Methylprednisolone Infusion in Early Severe ARDS

It Is Pretty, But Is It Art?

To the Editor:

Despite the recent advances in the care of critically ill patients, ARDS is still a clinical condition associated with high mortality rates. In this clinical scenario, while most interventions to date have focused on the prevention of morbidity with ventilator-induced lung injury and pneumonia, no therapeutic intervention is indisputably associated with improved outcomes.

Corticosteroids have been used for the treatment of ARDS for the last 20 years; however, their benefits are still unproven. Discrepancy of results from clinical trials may be explained by different doses and duration of administration, as well as patient selection and an excess of morbidity imposed by steroid-related side effects. However, the recent study by Meduri and coworkers sheds some new light on ARDS pharmacotherapy by demonstrating clinical improvement based on possible immunomodulatory effects of the steroid infusion, thus hastening the resolution of lung injury and organ failures. Common aspects among all studies showing benefits of steroids were the use of relatively lower doses, early infusion, and the selection of an extremely severely ill population. Moreover, these “successful” prospective studies had also similar limitations, the foremost one being a relatively small sample size with limited power for the detection of important outcomes (e.g., hospital mortality). Therefore, these results must be viewed with caution because the morbidity burden associated with corticosteroids cannot be underestimated and a recent large multicenter clinical trial failed to show any significant improvement in the outcomes of patients with ARDS and severe sepsis (as disclosed by the results of the Corticosteroids Study).

In conclusion, we believe that corticosteroids cannot be widely recommended for critically ill patients. Although Dr. Meduri’s results are promising, a prospective multicenter trial is absolutely necessary before corticosteroids can be routinely recommended for the treatment of severe ARDS.

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The authors have no conflicts of interest to disclose.

The current state of the literature surrounding the value of glucocorticoids in ARDS is riddled with complexity and conflict. As such, we were surprised by the tone and conclusions of the editorial accompanying Dr. Meduri’s recently published study on the value of methylprednisolone infusion in early severe ARDS. There are significant and fundamental design issues surrounding this study (notably absent from the editorial) that make it difficult to draw definitive conclusions regarding the role of this agent. The patients were randomized in a 2:1 fashion in favor of methylprednisolone. The incidence of catecholamine-dependent shock in the placebo group was nearly twice that of the methylprednisolone group (46.4% vs 23.8%, p = 0.03), yet no clear analysis was presented controlling for this fact. Ten of the 15 control patients (67%) who remained on mechanical ventilation at day 9 received open-label methylprednisolone because their lung injury scores had not improved. The proportion of patients requiring mechanical ventilation at 28 days was not statistically different between the two groups. The likelihood of surviving the hospital admission was also not different between the two groups. Given the aforementioned problems with this study and the limited interpretability of the results (as well as recent recommendations by other important leaders in the field), we do not feel that the use of glucocorticoids can be promoted as a “standard of care” for patients with ARDS at this time.

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REFERENCES


Response

To the Editor:

Dr. Savel and colleagues correctly argue that recommendations for practice may not rely exclusively on the results of a