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Dexamethasone in community-acquired pneumonia

Sabine Meijvis and colleagues (June 11, p 2023) investigated the role of adjuvant dexamethasone in community-acquired pneumonia. The primary outcome was median length of hospital stay, which was reported to be significantly shorter in the dexamethasone group (6·5 days) than in the placebo group (7·5 days).

However, Meijvis and colleagues do not show clinical or radiological cure rates with or without adjuvant dexamethasone therapy. In light of cure rates with or without adjuvant dexamethasone therapy, the placebo group (7·5 days).

We declare that we have no conflicts of interest.

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1 Meijvis SCA, Hardeman H, Remmelts HHF, et al. Dexamethasone and length of hospital stay in patients with community-acquired pneumonia: a randomised, double-blind, placebo-controlled trial. Lancet 2011; 377: 2023–30.

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In a double-blind, placebo-controlled trial, Sabine Meijvis and colleagues\(^1\) found clinical benefit of reduced length of hospital stay when dexamethasone was added to antibiotic treatment in immunocompetent patients with community-acquired pneumonia. However, of the 304 recruited cases, most had bacterial infections such as Streptococcus pneumoniae, and only seven (2·3%) were diagnosed as having influenza pneumonia (nine others (3·0%) had mixed influenza-bacterial infections, mostly S pneumoniae). As such, the results cannot be generalised to community-acquired pneumonia with viral causes.

Respiratory viruses are increasingly recognised as major causes of community-acquired pneumonia worldwide (up to about 20%),\(^2\) and influenza virus is the most important pathogen, causing excessive hospital admissions and deaths, particularly during the seasonal peaks and pandemics. Evidence suggests that corticosteroid use in influenza pneumonia cannot control excessive inflammation, but compromises the immune response, leading to longer viral shedding, secondary bacterial and fungal infections, and even increased mortality (webappendix).\(^3\),\(^4\) Controlled studies are needed to address the use of corticosteroids in viral pneumonia and its safety. Notably, in viral pneumonia caused by the coronavirus that causes severe acute respiratory syndrome, increased viral load has been documented with corticosteroid treatment in a randomised trial.\(^5\)

Given the differences in immuno-pathogenesis between viral and bacterial pneumonia, and the uncertainties in efficacy and safety,\(^4\) we recommend that corticosteroids should not be used routinely in known viral community-acquired pneumonia, especially influenza-related. In this regard, availability of rapid and reliable diagnostics for the causes of community-acquired pneumonia is important to guide antimicrobial treatments (targeted, susceptible antibacterials; or antivirals such as neuraminidase inhibitors), and the use of adjuvant corticosteroids.\(^3\),\(^4\)

We declare that we have no conflicts of interest.

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Sabine Meijvis and colleagues randomized a cohort of patients with community-acquired pneumonia to receive intravenous dexamethasone or placebo and showed a significantly reduced length of hospital stay with dexamethasone.

Meijvis and colleagues state that the decision to discharge a patient was left to the treating medical team. One of the criteria for discharge is body temperature—a measurement affected by systemic corticosteroids. The effect seen by Meijvis and colleagues could be the defervescence caused by the corticosteroids and not a true shortening of severity of disease. Additionally, we have found that a rebound fever can occur after cessation of dexamethasone, and this finding has been corroborated. No reference was made to duration in hospital and long-term follow-up of patients’ body temperature.

Moreover, dexamethasone could be detrimental. Non-steroidal anti-inflammatory drugs given before admission to the intensive-care unit for community-acquired pneumonia have been associated with a more severe hospital course. In Meijvis and colleagues’ study, the number of patients who had empyema was greater in the dexamethasone group, as was the length of stay in the intensive-care unit. Although these values are not significant statistically, they require attention before recommendations for the treatment of community-acquired pneumonia with corticosteroids are formalised.

Finally, the single case of gastric perforation, potentially caused by the trial drug, might be of greater significance if the beneficial effects of corticosteroids are in doubt. We declare that we have no conflicts of interest.

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