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BRIEF REVIEW

Sotrovimab: Neutralizing Antibody to Combat COVID-19

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Sotrovimab is a new therapeutic agent to attenuate COVID-19. It is considered a welcome pharmaceutical preparation in light of SARS-CoV-2 variants, such as Omicron. Some other monoclonal antibody medications have low effectiveness at blocking Omicron's SARS-CoV-2 cell access. Sotrovimab fills an important therapeutic niche for victims of Omicron infection and is indicated for anyone with medical contraindications to vaccines, persons with serious comorbidities, and immunocompromised persons with suboptimal response to vaccines, and it may be especially helpful with the emergence of variant viral infections that evade vaccine- or illness-derived immunity.[1, 2] Sotrovimab reduces the risk of disease progression among high-risk patients with mild-to-moderate COVID-19.[3] Sotrovimab may also reduce the percentage of patients who require oxygen.[4] It seems that sotrovimab is a better choice for dealing with severe or non-severe COVID-19 patients.[5] Hopefully, it will provide high efficacy to patients with early COVID-19, minimizing hospitalizations, morbidity, mortality, and/or healthcare system overload.

On May 26, 2021, this monoclonal antibody therapy received emergency use authorization, which allows medical personnel to administer sotrovimab. This pharmaceutical binds to a preserved epitope on the spike protein of SARS-CoV-2. Its exact mechanism of action is unknown, but it appears to prevent membrane fusion after the virus binds to the angiotensin-converting enzyme-2 receptor, thus preventing cell entry by the virus. Prescribed only early in mild to moderate COVID-19 disease, it is for patients over age 12 years, weighing at least 40 kg. Recipients should be those who test positive for SARS-CoV-2 and are at high risk of progressing to severe complications and/or hospitalization.[6, 7] It is delivered by a single 500 mg intravenous infusion.[2]

Monoclonal antibodies may be associated with worse clinical outcomes when provided to sick patients with serious COVID-19 conditions requiring high-flow oxygen or mechanical ventilation. Sotrovimab is to be dispensed in a setting where hypersensitivity reactions, such as anaphylaxis, can be safely managed. Clinical status is monitored during the infusion and ought to be observed for at least one hour afterward.[2]

Sotrovimab can overcome viral replication and be directed against receptor-binding domain epitopes that are conserved among SARS-CoV-2 variants and other sarbecoviruses. Hopefully, sotrovimab will remain therapeutically active as SARS-CoV-2 Omicron continues to evolve and for infections from the current wave of illness. The drug concentration required to diminish viral replication by half was about three times higher for Omicron than for certain other coronavirus variants.[8] Although the neutralizing activity of sotrovimab against Omicron is present, the loss of activity of some other monoclonal antibody drugs remains a concern; therefore the development of even newer monoclonal antibody modalities is needed.

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