

Dexamethasone and Oxygen Support Strategies for COVID-19 Hypoxaemic Respiratory Failure



Acute hypoxaemic respiratory failure (AHRF) is one of the main manifestations of severe COVID-19. The RECOVERY trial showed that dexamethasone 6 mg/d for ten days reduced 28-day mortality in patients with the most severe COVID-19. Another study described the benefit of high-dose dexamethasone in ARDS. However, Munch et al. found no difference between high-dose and low-dose dexamethasone on 28-day mortality. Hence, the matter remains unclear. Similarly, the advantages of high-flow nasal oxygen therapy (HFNO₂) and continuous positive airway pressure (CPAP) for managing COVID-19-related AHRF are still debated.

The COVIDICUS trial investigated the effects of high-dose vs low-dose dexamethasone on 60-day time to all-cause mortality in patients with COVID-19. The study also compared different oxygenation strategies, including high-flow nasal oxygen (HFNO₂) or continuous positive airway pressure (CPAP) vs standard oxygen support on 28-day time to fulfilling invasive mechanical ventilation (IMV) criteria in patients with COVID-19 and severe acute hypoxaemic respiratory failure (AHRF).

Nineteen ICUs in France participated in this trial, which included COVID-19 patients with AHRF. Study patients received standard dexamethasone for ten days or high-dose dexamethasone. Patients who did not require IMV were randomised to standard oxygen support, CPAP, or HFNO₂.

The primary outcome of the study was time to all-cause mortality at day 60 for dexamethasone and time to IMV requirement at day 28 for oxygen support. Five hundred and forty-six patients were included in the study, out of which 414 were randomised between standard dexamethasone or high-dose dexamethasone. Three hundred and thirty-three patients were randomised among standard oxygen therapy, CPAP and HFNO₂.

The study found no differences in the 60-day mortality based on the dexamethasone dose. Similarly, no significant difference was observed in the 28-day cumulative need for IMV based on oxygenation strategy. Hence, these findings show that in patients with COVID-19 and AHRF, high-dose dexamethasone or different oxygenation strategies had no major impact on mortality or requirement for IMV criteria.

Source: [JAMA](#)

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