

What's New in the Guidelines

Last Updated: July 30, 2020

The *Coronavirus Disease 2019 (COVID-19) Treatment Guidelines* is published in an electronic format that can be updated in step with the rapid pace and growing volume of information regarding the treatment of COVID-19.

The COVID-19 Treatment Guidelines Panel (the Panel) is committed to updating this document to ensure that health care providers, patients, and policy experts have the most recent information regarding the optimal management of COVID-19 (see the [Panel Roster](#) for a list of Panel members).

New Guidelines sections and recommendations, and updates to existing Guidelines sections are developed by working groups of Panel members. All recommendations included in the Guidelines are endorsed by a majority of Panel members (see the [Introduction](#) for additional details on the Guidelines development process).

Major revisions to the Guidelines within the last month are as follows:

July 30, 2020

[Corticosteroids](#)

The recommendations in this section have been updated to allow the use of alternative corticosteroids (i.e., hydrocortisone, methylprednisolone, prednisone) in situations where dexamethasone may not be available. In addition, the results of the RECOVERY trial were updated based on data reported in a recently published paper.

[General Considerations](#) (*Care of Critically Ill Patients with COVID-19*)

The Goals of Care subsection has been expanded to include information on advance care planning, with emphasis on the importance of identifying surrogate decision makers for critically ill patients with COVID-19.

July 24, 2020

[Remdesivir](#)

The recommendations for using remdesivir to treat COVID-19 have been revised to account for the patient's supplemental oxygen requirements and the mode of oxygen delivery. In this revision, patients who require supplemental oxygen are divided into two groups:

- Those who require supplemental oxygen **but not** high-flow oxygen, noninvasive or invasive mechanical ventilation, or extracorporeal membrane oxygenation (ECMO); *and*
- Those who require high-flow oxygen, noninvasive or invasive mechanical ventilation, or ECMO.

Previously, the COVID-19 Treatment Guidelines Panel (the Panel) recommended using remdesivir for patients who were on high-flow oxygen, mechanical ventilation, or ECMO. This recommendation has been revised due to uncertainty regarding whether starting remdesivir confers clinical benefit in these patients.

The revised recommendations are as follows:

Recommendation for Prioritizing Limited Supplies of Remdesivir

- **Because remdesivir supplies are limited, the Panel recommends that remdesivir be prioritized for use in hospitalized patients with COVID-19 who require supplemental oxygen but who are**

not on high-flow oxygen, noninvasive ventilation, mechanical ventilation, or ECMO (BI).

Recommendation for Patients with COVID-19 Who Are on Supplemental Oxygen but Who Do Not Require High-Flow Oxygen, Noninvasive or Invasive Mechanical Ventilation, or ECMO

- The Panel recommends using **remdesivir** for 5 days or until hospital discharge, whichever comes first (**AI**).
- If a patient who is on supplemental oxygen while receiving remdesivir progresses to requiring high-flow oxygen, noninvasive or invasive mechanical ventilation, or ECMO, the course of remdesivir should be completed.

Recommendation for Patients with COVID-19 Who Require High-Flow Oxygen, Noninvasive Ventilation, Mechanical Ventilation, or ECMO

- Because there is uncertainty regarding whether starting remdesivir confers clinical benefit in these groups of patients, the Panel cannot make a recommendation either for or against starting remdesivir.

July 17, 2020

Key Updates to the Guidelines

Remdesivir

In situations where remdesivir supplies are limited, the Panel recommends prioritizing **remdesivir** for use in hospitalized patients with COVID-19 who require supplemental oxygen but who are not mechanically ventilated or on extracorporeal membrane oxygenation (**BI**). The overall recommendations for the use of remdesivir are being revised and will be updated soon.

