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LUNG ALERT

No mortality benefit seen with methylprednisolone in ARDS

▲ Steinberg KP, Hudson LD, Goodman RB, *et al*. The National Heart, Lung, and Blood Institute Acute Respiratory Distress Syndrome (ARDS) Clinical Trials Network. Efficacy and safety of corticosteroids for persistent acute respiratory distress syndrome. *N Engl J Med* 2006;**354**:1671–84

The use of corticosteroids in acute respiratory distress syndrome (ARDS) is controversial, with previous studies showing no benefit of high dose steroids in early ARDS but indicating a possible role for moderate doses in late ARDS (>7 days after its onset). This multicentre double blind trial randomised 180 intubated and mechanically ventilated patients 7–28 days after the onset of ARDS to receive either intravenous methylprednisolone or placebo. The primary outcome was mortality at 60 days, with secondary outcomes including ventilator-free days, days without organ failure, and infectious complications at 28 days.

There was no difference in mortality between the treatment and placebo groups at 60 days (29.2% v 28.6%) or 180 days (31.5% v 31.9%). If the patients had ARDS for longer than 14 days before enrolment, methylprednisolone was associated with increased mortality at 60 days (35% v 8%; $p = 0.02$). At 28 days the treatment group had more ventilator-free days (11.2 v 6.8; $p < 0.001$), more ICU-free days (8.9 v 6.2; $p < 0.02$), and fewer episodes of shock (6 v 17; $p = 0.003$), but they were more likely to have to resume assisted ventilation (20 v 6; $p = 0.008$). They also had higher glucose levels and more episodes of severe neuromyopathy (9 v 0; $p = 0.001$), although there was no difference in the rate of infectious complications.

From this evidence, it appears that the use of methylprednisolone in ARDS confers no survival benefit and may be harmful if initiated late. However, the reasons why initial improvements in cardiovascular and respiratory parameters are not translated into improved survival are unclear, and a better understanding of the mechanisms of ARDS may help to define an optimal time frame and regimen for corticosteroids in the disease.

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