Antiviral Drugs That Are Approved, Authorized, or Under Evaluation for the Treatment of COVID-19

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Summary Recommendations

Remdesivir is the only antiviral drug that is approved by the Food and Drug Administration (FDA) for the treatment of COVID-19. Ritonavir-boosted nirmatrelvir (Paxlovid), molnupiravir, and certain anti-SARS-CoV-2 monoclonal antibodies (mAbs) have received Emergency Use Authorizations from the FDA for the treatment of COVID-19.

This section focuses on the COVID-19 Treatment Guidelines Panel's (the Panel) recommendations for using small-molecule antiviral drugs to treat COVID-19. These recommendations are based on the available data. For recommendations and information regarding the use of anti-SARS-CoV-2 mAbs, see Anti-SARS-CoV-2 Monoclonal Antibodies.

Recommendations for Treating Nonhospitalized Adults

- The Panel recommends the following anti-SARS-CoV-2 therapies as preferred treatments for COVID-19. These drugs are listed in order of preference:
  - Ritonavir-boosted nirmatrelvir (Paxlovid) (AIIa)
  - Remdesivir (BIIa)

- The Panel recommends the following anti-SARS-CoV-2 therapies as alternative treatments for COVID-19. These drugs should ONLY be used when neither of the preferred treatments are available, feasible to use, or clinically appropriate. These drugs are listed in alphabetical order:
  - Bebetelovimab (CIII)
  - Molnupiravir (CIIa)

- The Panel recommends against the use of molnupiravir for the treatment of COVID-19 in pregnant patients unless there are no other options and therapy is clearly indicated (AIII).

- See Therapeutic Management of Nonhospitalized Adults With COVID-19 for detailed recommendations.

Recommendations for Treating Nonhospitalized Children

- See Therapeutic Management of Nonhospitalized Children With COVID-19 for the Panel's recommendations on the use of antiviral therapy in nonhospitalized children according to age and the risk for progression to severe COVID-19.

Recommendations for Treating Hospitalized Patients

- See Therapeutic Management of Hospitalized Adults With COVID-19 and Therapeutic Management of Hospitalized Children With COVID-19 for the Panel's recommendations on using remdesivir with or without immunomodulators in certain hospitalized patients.

Antiviral Drugs That the Panel Recommends Against

- The Panel recommends against the use of the following drugs for the treatment of COVID-19, except in a clinical trial:
  - Interferons for nonhospitalized patients (AIIa)
  - Interferon alfa or lambda for hospitalized patients (AIIa)
  - Ivermectin (AIIa)
  - Nitazoxanide (BIIa)

- The Panel recommends against the use of the following drugs for the treatment of COVID-19:
  - Chloroquine or hydroxychloroquine and/or azithromycin for hospitalized (AI) and nonhospitalized patients (AIIa)
  - Lopinavir/ritonavir and other HIV protease inhibitors for hospitalized (AI) and nonhospitalized patients (AIII)
  - Systemic interferon beta for hospitalized patients (AI)
Antiviral Therapy

Because SARS-CoV-2 replication leads to many of the clinical manifestations of COVID-19, antiviral therapies are being investigated for the treatment of COVID-19. These drugs prevent viral replication through various mechanisms, including blocking SARS-CoV-2 entry, inhibiting the activity of SARS-CoV-2 3-chymotrypsin-like protease (3CLpro) and RNA-dependent RNA polymerase (RdRp), and causing lethal viral mutagenesis.\(^1\)\(^-\)\(^3\) Because viral replication may be particularly active early in the course of COVID-19, antiviral therapy may have the greatest impact before the illness progresses to the hyperinflammatory state that can characterize the later stages of disease, including critical illness.\(^4\) For this reason, it is necessary to understand the role of antiviral medications in treating mild, moderate, severe, and critical illness in order to optimize treatment for people with COVID-19.

The following sections describe the underlying rationale for using different antiviral medications, provide the COVID-19 Treatment Guidelines Panel’s recommendations for using these medications to treat COVID-19, and summarize the existing clinical trial data. Additional antiviral therapies will be added to this section of the Guidelines as new evidence emerges.

References

3. Remdesivir (Veklury) [package insert]. Food and Drug Administration. 2022. Available at: [https://www.accessdata.fda.gov/drugsatfda_docs/label/2022/214787Orig1s015lbl.pdf](https://www.accessdata.fda.gov/drugsatfda_docs/label/2022/214787Orig1s015lbl.pdf).