

INFORMING PRACTICE

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Is Methylprednisolone Better than Dexamethasone for Severe COVID-19?

Daniel D. Dressler, MD, MSc, MHM, FACP,
reviewing *Ranjbar K et al. BMC Infect Dis 2021*
Apr 10

In a randomized trial, patients who received methylprednisolone had better outcomes.

Dexamethasone prevents some deaths among hypoxemic patients with COVID-19 ([NEJM JW Gen Med Aug 15 2020](#) and *N Engl J Med* 2021; 384:693). However, methylprednisolone achieves higher lung tissue concentrations than dexamethasone, raising questions about whether it would be more effective. Iranian investigators randomized 86 adults with confirmed SARS-CoV-2 infection who were hospitalized (with oxygen saturation $\leq 92\%$ on room air) to receive either intravenous methylprednisolone (2 mg/kg daily dose tapered after 5 days; total dosing, 10 days) or intravenous dexamethasone (6 mg daily for 10 days). Patients and investigators were blinded to drug assignments.

Based on the WHO's Ordinal Scale for Clinical Improvement ([OSCI](#)), patients who received methylprednisolone had significantly greater clinical improvement than patients who received dexamethasone. Methylprednisolone patients

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also had significantly lower ventilator requirements (18% vs. 38%; number needed to treat, 5), significantly shorter hospital length of stay (3 days fewer), and a trend toward lower mortality (19% vs. 38%; NNT, 6; $P=0.076$), compared with dexamethasone patients.

COMMENT

We're now seeing fewer and fewer patients admitted with severe COVID-19, but some patients with severe disease still could benefit from this adjusted approach to steroid therapy. Although it's not clear if these study results are due to the type of steroid and its improved lung penetration or to the higher relative dose of methylprednisolone prescribed, this approach could be considered in patients with severe COVID-19.

CITATION(S):

Ranjbar K et al. Methylprednisolone or dexamethasone, which one is superior corticosteroid in the treatment of hospitalized COVID-19 patients: A triple-blinded randomized controlled trial. *BMC Infect Dis* 2021 Apr 10; 21:337. (<https://doi.org/10.1186/s12879-021-06045-3>)

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