Discontinuation of inhaled corticosteroids in COPD and the risk reduction of pneumonia

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ABSTRACT

Background: The widespread use of inhaled corticosteroids for COPD treatment has been questioned. Recent studies of weaning some COPD patients off inhaled corticosteroids found little or no loss in adverse consequences compared with long-acting bronchodilators. It is however unclear whether their discontinuation reduces the elevated risk of pneumonia associated with these drugs.

Methods: Using the Quebec health insurance databases, we formed a new-user cohort of COPD patients treated with inhaled corticosteroids during 1990-2005 and followed through 2007 or until a serious pneumonia event, defined as a first hospitalisation for or death from pneumonia. A nested case-control analysis of the cohort was used to estimate the rate ratio of serious pneumonia associated with discontinuation of inhaled corticosteroid use, compared with continued use, adjusted for age, sex, respiratory disease severity and co-morbidity.

Results: The cohort included 103,386 users of ICS, of which 14,020 had a serious pneumonia event during 4.9 years of follow-up (incidence rate 2.8/100/year). Discontinuation of inhaled corticosteroids was associated with a 37% decrease in the rate of serious pneumonia (rate ratio (RR) 0.63; 95% confidence interval (CI): 0.60-0.66). The risk reduction was rapidly evident, going from 20% in the first month to 50% by the fourth month after discontinuation. The risk reduction was particularly marked with fluticasone (RR 0.58; 95% confidence interval (CI): 0.54-0.61), but less so with budesonide (RR 0.87; 95% CI: 0.78-0.97).

Conclusions: Discontinuation of inhaled corticosteroid use in COPD is associated with a reduction in the elevated risk of serious pneumonia, particularly so with fluticasone.