ICU
MANAGEMENT & PRACTICE

Corticosteroids and Mortality in COVID-19 Patients

The use of corticosteroids to treat severe infections has been a controversy for quite a long time. Now, as we face the COVID-19 pandemic, clinical research on corticosteroids has received a significant push.

During the first six months of 2020, 55 studies of corticosteroids for the treatment of COVID-19 have been registered. The RECOVERY trial has reported its findings demonstrating that 6mg/d of dexamethasone resulted in an absolute reduction in mortality of 2.8%. The greatest benefit was observed in patients who were receiving invasive mechanical ventilation. Mortality was 29.3% for dexamethasone and 41.4% for usual care.

The Clinical Characterization and Management Working Group of the World Health Organization has developed a protocol for a meta-analysis of ongoing clinical trials. In this meta-analysis of randomised trials, the researchers investigated the association between corticosteroids and mortality and compared it with usual care or placebo in critically ill patients with suspected or confirmed COVID-19. The primary outcome was all-cause mortality up to 30 days after randomisation. The secondary outcome was serious adverse events.

Seven clinical trials were included in the final analysis. Patients were recruited from several countries including Australia, Brazil, Canada, China, Denmark, France, Ireland, the Netherlands, New Zealand, Spain, the UK and the US. Those in the corticosteroid group were prescribed dexamethasone, hydrocortisone and methylprednisolone. In total, 1703 patients were randomised out of which 678 received corticosteroids and 1025 received usual care or placebo.

There were 222 deaths in the corticosteroid group and 425 deaths in the usual care/placebo group. Absolute mortality risk was 32% with corticosteroids and 40% with usual care or placebo. Overall, administration of corticosteroids was associated with lower all-cause mortality at 28 days. There was no significant increase in the risk of serious adverse events in the corticosteroid group. Mortality rates were similar for both dexamethasone and hydrocortisone. The association between corticosteroids and lower mortality was stronger in patients who were not receiving vasoactive medications compared to those who were.

These findings suggest that unless there is a compelling contraindication, a corticosteroid regimen should be a component of standard care for critically ill COVID-19 patients. The researchers did not assess optimal dose and duration of treatment but there was no evidence to suggest that a higher dose of corticosteroids was associated with greater benefit as compared to a lower dose. It is important to note that the findings related to treatment of COVID-19 patients with corticosteroids is in contrast with those reported for patients with influenza, for whom both mortality and hospital-acquired infections increased by the administration of corticosteroids.

Source: JAMA

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