Lenacapavir: A first-in-class capsid inhibitor for the treatment of highly treatment-resistant HIV

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Purpose: The purpose of this article is to review the pharmacology, efficacy, and safety of the capsid inhibitor lenacapavir for the treatment of multidrug-resistant human immunodeficiency virus type 1 (HIV-1) infection.

Summary: A review of the literature was performed by searching PubMed/MEDLINE for all relevant articles published between February 2021 and March 2023 using the keywords "lenacapavir," "Sunlenca," "human immunodeficiency virus," and "treatment" together with "multidrug resistant human immunodeficiency virus." All English-language articles describing clinical trials assessing the efficacy and safety of lenacapavir when used in humans for the treatment of HIV infection were included. Review articles, conference abstracts, and article references were evaluated for relevant information, and data were also obtained from the manufacturer's website and the package insert. Lenacapavir has been approved by the Food and Drug Administration (FDA) for the treatment of HIV-1 infection in heavily treatment-experienced adults with multidrug resistance for whom the current antiretroviral regimen is failing due to resistance, intolerance, or safety considerations. It is the first in a new class of drugs called capsid inhibitors to receive FDA approval. Lenacapavir is a long-acting subcutaneous injectable to be administered once every 6 months. The phase 3 clinical trial evaluating lenacapavir has demonstrated its efficacy in viral load reduction from baseline compared to placebo in patients receiving optimized background therapy. The most common adverse events reported in the clinical trial were injection site reactions, occurring in 63% of participants.

Conclusion: Lenacapavir is a novel capsid inhibitor indicated, in combination with other antiretroviral therapy, for treatment of multidrug-resistant HIV-1 infection.

Keywords: capsid inhibitor, HIV/AIDS, HIV resistance, lenacapavir, long-acting injectable, treatment-resistant HIV.

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At the end of 2021, an estimated 38.4 million people were living with human immunodeficiency virus (HIV) infection globally,[1] of whom 1.2 million reside in the US.[2] The prevalence of persons living with HIV is increasing due to advancements in antiretroviral therapy (ART) that have led to a dramatic reduction in HIV-associated morbidity and mortality.[3] Nevertheless, some patients continue to have difficulty maintaining sufficient viral suppression, resulting in viral mutations and drug resistance.[4,5]

The HIV treatment guidelines of the Department of Health and Human Services recommend a combination of 2 nucleoside reverse transcriptase inhibitors plus an integrase strand transfer inhibitor, a non-nucleoside reverse transcriptase inhibitor, or a boosted protease inhibitor as the initial regimen for most patients with HIV.[6] For many patients, this combination of antiretrovirals suppresses viral load to below detectable limits, increases $CD4^+$ T cell counts, prevents transmission,

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and extends lifespan. In the setting of treatment-experienced patients who have multidrug resistance, an estimated 2% of the population, the guidelines suggest a regimen consisting of any fully active agents.[6,7] For patients with multidrug resistance with ongoing viremia who lack effective treatment options, challenges are faced when attempting to construct a fully suppressive regimen. Entry inhibitors, another class of ART, are reserved for salvage therapy for those who are treatment experienced. However, these agents come with limitations such as requiring frequent infusions and multiple daily dosing.[8]

Development of drug resistance occurs in part due to HIV's inherent ability to rapidly replicate and mutate.[9] Individuals on fully suppressive therapy are able to blunt these effects; however, for viral levels to remain fully undetectable, at least 95% adherence to the prescribed ART regimen must be maintained.[10] Problems frequently arise for those who are not adherent to their medications, resulting in the emergence of mutations conferring drug resistance. These mutation subtypes can also be spread through the transmission of HIV from one individual to another. Up to 18% of newly diagnosed persons with HIV in the US had at least one drug resistance mutation.[11] Therefore, there is a need for continuous development of ART with high barriers to resistance to combat the growing incidence of drug-resistant HIV.

