

LETTER

Authors' response

We thank Dr Wise and colleagues¹ for their thoughtful response to our work in chronic obstructive pulmonary disease patients with decompensated hypercapnic respiratory failure.² We believe that modest hyperglycaemia is a useful way of identifying patients at greatest risk of treatment failure with non-invasive ventilation, but we are more cautious than those correspondents in implicating corticosteroid use either acute or chronic as a major aetiological factor. Our study was clearly underpowered to exclude such an association but we did not see any trend towards a worse outcome in relationship to previous oral corticosteroid use. The issues reported in the patients with severe acute respiratory syndrome taking methylprednisolone are less likely to apply in our patients in whom the dose of systemic corticosteroids used to treat chronic obstructive pulmonary disease exacerbations is significantly lower than in the severe acute respiratory syndrome study or than that reported in the USA.^{3 4} Previous use of inhaled corticosteroids can be associated

with clinically diagnosed pneumonia, but hyperglycaemia was not an issue in that large trial nor is pneumonia incidence always increased by inhaled steroid use.^{5 6} The mechanisms suggested by which hyperglycaemia promotes lung infection are plausible but will be difficult to test in humans. Disappointingly, recent data suggest that tightly controlling hyperglycaemia in an intensive care unit setting is associated with worse rather than better outcomes, which support our view that this may be a marker of disease severity rather than a causal factor leading to a worse outcome.⁷

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REFERENCES

1. **Wise MP**, Brooks AP, Purcell-Jones MH, *et al*. Steroid-induced hyperglycaemia and pulmonary disease. *Thorax* Published Online First: 7 June 2010. doi:10.1136/thx.2009.132076
2. **Chakrabarti B**, Angus RM, Agarwal S, *et al*. Hyperglycaemia as a predictor of outcome during non-invasive ventilation in decompensated COPD. *Thorax* 2009;**64**:857–62.
3. **Davies L**, Angus RM, Calverley PM. Oral corticosteroids in patients admitted to hospital with exacerbations of chronic obstructive pulmonary disease: a prospective randomised controlled trial. *Lancet* 1999;**354**:456–60.
4. **Niewoehner DE**, Erbland ML, Deupree RH, *et al*. Effect of systemic glucocorticoids on exacerbations of chronic obstructive pulmonary disease. *N Engl J Med* 1999;**340**:1941–7.
5. **Calverley PM**, Anderson JA, Celli B, *et al*. Salmeterol and fluticasone propionate and survival in chronic obstructive pulmonary disease. *N Engl J Med* 2007;**356**:775–89.
6. **Sin DD**, Wu L, Anderson JA, *et al*. Inhaled corticosteroids and mortality in chronic obstructive pulmonary disease. *Thorax* 2005;**60**:992–7.
7. **NICE–SUGAR Study Investigators**. Intensive versus conventional glucose control in critically ill patients. *N Engl J Med* 2009;**360**:1283–97.