Corticosteroids (Including Dexamethasone)

The Corticosteroids (Including Dexamethasone) section is a new subsection of [Immunomodulators Under Evaluation for Treatment of COVID-19](#). This new section is based on the Recommendations for Dexamethasone in Patients with COVID-19 section that was released on June 25, 2020. The Panel continues to recommend the use of **dexamethasone** in patients who are mechanically ventilated (**AI**) and in patients who require supplemental oxygen but who are not mechanically ventilated (**BI**). The new Corticosteroids (Including Dexamethasone) section also discusses the clinical data on the use of other corticosteroids in patients with COVID-19, the potential adverse effects of corticosteroids, other considerations when using corticosteroids, and recommendations for the use of dexamethasone in pregnant patients.

New Sections of the Guidelines

Mesenchymal Stem Cells

A new subsection on mesenchymal stem cells was added to Immune-Based Therapy in the Blood-Derived Products Under Evaluation for the Treatment of COVID-19 section. The Panel **recommends against** the use of **mesenchymal stem cells** for the treatment of COVID-19, except in a clinical trial (**AII**).

Adjunctive Therapy: Vitamin C, Vitamin D, and Zinc Supplementation

Vitamin and mineral supplements have been promoted for the treatment and prevention of respiratory viral infections; however, their roles in treating COVID-19 are yet unproven. Three new sections were added to the guidelines to discuss the proposed rationale for the use of vitamin C, vitamin D, and zinc supplements.

Special Considerations in Solid Organ Transplant, Hematopoietic Stem Cell Transplant, and Cellular Therapy Candidates, Donors, and Recipients

Solid organ transplant, hematopoietic stem cell transplant, and cellular therapy donors and recipients are at risk of complications associated with COVID-19. This new section provides recommendations for

screening transplant candidates and donors for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection before donation and transplant. Clinicians should follow the guidelines for evaluating and managing COVID-19 in nontransplant patients when treating transplant and cellular therapy recipients (**AIII**). In this section, the Panel also emphasizes the importance of consulting a transplant specialist and reviewing concomitant medications for drug-drug interactions and overlapping toxicities.

Other Updates to the Guidelines

Introduction

The Panel has expanded the explanation of the types of recommendation statements used in the guidelines.

Overview of COVID-19: Epidemiology, Clinical Presentation, and Transmission

The section has been updated with recent epidemiologic data on COVID-19 in the United States. Emerging evidence suggests that racial and ethnic minorities in the United States experience higher rates of COVID-19 and subsequent hospitalization and death.

Prevention and Prophylaxis of SARS-CoV-2 Infection

This section discusses general prevention measures for reducing the risk of acquisition and transmission of SARS-CoV-2, the types of vaccines that are currently being studied, and the drug therapies that are being investigated for pre-exposure and post-exposure prophylaxis.

Hydroxychloroquine Plus Azithromycin

New clinical data from a large, retrospective, observational study have been added to this section and Table 2A. There is no change to the Panel's recommendation.

Lopinavir/Ritonavir and Other HIV Protease Inhibitors

New data on lopinavir/ritonavir pharmacokinetics in patients with COVID-19 and new data on combination therapy with lopinavir/ritonavir plus interferon beta-1b plus ribavirin for the treatment of COVID-19 have been added to this section and Table 2A. There is no change to the Panel's recommendation.

Blood-Derived Products Under Evaluation for the Treatment of COVID-19

New clinical data have been added to the [Convalescent Plasma](#) section. A new section has been created for SARS-CoV-2-specific immunoglobulins. There are no changes to the Panel's recommendations.

Immunomodulators Under Evaluation for the Treatment of COVID-19

New clinical data for interferon beta-1b were added to the [Interferons \(Alfa, Beta\)](#) section, and the Panel changed the recommendation for interferons: The Panel **recommends against** the use of interferons for the treatment of severe and critically ill COVID-19 patients, except in a clinical trial (**AIII**). There are insufficient data to recommend either for or against the use of **interferon-beta** for the treatment of early (<7 days from symptom onset) mild and moderate COVID-19.

The [Kinase Inhibitors](#) section was expanded to include additional Janus kinase (JAK) inhibitors and to include Bruton's tyrosine kinase (BTK) inhibitors. The Panel **recommends against** the use of **BTK inhibitors** and **JAK inhibitors** for the treatment of COVID-19, except in a clinical trial (**AIII**).