Remdesivir FAQs

What is Remdesivir?

Remdesivir is an intravenous (IV) nucleoside analogue that works against SARS-CoV(s) by inhibiting viral replication. Remdesivir is a prodrug converted to an active form once administered and exerts activity by binding to the viral enzyme, RNA-dependent RNA polymerase. Remdesivir is FDA-approved for the treatment of adult and pediatric patients, at least 28 days old and 3kg, with confirmed mild to moderate COVID-19 who are at high risk of serious illness, as well as for hospitalized patients who require supplemental oxygen.

Who is eligible for Outpatient IV Remdesivir?

Eligibility for outpatient IV remdesivir will be determined by Infectious Diseases and prioritized for symptomatic patients who are at high risk for progression to severe COVID-19 who have contraindications to nirmatrelvir/ritonavir (Paxlovid). Patients must be able to return for consecutive days of therapy. Additional eligibility will be considered for immunosuppressed patients with persistent SARS-CoV-2 infection characterized by persistent/progressive respiratory symptoms and prolonged viral shedding. Decisions regarding treatment will be contingent on available slots for infusion.

Eligible patients:

- For treatment of outpatients with mild-moderate COVID-19
    - Must be 18 years or older AND
    - Have a positive SARS-CoV-2 test AND
    - At high risk for severe COVID-19 AND
    - Are within 7 days of symptom onset AND
    - Ineligible for Paxlovid (either of the following)
        - Contraindicating drug-drug-interaction
        - Unable to take PO

    OR

- FHCC patient with persistent COVID-19 infection characterized by prolonged viral shedding (PCR positivity > 30 days) and persistent/progressive respiratory symptoms but not requiring hospitalization
    - Regardless of time from symptom onset or history of prior treatment
    - Pre-transplant OR Pre-CAR-T cell therapy patients with minimal symptoms and persistent viral shedding may be considered on a case-by-case basis

Situations ineligible for Remdesivir:

- For pre-exposure or post-exposure prophylaxis for prevention of COVID-19
- Unable to return for consecutive days of therapy

Is Remdesivir FDA-approved?

Yes

What are the data supporting the use of Remdesivir?

Two large randomized controlled trials, the Adaptive COVID19 Treatment Trial (ACTT-1) and a phase 3 randomized, double-blind placebo-controlled trial to evaluate the efficacy and safety of remdesivir treatment of COVID-19 in an outpatient setting (PINETREE) enrolled 1062 and 562 patients respectively [1,2]. ACTT-1 found a 10-day course of remdesivir significantly reduced time to clinical recovery among hospitalized patients compared to placebo [1]. PINETREE found a 3-day course of remdesivir decreased hospitalization or death among high-risk outpatients by 87% compared to placebo [2]. Both trials enrolled with symptomatic subjects not vaccinated against SARS-CoV-2 who had laboratory confirmed infection and symptom onset within 7 days of randomization. Among outpatients receiving remdesivir, the number needed to treat to prevent hospitalization is 28 [3]. Hematologic malignancy, HCT and IEC were not well represented in these initial studies, limiting extrapolation of benefit. However, there are emerging data that remdesivir may benefit this vulnerable patient population [4]. It is unknown whether Remdesivir will improve time to symptom recovery or viral clearance among outpatients.

What are side effects of Remdesivir?

Remdesivir was well-tolerated in phase 3 clinical trials. The most common adverse effects reported were: nausea (11%), and headache (6%) [2]. Laboratory abnormalities including increased serum creatinine and transaminases have been reported but are low in frequency, 6% and 2% respectively in ACTT-1, and generally reversable [1]. Another adverse effect to note is the possibility of infusion and hypersensitivity reactions. Slower infusion rates, up to 120 minutes, may prevent hypersensitivity. Should signs or symptoms of a clinically significant hypersensitivity reaction occur, the infusion should be discontinued, and supportive medications administered. The therapy plan includes emergency medications for hypersensitivity reactions.

If a patient experiences a serious side effect, the FDA must be notified by filling out an online form.

Are there drug-drug interactions or contraindications with Remdesivir?

- No drug interactions have been identified based on the current available data.
- Remdesivir should be avoided in cases of significant hepatic dysfunction: AST/ALT ≥ 10x the upper limit of normal. If there are no recent LFTs, LFTs should be drawn on day of administration (1st dose may be given prior to labs resulting).
- Remdesivir is combined with sulfylbutyl-β-cyclodextrin (SBECD) as a solubilizing agent for IV administration. SBECD is known to accumulate in cases of renal dysfunction.
    - SBECD has been safely administered to patients at limited doses, with renal failure
    - Given the limited dose and time-course of exposure, renal failure or dysfunction is NOT a contraindication to receipt of remdesivir

What are the risks for child-bearing and/or pregnant individuals?

Published pregnancy registry data (N = 85) demonstrated remdesivir was well-tolerated and associated with limited side effects [5]. The most common adverse drug effect in pregnant individuals has been elevated transaminases [6].

What is the dose and duration of Remdesivir?

Remdesivir is administered as a 200mg IV dose on day 1 followed by 100mg IV daily L 3 to 10 days. The duration of remdesivir treatment wil be determined in conjunction with Infectious Diseases. The duration of infusion is 30 minutes for both loading and subsequent maintenance doses. There are no dose adjustments necessary for hepatic or renal dysfunction.

How will Remdesivir be ordered and scheduled?

Adjudication of eligibility for IV remdesivir will be assessed by the Infectious Diseases service. Orders can be placed by the primary service using the FHCC OP Remdesivir supportive care plan but will require discussion and prior approval by Infectious Diseases.

Additional information:

Product Package Insert:
https://www.gilead.com/-/media/files/pdfs/medicines/covid-19/veklury/veklury_pi.pdf

NIH guidelines for treatment:
https://www.covid19treatmentguidelines.nih.gov/management/clinical-management/nonhospitalized-adults--therapeutic-management/

References

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3. Lee TC, Morris AM, Grover SA, Murthy S, McDonald EG. Outpatient therapies for COVID-19: How do we choose? Open Forum Infect Dis 2022; 9(3). https://doi.org/10.1093/ofid/ofac008
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