



January 24, 2022

## FDA Expands Use of Remdesivir (Veklury®) for Outpatients With Mild-to-Moderate COVID-19

### Current Status<sup>1,2,3</sup>:

On January 21, 2022, the FDA took two actions to expand the use of the antiviral drug Veklury® (remdesivir) to certain **non-hospitalized adults and pediatric patients** for the treatment of mild-to-moderate COVID-19 disease. The FDA has expanded the approved indication for Veklury® to include its use in adults and pediatric patients (12 years of age and older who weigh at least 40 kilograms, which is about 88 pounds) with positive results of direct SARS-CoV-2 viral testing, and who are not hospitalized and have mild-to-moderate COVID-19, and are at high risk for progression to severe COVID-19, including hospitalization or death.

The agency also revised the Emergency Use Authorization (EUA) for Veklury® to additionally authorize the drug for treatment of pediatric patients weighing 3.5 kilograms to less than 40 kilograms or pediatric patients less than 12 years of age weighing at least 3.5 kilograms, with positive results of direct SARS-CoV-2 viral testing, and who are not hospitalized and have mild-to-moderate COVID-19, and are at high risk for progression to severe COVID-19, including hospitalization or death.

### Background:

On May 1, 2020, the FDA first issued an EUA for remdesivir use in hospitalized adult and pediatric patients with severe COVID-19. On August 28, 2020, the FDA updated the remdesivir EUA and expanded its use to include treatment of all hospitalized adult and pediatric patients with suspected or laboratory-confirmed COVID-19, regardless of disease severity. On October 22, 2020, the FDA officially approved remdesivir for use in adult and pediatric patients 12 years of age and older and weighing at least 40 kilograms for the treatment of COVID-19 requiring hospitalization. Remdesivir is the first and only treatment to be approved by the FDA for COVID-19.

### Availability:

Supply of remdesivir remains available through request to the IHS National Supply Service Center (via submission of IHS Issue Request for Stores Stock Supplies Form 413). Additionally, remdesivir is also available for purchase through the pharmaceutical prime vendor.

### Recommended Dosing<sup>4</sup>:

Remdesivir is supplied in 100 mg vials for reconstitution and does not contain preservatives or a bacteriostatic agent. Any unused portion of a single-dose vial should be discarded after a diluted solution is prepared. Administer IV medication immediately after preparation when possible.

Dosing guidance provided in the FDA approval document ([Prescribing Information](#)) recommends the following:

- Adults and pediatric patients >40 kg:
  - Single loading dose of 200 mg IV on day 1, then 100 mg IV daily from day 2 infused over 30-120 minutes
- Pediatric patients weighing 3.5 kg to less than 40 kg:
  - Single loading dose of 5 mg/kg IV on day 1, then 2.5 mg/kg once daily from day 2

Duration of therapy varies. In hospitalized patients, including those requiring mechanical ventilation and/or ECMO, the recommended total treatment duration with remdesivir is **10 days**. For non-hospitalized patients diagnosed with mild-to-moderate COVID-19 who are at high risk for progression to severe COVID-19, including hospitalization or death, the recommended total treatment duration is **3 days**.

#### **Efficacy<sup>5-8</sup>:**

##### **NIAD ACTT-1 Study in Subjects with Mild/Moderate and Severe COVID-19<sup>5</sup> – [published October 8, 2020](#)**

Design: Phase 3 adaptive, randomized, double-blinded, placebo-controlled trial launched in the U.S.  
Patients: 1063 adults hospitalized with mild, moderate, and severe COVID-19 and lung involvement  
1° Outcome: Faster time to recovery was reported for patients receiving remdesivir (10 vs. 15 days,  $p<0.001$ )

##### **Study GS-US-540-5774 in Subjects with Moderate COVID-19<sup>6</sup> – [published August 21, 2020](#)**

Design: Phase 3 multi-site, international, randomized, open-label trial in 15 countries including the U.S.  
Patients: 584 adults hospitalized for COVID-19 with pneumonia received placebo, 5- or 10-day durations  
1° Outcome: On day 11, 5-day course had better clinical status vs. placebo (OR 1.65,  $p=.02$ ); no differences in clinical status noted on day 11 between 10-day course and placebo ( $p=.18$ )

