSTI	60 (72)	*Trial excluded those that were previously on any ARV*	201 (33)
NNRTI	12 (15)		310 (50)
PI	2 (2)		105 (17)
Salvage Regimen	4 (5)		n/a
2 Drug Regimen	5 (6)		n/a

In contrast to the demographics observed in the ATLAS[2] and FLAIR[3] trials, the patient cohort evaluated within the MCA clinic encompasses a notably higher representation of underrepresented populations among individuals living with HIV. Specifically, this study population comprises a substantial proportion of individuals aged 50 years and above (31%), female patients (48%), individuals of Hispanic or Latino descent (63%), and a small percentage of American Indian descent (1%). Furthermore, a considerable portion of participants exhibit a body mass index (BMI) ≥ 30 kg/m^2 (42%), and a majority have previously been administered integrase strand transfer inhibitor (INSTI)-based antiretroviral regimens (72%) as their prior HIV treatment protocol.

Primary Objective

As previously stated, the principal aim of this investigation was to evaluate the efficacy of Cabenuva in a practical setting, as indicated by HIV viral load serum levels (cells/mL) post-administration, within underrepresented demographic subsets that were excluded from the ATLAS[2] and FLAIR[3] trials. Employing a per protocol analysis, data from 78 patients, with HIV viral load serum levels recorded following their Cabenuva injection, were analyzed. Among these patients, 74 out of 78 maintained viral load suppression (≤ 50 cells/mL)[1] subsequent to their initial Cabenuva injection. Conversely, 4 patients exhibited transient elevations in viral load, commonly termed "viral blips," with serum levels reaching ≤ 100 cells/mL. 3 out of these 4 patients with recorded viral blips reported a body mass index (BMI) ≥ 30 kg/m^2. The remaining patient had a BMI proximal to 30, specifically measuring 29.2 kg/m^2.

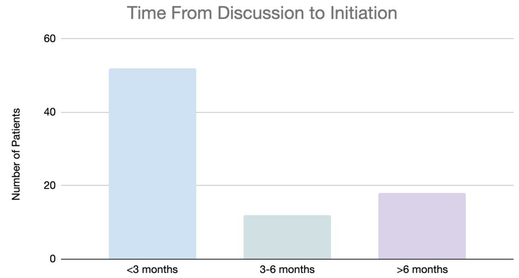
Further examination of the viral load data revealed that patients with recorded viral blips achieved undetectable viral load levels following subsequent Cabenuva injections.

Secondary Objectives

Adherence: Adherence to Cabenuva was defined as receipt of their next injection within 7 days of scheduled dose[1]. Non-adherence was defined as failure to receive the next scheduled dose within 7 days. 82 patients received ≥ 2 doses, 26 of whom exhibited ≥ 1 incidence of non-adherence. 4 of the 26 exhibited ≥ 2 consecutive incidences of non-adherence.

Time to Initiation: The length of time (in months) from the first discussion of Cabenuva between the patient and the provider to their first injection were analyzed in each of the 80 patients following the per protocol analysis (Figure 1).

Figure 1. Length of time from 1st discussion to initiation



Additional analysis revealed 6 patients with detectable viral loads (> 50 cells/mL) at time of discussion. 2 patients enrolled in the LATITUDE[4] trial were excluded. Of the remaining 4 patients, the average time to achieve an undetectable viral load was 238.25 days, ranging from 132 to 357 days.

Prescribing Patterns: The assessment of Cabenuva prescribing patterns focused on oral lead-in usage and injection frequency. While ATLAS[2] and FLAIR[3] trials mandated oral lead-ins for all, only 27 patients (32.5%) received them in this study. Majority of prescribers (81 patients, 97.6%) opted for every 2 month injections over monthly ones (2 patients, 2.4%).

CONCLUSIONS

This study explores the real-world implications of Cabenuva injections in the clinical setting of the MCA clinic, addressing data gaps left by the FLAIR and ATLAS trials. The population studied in this study included more females, Hispanic/Latinos, and those with high BMI. While these previous trials lacked data on patients with BMI ≥ 30 kg/m², nearly half of the patients in this study fell into this category, including 3 with BMI > 40, previously unaccounted for. 3 patients experienced viral blips post-Cabenuva initiation, resolved with subsequent injections, indicating sustained viral load suppression. Despite adherence challenges, all eligible patients achieved viral load suppression, alluding to a preference for Cabenuva over daily oral tablets. Timely initiation of Cabenuva proved challenging, with some patients requiring over 6 months to start treatment. Deviating from trial protocols, many prescribers opted out of the mandated oral lead-in period, influenced by practical concerns and the need for prompt initiation of the injectable. Notably, this deviation did not compromise Cabenuva's efficacy or elicit hypersensitivity reactions. Furthermore, a trend emerged favoring every 2 month injections, aiming to address adherence challenges posed by transportation barriers and other social determinants of health.

STRENGTHS & LIMITATIONS

Strengths:

- Address data gaps
- Real world setting
- Per-protocol analysis
- Generalizability: relevance and applicability to similar clinical setting and patient populations

Limitations:

- Small sample size
- Retrospective
- Short duration of study
- Not representative of PLWH globally

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