Lenacapavir is the first capsid inhibitor approved by the Food and Drug Administration (FDA)[12] and the European Medicines Agency[13] for treatment of HIV-1 infection. Lenacapavir was approved by FDA on December 22, 2022, for the treatment of heavily treatment-experienced adults for whom their current ART regimen was failing due to resistance, intolerance, or other safety considerations. Lenacapavir had priority review, fast-track, and breakthrough therapy designation by FDA, which allowed for expedited development and review.[12] Of note, a new drug application (NDA) was submitted to FDA previously in June 2021 but was placed on clinical hold due to chemistry manufacturing and controls issues related to the compatibility of the drug with the proposed container vial. The NDA was resubmitted in June 2022 and subsequently approved. The manufacturer, Gilead, is anticipated to file additional submissions for lenacapavir for expanded indications including use as pre-exposure prophylaxis (PrEP) for HIV.[14]

The purpose of this article is to review the pharmacology, pharmacokinetics, efficacy, and safety data for lenacapavir and to evaluate its role in the treatment of HIV.

KEY POINTS

- Lenacapavir is a first-in-class capsid inhibitor that has been approved by the Food and Drug Administration for the treatment of HIV-1 infection in highly treatment-experienced patients with multidrug resistance, in combination with other antiretroviral agents.
- Lenacapavir is administered subcutaneously every 6 months as maintenance therapy after completion of an initiation period with oral lead-in therapy.
- Additional studies of lenacapavir are ongoing for treatment-naive patients living with HIV and prevention of HIV infection.

Data selection

A literature search was performed using the search engine PubMed/MEDLINE to identify all relevant articles published between February 2021 and March 2023. The following search terms and strings were utilized: "lenacapavir," "Sunlenca," "human immunodeficiency virus," and "treatment" together with "multidrug-resistant human immunodeficiency virus." All English-language articles describing clinical trials assessing the efficacy and safety of lenacapavir when used in humans for the treatment of HIV infection were included. Prospective, double-blind randomized controlled trials were identified and included. Review articles, conference abstracts, and article references were evaluated for relevant information, and data were also obtained from the manufacturer's website and the package insert. All trials utilizing lenacapavir for PrEP for HIV were excluded.

Mechanism of action

Lenacapavir is the first capsid inhibitor approved for the treatment of HIV-1 infection. It has multistage, selective inhibition of the HIV capsid.[15,16] The structure of HIV contains an encapsulated protein core, known as the capsid, which protects HIV-1 RNA and aids in its transport to the nucleus for integration into the DNA of the host cell.[17] Lenacapavir binds directly to the capsid between 2 adjacent monomers and prevents the progression of HIV through multiple mechanisms. First, by stabilizing the capsid shell and inhibiting uncoating of the shell, lenacapavir prevents viral replication in the early stages of the viral life cycle. Additionally, lenacapavir targets the same capsid binding site as host factors, which interferes with the transport of viral complexes, ultimately preventing viral integration. Finally, in the late stages of the HIV life cycle, lenacapavir distorts the capsid lattice to inhibit maturation of HIV virus.[15]

Pharmacokinetics

Subcutaneous administration of lenacapavir has a slow initial release, with peak concentrations reached 77 to 84 days after the first dose and a half-life of 8 to 12 weeks.[18,19] Plasma concentrations are sustained for more than 6 months after a single dose of 900 mg administered subcutaneously.[20] However, because of the slow initial release of subcutaneous lenacapavir,

oral lenacapavir must be used for an initial loading dose. Oral lenacapavir has a bioavailability of 6% to 10% and a half-life of 10 to 12 days, and its concentration peaks at around 4 hours after administration; thus, oral lenacapavir can be dosed either daily or weekly. Absorption of lenacapavir is not significantly influenced by food intake.[15]

Lenacapavir is metabolized mainly through glucuronidation by UGT1A1 with minimal metabolism by cytochrome P450 isozyme 3A4 (CYP3A4). As a substrate of P-glycoprotein (P-gp), uridine diphosphoglucuronate glucuronosyltransferase 1A1 (UGT1A1), and CYP3A enzymes, lenacapavir may have varying plasma concentrations when used concomitantly with inducers or inhibitors of these enzymes. Strong inducers of CYP3A enzymes significantly reduce lenacapavir exposure and are contraindicated with lenacapavir. On the contrary, combined P-gp, UGT1A1, and strong CYP3A inhibitors may increase lenacapavir concentrations and are not recommended. Lenacapavir is a moderate inhibitor of CYP3A enzymes and may increase the concentrations of drugs primarily metabolized by these enzymes if they are initiated within 9 months of the last subcutaneous dose of lenacapavir. It is important to check the prescribing information for both lenacapavir and concomitantly used drugs for dosing recommendations.[15]

