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Update Recommendations for the Management of COVID-19 in Patients with Haematological Malignancies

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In the years following the pandemic, the patterns of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) morbidity and mortality have continued to shift; however, coronavirus disease 2019 (COVID-19) pneumonia remains a significant clinical concern for vulnerable patient groups, especially patients with haematological malignancies and those undergoing haematopoietic cell transplantation (HCT). For individuals with haematological malignancies, reliable and rapid diagnosis remains essential. Molecular assays — particularly reverse transcription polymerase chain reaction (RT-PCR) performed on nasopharyngeal or combined naso-oropharyngeal samples — continue to represent the diagnostic gold standard due to their superior sensitivity and specificity (1).

For symptomatic individuals, timely initiation of antiviral therapy such as nirmatrelvir/ritonavir or remdesivir is strongly recommended to prevent clinical deterioration. In severe patients, corticosteroids or cytokine inhibitors (anti-interleukin-6, Janus kinase inhibitor) are recommended, together with supportive therapy. However, caution should be exercised in immunocompromised patients. Repeated courses, prolonged administration, and a combination of antivirals are considered for patients with failure to respond to antiviral therapy; however, current evidence supporting such an approach remains limited. Clinical judgment should guide decision-making, with careful consideration of comorbidities and individual patient risk factors. In certain high-risk cases, antiviral therapy may also be considered for asymptomatic patients who test positive for SARS-CoV-2. Deferral of intensive chemotherapy or T-cell depleting conditioning regimens is considered for patients with COVID-19, while decisions regarding deferring treatment for asymptomatic patients with SARS-CoV-2 infection are made on a case-by-case basis (1-3).

Assessment of disease severity is typically based on the World Health Organization (WHO) criteria for COVID-19. Immunocompromised individuals, particularly those receiving antirheumatic agents or other immune-modulating medications, remain at elevated risk for severe disease and require more careful monitoring (4).

Essential considerations in managing COVID-19 among immunocompromised individuals include:

What are the recommended approaches for treating immunocompromised patients with mild, moderate, or severe COVID-19?

- Standard initial therapy consists of nirmatrelvir/ritonavir or remdesivir for mild or moderate cases, as well as monoclonal antibodies when effective against the circulating variant in high-risk individuals.

- Prolonged and/or combination therapy may also be utilized in high-risk patients who demonstrate signs of persistent viral infection.

- Similar therapeutic considerations apply to patients with moderate or severe disease.

When should immunocompromised COVID-19 patients be hospitalized?

When should isolation be discontinued for immunocompromised patients?

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How should moderate or severe COVID-19 be managed in previously healthy individuals? (3)

What is the recommended management for solid organ transplant (SOT) candidates who test positive for SARS-CoV-2?

- Patients with mild COVID-19 or asymptomatic patients who test positive for SARS-CoV-2 typically do not require antiviral therapy and may remain on the active transplant waiting list, while receiving antiviral therapy.

- For candidates with moderate or severe COVID-19 — regardless of whether they are symptomatic — the decision to proceed with transplantation should account for the complexity of the surgical intervention and the degree of clinical improvement. The SOT candidates with confirmed SARS-CoV-2 infection should have decisions made in the context of each institution's available resources, clinical protocols, and technical capabilities, on a case-by-case basis.

What are the appropriate management strategies for immunocompromised patients presenting with moderate or severe COVID-19? Combination antiviral therapy may be considered in selected high-risk or complex cases; however, current evidence supporting such an approach remains limited. Clinical judgment should guide decision-making, with careful consideration of comorbidities and individual patient risk factors.

When should isolation precautions be continued or discontinued? For immunocompromised patients, decisions related to ending isolation precautions should be made in consultation with infectious disease specialists (1).

How should SARS-CoV-2-positive candidates planned for HCT be managed?

- Asymptomatic individuals with a positive SARS-CoV-2 test may proceed with HCT if appropriate antiviral treatment is administered and the transplant team approves the plan.

- For patients with moderate or severe COVID-19 who are scheduled for HCT, transplantation should be deferred until at least 48 hours after complete resolution of all symptoms (1).

When can chemotherapy be restarted after COVID-19 in cancer patients?

- Patients with aggressive malignancies who have asymptomatic or mild COVID-19 may continue planned chemotherapy.

- Those receiving targeted therapies or immune-based treatments may also proceed if the potential risk of complications is low.

- In all other situations, chemotherapy should be postponed for up to seven days following full symptom resolution (1, 5).

The Omicron variant of SARS-CoV-2 quickly emerged as the predominant global strain because of its exceptional transmissibility and extensive spike-protein mutations. While it generally causes milder illness in the broader population, its consequences for immunocompromised groups remain considerable. Reduced vaccine responsiveness, extended viral shedding, and a higher likelihood of persistent infection make the Omicron variant especially challenging to manage in these vulnerable populations (5).

In Iran, managing COVID-19 is further complicated by restricted financial resources and limited availability of antiviral drugs and monoclonal antibodies. These limitations require physicians to make individualized treatment decisions and prioritize patients at the highest risk. Customized, context-specific strategies are crucial to providing optimal care for immunocompromised individuals under local healthcare constraints (Latest Iranian COVID-19 guideline (6)).

Footnotes

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