Cardioprotective effects of inhaled corticosteroid-containing combination therapy in COPD

To the Editor:

The pooled *post hoc* analysis of three randomised controlled trials by Vestbo *et al.* [1] found that combinations containing inhaled corticosteroid (ICS) significantly reduced non-respiratory-related mortality in chronic obstructive pulmonary disease (COPD) compared to long-acting bronchodilator therapies alone, the difference amounting to −35% (95% CI −57% to −3%). These studies did not adjudicate on cause of death and only followed patients for up to 1 year. In the IMPACT trial, all-cause mortality was 42% lower and cardiovascular attributed deaths were 52% lower when comparing triple therapy to combined long-acting bronchodilators over 1 year [2].

Another real-life analysis used record linkage data from Tayside, Scotland, UK among 4133 COPD patients who were studied over a period of 4.6 years [3]. Comparing patients taking any ICS-containing combination regimens to those with long-acting bronchodilators alone showed an overall significant difference in all-cause mortality of −36% (95% CI −48% to −20%). Moreover, those patients taking triple therapy had a significant difference in both all-cause and cardiovascular mortality, amounting to a −49% difference (95% CI −59% to −36%) and −44% difference (95% CI −65% to −10%), respectively. Such patients had a mean forced expiratory volume in 1 s of 53% predicted, oxygen saturation of 91%, mean age of 68 years and smoking history of 46 pack-years.

This in turn suggests a hypothesis that ICS-containing combination therapy may confer cardioprotective effects in patients with COPD. A possible salutary effect of ICS could be suppression of aldosterone, which is known to impair cardiac function and promote arrhythmias [4, 5]. It remains unclear whether this putative cardiac benefit of ICS might occur in COPD patients with concomitant hypoxaemia, which could sensitise ischaemic myocardium [6, 7]. Further prospective trials are now required to test this hypothesis, perhaps in COPD patients stratified by cardiovascular risk using noninvasive biomarkers, such as high sensitivity troponin and N-terminal pro-hormone B-type natriuretic peptide.

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