Some other antiretrovirals should not be used in conjunction with lenacapavir due to the mechanisms described. Concomitant use of efavirenz, nevirapaine, and tipranavir/ritonavir may result in loss of the therapeutic effect of lenacapavir, while atazanavir/cobicistat and atazanavir/ritonavir may increase concentrations of lenacapavir, leading to increased risk of adverse effects.[15] Lenacapavir may also have clinically significant interactions with other antiretrovirals, including etravirine, based on its pharmacokinetic profile.[15] Other antiretrovirals that may be used in treatment-experienced patients, such as darunavir/ritonavir and dolutegravir, are not expected to have any interaction. Lenacapavir also appears to be synergistic with several other antiretrovirals, including the investigational agent islatravir.[21] This may favor development of additional drug combinations in the future.

There is no known cross-resistance to lenacapavir with other antiretroviral agents.[15,22,23] Lenacapavir appears to be effective against HIV-2 infection as the capsid structure is similar for HIV-1 and HIV-2. However, lenacapavir was significantly less active against HIV-2 isolates than HIV-1 isolates in in vitro studies.[15]

Clinical trials

FDA's approval of lenacapavir was based on evidence from a phase 2/3 trial. The CAPELLA trial evaluated the efficacy and safety of lenacapavir in combination with an optimized background regimen in patients with multidrug-resistant HIV-1 infection. This was a randomized, double-blind trial of 72 participants, aged 12 years or older, from 11 countries. Eligibility criteria included documented resistance to 2 or more antiretroviral medications in at least 3 classes and no more than 2 fully active antiretrovirals that could be effectively combined. Participants were enrolled in one of 2 cohorts according to their HIV-1 RNA level during the screening period. Cohort 1 included 36 participants who had stable viremia (decrease of <0.5 $\log_{10}$ copies/mL) and an HIV-1 RNA level of ≥400 copies/mL. Cohort 2 consisted of 36 participants who had reduced viremia (decrease of ≥0.5 $\log_{10}$ copies/mL) or an HIV-1 RNA level of <400 copies/mL.[24]

Participants in cohort 1 were randomized in a 2:1 ratio to receive either oral lenacapavir or placebo on days 1, 2, and 8 (600 mg, 600 mg, and 300 mg, respectively) during the functional monotherapy period while continuing their failing therapy. Starting on day 15, participants in the oral lenacapavir group received subcutaneous lenacapavir 927 mg every 6 months plus optimized background therapy. Individuals in the placebo group were initiated on oral lenacapavir on days 15, 16, and 22, followed by subcutaneous lenacapavir. Similarly, in cohort 2, participants received oral lead-in therapy before receiving subcutaneous lenacapavir every 6 months; however, they remained on optimized background therapy for the entire duration of the study. The primary endpoint, evaluated in cohort 1, was the proportion of participants achieving a reduction of at least 0.5 $\log_{10}$ copies/mL from baseline in HIV-1 RNA at the end of the functional monotherapy period. Secondary endpoints included the proportion of participants in cohort 1 with a plasma HIV-1 RNA level of >50 copies/mL and >200 copies/mL at weeks 26 and 52.[24]

Notable baseline characteristics of the sample population included a median age of 52 years and 75% prevalence of male sex. Over 99% of participants had documented resistance to 2 or more drugs in the nucleoside reverse transcriptase inhibitor class, and 97% had documented resistance to drugs in the non-nucleoside reverse transcriptase inhibitor class. There were no significant between-group differences in baseline demographics in cohort 1; however, individuals in the lenacapavir group had lower median HIV-1 RNA levels than those in the placebo group (4.2 $\log_{10}$ copies/mL vs 4.9 $\log_{10}$ copies/mL).[24]

At the end of the functional monotherapy period in cohort 1, 88% of participants in the lenacapavir group met the primary endpoint compared to 17% of participants in the placebo group (95% confidence interval [CI], 35% to 90%; $P < 0.001$). During the maintenance period, at week 26, 81% of participants in cohort 1 had achieved a viral load of <50 copies/mL (95% CI, 64% to 92%) and 89% had achieved a viral load of <200 copies/mL (95% CI, 74% to 97%). In cohort 2, a viral load of <50 copies/mL was reported in 83% of participants while a viral load of <200 copies/mL was reported in 86% of participants. Both cohorts experienced increases in $CD4^+$ T cell counts, with a least-squares mean increase of 75 (95% CI, 40-110) cells/μL in cohort 1 and 104 (95% CI, 69-139) cells/μL in cohort 2.[24] At 52 weeks, 83% of participants in cohort 1 continued to have a viral load

of <50 copies/mL and 86% achieved a viral load of <200 copies/mL, regardless of the number of fully active agents in the optimized background therapy.[25] Capsid inhibitor resistance developed in 8 participants, 4 of whom had achieved an HIV-1 RNA level of <50 copies/mL. Of these 8 participants, 4 had no fully active agents in their optimized background therapy and the remaining 4 had poor adherence to background therapy.[24]

