

JOURNAL CLUB

Pneumonia and inhaled corticosteroids in COPD

Combination treatment with inhaled corticosteroids and long-acting β_2 -agonists decreases exacerbations and improves quality of life in patients with COPD; however, a potential concern is an increased risk of pneumonia. Although the TORCH and INSPIRE studies have shown the risk of pneumonia to increase with fluticasone/salmeterol versus placebo and tiotropium, there has been no direct comparison of fixed combinations of inhaled corticosteroids/long-acting β_2 -agonists.

The PATHOS study compared the occurrences of pneumonia and pneumonia-related events in patients with COPD treated with either fluticasone/salmeterol (Seretide) or budesonide/formoterol (Symbicort). This was an observational retrospective cohort study matched for propensity score comparing 2734 patients in each group. Two thousand one hundred and fifteen patients (39%) had at least one diagnosis of pneumonia during the study period. Compared with the budesonide/formoterol group, the rate of pneumonia and the rate of admission to hospital related to pneumonia were 73% and 74% higher in the fluticasone/salmeterol treatment group, giving a rate ratio of 1.73 and 1.74, respectively. When comparing fluticasone/salmeterol with budesonide/formoterol, the pneumonia event rate per 100 patient years was 11.0 versus 6.4. There were 97 deaths from pneumonia in the fluticasone/salmeterol group compared with 52 deaths in the budesonide/formoterol group, corresponding to a 76% increase in mortality. Furthermore, there was no dose-response relation with regard to risk of pneumonia with the two treatments, indicating that differences were due to the class of inhaled corticosteroids/long-acting β_2 -agonists and not the dose.

This study shows that the risks of pneumonia and pneumonia-related events are higher with fluticasone/salmeterol than with budesonide/formoterol in patients with COPD. This represents an intraclass difference between fixed combinations of inhaled corticosteroids/long-acting β_2 -agonists. Such differences may be related to differences in the immunosuppressant potencies between budesonide and fluticasone. Long-term randomised controlled trials would be beneficial to assess the extent of such intraclass differences put in context with the benefits of such regimens in preventing exacerbations.

► Janson C, Larsson K, Lisspers KH, *et al.* Pneumonia and pneumonia related mortality in patients with COPD treated with fixed combinations of inhaled corticosteroid and long acting β_2 agonist: observational matched cohort study (PATHOS). *BMJ* 2013;346:f3306.

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