##### **Study GS-US-540-5773 in Subjects with Severe COVID-19<sup>7</sup> – [published May 27, 2020](#)**

Design: Phase 3 multi-site, international, randomized, open-label trial in 15 countries including the U.S.  
Patients: 397 adults hospitalized for COVID-19 with pneumonia received either 5- or 10-day durations  
1° Outcome: No difference in improvement on Day 14 between remdesivir durations (65% vs. 54%,  $p=0.014$ )

##### **Study GS-US-540-9012 in Non-Hospitalized Subjects with Mild-to-Moderate COVID-19 and at High Risk for Progression to Severe Disease<sup>8</sup> – [published December 22, 2021](#)**

Design: Phase 3 multi-site, randomized, double-blind, placebo-controlled trial.  
Patients: 562 non-hospitalized adults & children with mild-moderate COVID-19 received 3-day duration  
1° Outcome: Reduction of risk of hospitalization or death by day 28 (87% reduction, 0.7 vs 5.3%,  $p=0.008$ )

#### **Warnings and Precautions<sup>4</sup>:**

- *Hypersensitivity including infusion-related and anaphylactic reactions:* Hypersensitivity reactions have been observed during and following administration of remdesivir. Slower infusion rates, with a maximum infusion time of up to 120 minutes, can be considered to potentially prevent signs and symptoms of hypersensitivity. If signs and symptoms of a clinically significant hypersensitivity reaction occur, immediately discontinue administration of remdesivir and initiate appropriate treatment.
- *Increased risk of transaminase elevations:* Transaminase elevations have been observed in healthy volunteers and have also been reported in patients with COVID-19 who received remdesivir. Perform hepatic laboratory testing in all patients before starting remdesivir and while receiving remdesivir as clinically appropriate. Consider discontinuing remdesivir if ALT levels increase to greater than 10 times the upper limit of normal. Discontinue remdesivir if ALT elevation is accompanied by signs or symptoms of liver inflammation.
- *Risk of reduced antiviral activity when co-administered with chloroquine phosphate or hydroxychloroquine sulfate:* Co-administration of remdesivir and chloroquine phosphate or hydroxychloroquine sulfate is not recommended based on cell culture data demonstrating an antagonistic effect of chloroquine on the intracellular metabolic activation and antiviral activity of remdesivir.

#### **Adverse Reactions<sup>4</sup>:**

The most common adverse reactions (incidence greater than or equal to 5%, all grades) observed with treatment with remdesivir are nausea, ALT increased, and AST increased. Less common adverse reactions reported include hypersensitivity reactions, generalized seizure and rash. Information on IHS adverse reaction reporting to the FDA MedWatch program can be found on the [IHS Pharmacovigilance website](#).

#### **References:**

1. FDA News Release. January 21, 2022. [FDA Takes Actions to Expand Use of Treatment for Outpatients with Mild-to-Moderate COVID-19](#).
2. U.S. Food and Drug Administration. [Fact Sheet for Healthcare Providers](#). January 21, 2022.
3. U.S. Food and Drug Administration. [Emergency Use Authorization of remdesivir \(Veklury\)](#). January 21, 2022.
4. VEKLURY (remdesivir). January 2022. [Prescribing Information](#). Gilead Sciences, Inc. Foster City, CA. 94404.
5. Beigel JH, Tomashek KM, et al. [Remdesivir for the treatment of COVID-19 – Final Report](#). NEJM. Published October 8, 2020.
6. Spinner CD, Gottlieb RL, et al. [Effect of Remdesivir vs Standard Care on Clinical Status at 11 Days in Patients With Moderate COVID-19](#). JAMA. 2020; 324(199): 1048-1057.
7. Goldman JD, Lye DC, et al. [Remdesivir for 5 or 10 days in patients with severe COVID-19](#). NEJM. Published May 27, 2020.
8. Gottlieb RL, Vaca CE, et al. [Early Remdesivir to Prevent Progression to Severe COVID-19 in Outpatients](#). NEJM. Published Dec 22, 2021.