The antiviral activity of lenacapavir remained consistent in patients with resistance to the 4 classes of antiretroviral agents (N = 45), including integrase strand transfer inhibitors, non-nucleoside reverse transcriptase inhibitors, nucleoside reverse transcriptase inhibitors, and protease inhibitors, in addition to viruses resistant to fostemsavir, ibalizumab, maraviroc, and enfurviritide (N = 61).[24]

One additional phase 2 study has been published since FDA approval of lenacapavir. The CALIBRATE study evaluated lenacapavir for safety and efficacy in treatment-naive patients rather than treatment-experienced patients with multidrug resistance.[26] A summary of the CALIBRATE study is included in this review as it is anticipated that the manufacturer will submit an application to use lenacapavir for additional indications later this year.[14,27]

The CALIBRATE trial is an ongoing phase 2 randomized, open-label, active-controlled study designed "to generate exploratory clinical data to support the future development of lenacapavir-containing regimens." A total of 183 participants from the US and the Dominican Republic were randomized to 4 intervention groups. Both group 1 and group 2 received subcutaneous lenacapavir 927 mg every 26 weeks plus oral emtricitabine/tenofovir alafenamide daily. After 28 weeks, the emtricitabine/tenofovir alafenamide was changed to daily oral tenofovir alafenamide in group 1 and to daily oral bictegravir in group 2. Participants in groups 1 and 2 had oral loading doses of lenacapavir before starting injections. Group 3 received oral lenacapavir daily plus oral emtricitabine/tenofovir alafenamide daily. The fourth intervention group did not receive any form of lenacapavir and instead received bictegravir/emtricitabine/tenofovir alafenamide alone. Participants in this trial were ART naive and had an HIV-1 RNA viral load of ≥200 copies/mL and $CD4^+$ T cell count of ≥200 cells/μL at screening. Patients with an active hepatitis B or hepatitis C virus infection were excluded.[26]

The primary efficacy outcome was the proportion of patients who achieved an undetectable viral load, defined as fewer than 50 copies/mL, by week 54. The secondary efficacy outcomes evaluated included the proportion of participants who achieved an undetectable viral load by weeks 28, 38, and 80 and the changes in $\log_{10}$ HIV-1 RNA and $CD4^+$ T cell counts from baseline to weeks 28, 38, 54, and 80, in addition to assessing rates of virological failure, rebound, and resistance.[26] Data from week 80 were presented at the 2023 Conference on Retroviruses and Opportunistic Infections with similar results to week 58.[19]

Achievement of the primary outcome at week 54 ranged from 85% to 92%, with no statistically significant differences between treatment groups. Viral suppression was rapid, with 94% of all participants who received either oral or subcutaneous lenacapavir reaching viral suppression by week 28. Moreover, participants who received lenacapavir had a greater increase in $CD4^+$ T cell counts, with a median of 219 cells/μL compared to 177 cells/μL in those who received bictegravir/emtricitabine/tenofovir alafenamide. Six participants met the protocol-defined criteria for virological failure, but none developed resistance.[26]

Safety and tolerability

The safety and tolerability of lenacapavir for the current FDA-approved indication were primarily assessed through the phase 2/3 CAPELLA trial in treatment-experienced adults with HIV who received lenacapavir for 52 weeks. The most common adverse event was an injection site reaction (ISR), which was seen in 65% of patients, with 96% of reactions being mild or moderate in severity. The remaining 4% of patients experienced severe (grade 3) ISRs, which resolved within 15 days. ISRs were characterized by swelling, pain, erythema, nodules, indurations, pruritis, extravasation, and mass. While nodules and indurations required more time to resolve, with a median time to resolution of 148 days, the median time to resolution for all other symptoms of ISRs was 5 days. Nausea was the second most common adverse reaction, which was seen in 4% of patients. Overall, lenacapavir was well tolerated, with only one patient requiring discontinuation of treatment due to a grade 1 injection site nodule. Adverse effects seen in the phase 2 trial were similar to those in CAPELLA, with ISRs reported as the most prevalent adverse effect (55%) with subcutaneous lenacapavir, which were generally mild (86%) to moderate (12%) in severity.[24]

