

Tocilizumab for hospitalized patients with COVID-19

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1 Tocilizumab is an immunomodulatory drug that blocks the activity of interleukin-6 (IL-6)

Many patients with severe coronavirus disease 2019 (COVID-19) have immune misfiring characterized by a defective interferon response followed by elevated inflammatory cytokines, notably IL-6.¹ Tocilizumab is a monoclonal IL-6 receptor antibody that is approved for use in inflammatory conditions.²

2 Tocilizumab reduces mortality in patients with severe-to-critical COVID-19

Two large randomized controlled trials evaluating tocilizumab in patients with COVID-19 in hospital have been conducted. The Randomized, Embedded, Multifactorial Adaptive Platform Trial for Community-Acquired Pneumonia (REMAP-CAP) involving patients who were critically ill found that tocilizumab was superior to standard of care for 21-day mortality and organ support-free days.³ In-hospital mortality was 28.0% in the tocilizumab group versus 35.8% in the standard-of-care group (number needed to treat [NNT] = 12). The preprint publication of the Randomised Evaluation of COVID-19 Therapy (RECOVERY) trial showed that tocilizumab improved 28-day mortality: 29.5% of patients in the tocilizumab group died versus 33.1% in the standard-of-care group (NNT = 27).⁴ This benefit is additive to the benefit of corticosteroids.

3 Hospitalized patients with COVID-19 who are not critically ill also benefit from tocilizumab

Patients in the RECOVERY trial were eligible for treatment with tocilizumab if they had hypoxia (oxygen saturation < 92% on room air or requiring supplemental oxygen) and systemic inflammation (C-reactive protein \geq 75 mg/L). Benefits of tocilizumab appeared consistent in this trial across all levels of initial respiratory support.⁴

4 Tocilizumab should be given early to eligible patients

Patients who are eligible for tocilizumab should not have treatment delayed. Both RECOVERY and REMAP-CAP, the only trials to show mortality benefit, administered tocilizumab in the early stages of hospital admission (median 1–2 d).^{3,4}

5 Tocilizumab appears to be safe for the treatment of COVID-19

Hypersensitivity, cytopenias, hepatic injury and gastrointestinal perforation are notable adverse effects of tocilizumab but have been uncommon in COVID-19 trials. However, patients with an aminotransferase level 5 times the upper limit of normal or a platelet count of less than $50 \times 10^9/L$ were excluded from the REMAP-CAP trial.³

References

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