

Shorter courses of oral corticosteroids for the management of exacerbations in patients with COPD

Practice point

Prednisone 30 – 50 mg daily can be prescribed for five days for patients with acute moderate or severe exacerbations of chronic obstructive pulmonary disease (COPD).¹ Previously, 10 – 14 days of oral prednisone treatment was recommended, but recent literature has reported that five days of treatment is equally effective for both treating the current exacerbation and preventing subsequent exacerbations.^{2,3}

Tapering of corticosteroid treatment is not necessary for treatment periods of less than two weeks in patients with acute exacerbations of COPD.¹

The evidence

The Reduction in the Use of Corticosteroids in Exacerbated COPD (REDUCE) study reported that five days of corticosteroid treatment was clinically non-inferior to 14 days of corticosteroid treatment in patients with an acute exacerbation of COPD, seen at the emergency department in five hospitals in Switzerland.²

The high-quality, double-blind, non-inferiority study randomised 314 patients with an acute exacerbation of COPD to either five days (short) or 14 days (conventional) of prednisone 40 mg, daily.²



There were no significant differences found between patients receiving short or conventional courses in terms of overall survival, FEV₁, patient-assessed overall performance, quality of life, the need for mechanical ventilation or the use of additional corticosteroids to control symptoms.²

Patients who received five days of prednisone treatment were as likely to experience an exacerbation within the next six months (primary endpoint) as those who received 14 days of treatment (36% vs. 37% of patients; $p < 0.01$ for non-inferiority).² These results were consistent across all Global Initiative for Chronic Obstructive Lung Disease (GOLD) categories of disease severity, i.e. for stage I/II (mild/moderate), III (severe) and IV (very severe) disease.² In those patients who did experience a subsequent exacerbation, the median time to the re-exacerbation was longer in those who received five days of treatment compared to those who received 14 days treatment (44 vs. 29 days).²

Patients who received the five-day regimen were less likely to have new or worsening hypertension at discharge (12% vs. 18%), although this was not statistically significant.² The rates of other adverse events including infection and new or worsening hyperglycaemia at discharge were similar in patients in both treatment groups.²

A 2014 systematic review, which included the REDUCE study, also supported the use of shorter duration (less than seven days) oral corticosteroid treatment over longer duration (greater than seven days) in patients with exacerbations of COPD.³

The systematic review concluded that there were no significant differences between patients treated with shorter or longer durations of corticosteroids in regards to the rate of treatment failure, the time to the next exacerbation, the duration of hospital stay, lung function tests, adverse effects or death.³

References

1. Abramson M, Frith P, Yang I, et al. COPD-X concise guide for primary care. 2014. Available from: www.copdx.org.au (Accessed Jan, 2015).
2. Leuppi JD, Schuetz P, Bingisser R, et al. Short-term vs conventional glucocorticoid therapy in acute exacerbations of chronic obstructive pulmonary disease: the REDUCE randomized clinical trial. *JAMA* 2013;309:2223–31.
3. Walters JA, Tan DJ, White CJ, et al. Different durations of corticosteroid therapy for exacerbations of chronic obstructive pulmonary disease. *Cochrane Database Syst Rev* 2014;12:CD006897.



Diet and the risk of COPD

Relatively little is known about the influence diet has on COPD pathogenesis. A recent study used nutritional data collected from over 73 000 female nurses, between 1984 and 2000, and over 47 000 males, between 1986 and 1998, to correlate the quality of the participants diet with the likelihood of them being newly diagnosed with COPD.¹ It was found that a diet rich in whole grains, polyunsaturated and omega-3 fats and low in red and processed meats, refined grains, and sugar-sweetened drinks was associated with a reduced risk of COPD.¹ The negative association between a healthy diet and COPD persisted when smoking status and relative exposure to tobacco smoke were accounted for.¹ An association between a “Western” diet and specifically a high intake of cured and red meat had been previously noted by the same authors. This study adds strength to the hypothesis that diets rich in foods with high levels of antioxidants may provide a protective effect in the high-oxygen environment of the lung where inflammatory processes in patients with COPD lead to the proteolytic destruction of elastic fibres.

Reference

1. Varraso R, Chiuve SE, Fung TT, et al. Alternate Healthy Eating Index 2010 and risk of chronic obstructive pulmonary disease among US women and men: prospective study. *BMJ* 2015;350:h286–h286.