It is also important to highlight the fact that lenacapavir was previously placed on a clinical hold due to compatibility issues with the initial container vial that was made with borosilicate. The drug manufacturer successfully addressed this concern with an alternative vial made with aluminosilicate glass, which does not have any known compatibility issues.[28]

Special populations

Human data on the use of lenacapavir during pregnancy are insufficient to evaluate a drug-associated risk of birth defects and miscarriage. In reproductive animal studies, no adverse developmental effects were seen when lenacapavir was administered to rats and rabbits at at least 16 times the recommended human dose. An ongoing pregnancy exposure registry is available to monitor pregnancy outcomes for patients exposed to lenacapavir during pregnancy. Healthcare providers can register individuals through the Antiretroviral Pregnancy Registry (telephone: 1-800-258-4263).[15]

Table 1. Lenacapavir Dosing

Phase	Dosing
Initiation dosing option 1	
Day 1	927 mg by subcutaneous injection (2 × 1.5-mL injections) and 600 mg orally (2 × 300-mg tablets)
Day 2	600 mg orally (2 × 300-mg tablets)
Maintenance	927 mg by subcutaneous injection (2 × 1.5-mL injections) every 6 months (26 weeks ± 2 weeks) from the date of last injection
Initiation dosing option 2	
Day 1	600 mg orally (2 × 300-mg tablets)
Day 2	600 mg orally (2 × 300-mg tablets)
Day 8	300 mg orally (1 × 300-mg tablet)
Day 15	927 mg by subcutaneous injection (2 × 1.5-mL injections)
Maintenance	927 mg by subcutaneous injection (2 × 1.5-mL injections) every 6 months (26 weeks ± 2 weeks) from the date of last injection

In lactating individuals, it is not known whether lenacapavir is present in human breast milk, affects human milk production, or has effects on the breastfed infant. Lenacapavir was detected at low levels in the plasma of nursing rat pups with no adverse effects. Mothers who are HIV positive and receive lenacapavir are advised not to breastfeed due to the potential risk of HIV transmission to HIV-negative infants or development of viral resistance in HIV-positive infants. The safety and efficacy of lenacapavir have not been studied in pediatric patients.[15]

There are no clinically significant differences in the pharmacokinetics of lenacapavir based on age, sex, ethnicity, race, body weight, severe renal impairment, or moderate hepatic impairment. Data regarding the pharmacokinetic effects of end-stage renal disease or severe hepatic impairment on lenacapavir were not available at the time of this article's writing. Lenacapavir is 98.5% protein bound and is not expected to be affected by dialysis.[15]

Dosing and administration

There are 2 FDA-approved methods for initiating lenacapavir therapy; both methods involve an oral lead-in period before starting injections, as shown in Table 1. Lenacapavir 300-mg oral tablets are available as 4-tablet and 5-tablet therapy packs and may be taken without regard to food. Following completion of the initiation regimen, lenacapavir 927 mg is to be administered subcutaneously every 6 months (26 weeks) into the abdomen. Each 1.5-mL vial contains 463.5 mg of lenacapavir, and 2 injections are required for a complete dose. Lenacapavir is packaged as a dosing kit, containing 2 single-dose vials with a vial access device and a disposable syringe and needle for each vial. Initiation and maintenance injections of lenacapavir must be administered by a healthcare professional. No dose adjustments for renal or mild or moderate hepatic impairment are necessary. Lenacapavir should be stored in the original carton at room temperature (20-25 °C, or 68-77 °F). Once drawn up, lenacapavir should be administered as soon as possible.[15]

As with all treatments for HIV, adherence to the recommended regimen is strongly encouraged. Lenacapavir should be scheduled every 26 weeks; however, the manufacturer allows patients to receive the injections up to 2 weeks before or after the scheduled date. If more than 28 weeks have elapsed since the last injection, the initiation dosage regimen should be restarted from day 1, using either option 1 or option 2, with oral lenacapavir.[15]

