

# Shorter duration steroid therapy may offer similar effectiveness in reducing COPD exacerbations

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Among patients with acute exacerbations of chronic obstructive pulmonary disease (COPD) requiring hospital admission, a 5-day glucocorticoid treatment course was non-inferior (not worse than) to a 14-day course with regard to re-exacerbation during 6 months of follow-up, according to a study published online by *JAMA*. The study is being released early online to coincide with its presentation at the American Thoracic Society international conference. The authors write that these findings support a shorter-course glucocorticoid treatment regimen, which would reduce glucocorticoid exposure and the risk of possible adverse effects.

"Acute exacerbations of COPD are a risk factor for disease deterioration, and [patients](#) with frequent exacerbations have an increased mortality," according to background information in the article.

"International guidelines advocate a 7- to 14-day course of systemic glucocorticoid therapy in acute exacerbations of COPD. However, the [optimal dose](#) and duration of therapy are unknown. ... Given the adverse effects of [glucocorticoids](#) and the potentially large number of exacerbations occurring in patients with COPD, glucocorticoid exposure should be minimized."

Jorg D. Leuppi, M.D., Ph.D., of the University Hospital of Basel, Switzerland, and colleagues conducted a study to examine whether a short-term (5 days) systemic glucocorticoid treatment in patients with

COPD exacerbation is noninferior to conventional (14 days) treatment with respect to clinical outcome and whether it decreases the exposure to steroids. The [randomized trial](#) (REDUCE) was conducted in 5 Swiss [teaching hospitals](#), enrolling 314 patients presenting to the [emergency department](#) with acute COPD exacerbation, past or present smokers without a history of asthma, from March 2006 through February 2011. Patients received treatment with 40 mg of [prednisone](#) daily for either 5 or 14 days in a placebo-controlled fashion. The predefined noninferiority criterion was an absolute increase in exacerbations of at most 15 percent. The primary measured outcome was time to next exacerbation within 180 days.

Of the 314 randomized patients, 289 (92 percent) of whom were admitted to the hospital, 311 were included in the intention-to-treat analysis and 296 in the per-protocol analysis. A total of 56 patients (35.9 percent) reached the primary end point of COPD exacerbation in the short-term treatment group compared with 57 patients (36.8 percent) in the conventional treatment group. Time to re-exacerbation did not differ between groups.

Among patients who experienced a re-exacerbation during follow-up, the median (midpoint) time to event was 43.5 days in the short-term group and 29 days in the conventional treatment group. Estimates of re-exacerbation rates were 37.2 percent in the short-term and 38.4 percent in the conventional treatment group.

"There was no difference between groups in time to death, the combined end point of exacerbation, death, or both and recovery of lung function. In the conventional group, mean (average) cumulative prednisone dose was significantly higher (793 mg vs. 379 mg), but treatment-associated adverse reactions, including hyperglycemia and hypertension, did not occur more frequently," the authors write.

During hospital stay, there was no increase in the requirement for mechanical ventilation with the short-term [treatment regimen](#).

"There was no significant difference in recovery of lung function and disease-related symptoms, but the shorter course resulted in a significantly reduced glucocorticoid exposure," the researchers write. "These findings support the use of a 5-day glucocorticoid treatment in acute exacerbations of COPD."

Don D. Sin, M.D., and Hye Yun Park, M.D., Ph.D., of the University of British Columbia James Hogg Research Centre and the Institute for Heart and Lung Health, St. Paul's Hospital, Vancouver, British Columbia, Canada, write in an accompanying editorial that "the clinical implications of this study are clear."

"Most patients with acute COPD exacerbations can be treated with a 5-day course of prednisone or equivalent (40 mg daily). Furthermore, this regimen can be applied across all GOLD (Global Initiative for Chronic Obstructive Lung Disease) categories of disease severity. This is welcome news for patients with COPD who experience multiple exacerbations annually and are exposed to repeated courses of systemic corticosteroids. These findings will enable clinicians to minimize steroid exposure and reduce the risk of steroid-related toxicity in these patients."

**More information:** [doi:10.1001/jama.2013.5023](https://doi.org/10.1001/jama.2013.5023) and [doi:10.1001/jama.2013.5644](https://doi.org/10.1001/jama.2013.5644)

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