A 6-month dosing schedule is a favorable option for patients who have difficulty maintaining adherence. Despite the benefits lenacapavir offers, there are risks associated with its prolonged half-life. Residual concentrations of lenacapavir may remain in systemic circulation for up to 12 months after the last injection. Individuals who discontinue or interrupt therapy may have increased potential for development of resistance due to loss of viral suppression. If discontinuation of lenacapavir is indicated, an alternative, fully suppressive regimen should be initiated no later than 28 weeks after the final injection.[15]

Access and financial considerations

While lenacapavir is a novel first-in-class long-acting HIV-1 treatment, the cost of lenacapavir is notably higher than that of the oral treatments currently available. In addition, lenacapavir must be administered by a healthcare professional. Therefore, additional considerations, such as arrangement of patient transportation to clinics and use of healthcare provider time, should also be taken into account when determining cost-effectiveness.[29]

The cost of lenacapavir should not be directly compared to that of other ART when used for multidrug-resistant HIV, as there are few treatment alternatives available. Drug selection in this scenario is highly patient specific and dependent on the patient's resistance history.

Long-acting injectable therapy for treatment and prevention of HIV has been significantly complicated by cost and access burden. Billing practices and requirements are subject to change and will vary among practice sites. At the time of this article's writing, lenacapavir can be acquired through a patient's pharmacy benefit from their insurance using the CVS Specialty

Pharmacy or through the patient's medical benefit in a buy-and-bill process.[30] These processes may present as a hurdle for some clinics, as navigating the drug approval process will vary by insurance plan. Patient assistance programs and copay assistance are available through Gilead's Advancing Access program for patients who are uninsured or underinsured.[30]

Relevance to patient care and clinical practice

Lenacapavir is novel in both its mechanism of action and administration schedule. Lenacapavir is the first and only HIV-1 capsid inhibitor. All other FDA-approved medications for heavily treatment-experienced patients are entry inhibitors. Lenacapavir also joins a small subset of ART agents that are long-acting injectables and is the only long-acting subcutaneous antiretroviral indicated for the treatment of HIV-1. Lenacapavir is also the only HIV-1 treatment option that is administered twice a year; all other ART agents require more frequent administration.

Although lenacapavir is currently only indicated as salvage therapy for the treatment of treatment-experienced patients with HIV with multidrug resistance, it has the potential for use in treatment-naive patients as well, as demonstrated by the CALIBRATE trial. Lenacapavir may potentially reduce pill burden in salvage settings and may assist with pill burden in additional patient populations if further indications are approved in the future. In studies of other injectable HIV treatments, such as long-acting cabotegravir/rilpivirine, patients preferred the injectable regimen over a daily oral regimen. While we cannot extrapolate these data to lenacapavir, the subcutaneous route and twice-yearly dosing frequency may be desirable for many patients. Several studies have demonstrated that patients prefer long-acting injectable ART over daily oral therapy.[31-33] Given the long-acting nature of lenacapavir, it is also important to fully evaluate the risk for drug-drug interactions and risk of long-lasting adverse effects.

Overall, these findings support the use of lenacapavir as a treatment for HIV-1 infection. However, lenacapavir requires the use of at least one additional antiretroviral agent in conjunction to create a complete long-acting regimen. Thus, until there is another long-acting agent that can be co-formulated or given alongside subcutaneous lenacapavir, lenacapavir must be used as adjunct to oral ART.

Lenacapavir is being studied for other indications, such as therapy for treatment-naive patients[26] and for HIV prevention.[34] It is also being studied in combination with investigational drugs such as islatravir.[35] None of these indications or medication combinations are FDA approved at this time, but they are potentially on the horizon for future therapies.

Conclusion

Lenacapavir is a newly FDA-approved drug administered subcutaneously every 6 months following an oral induction period of 2 to 8 days. It has a novel mechanism of action as the first capsid inhibitor to be approved by FDA for the treatment of HIV-1 infection. The efficacy and safety of lenacapavir for use in treatment-experienced adults with multidrug resistance have been established through clinical trials. While cost may be considered a potential barrier, because of the limited treatment options available to patients with multidrug resistance, healthcare providers should not disregard its place in therapy. Lenacapavir is currently being studied for additional indications.

Data availability

No new data were generated or analyzed in support of this article.

Disclosures

The authors have declared no potential conflicts of interest.

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