Cardioprotective effects of inhaled corticosteroid-containing combination therapy in COPD

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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 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 one 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 one year [2].

Another real life analysis used record linkage data from Tayside Scotland 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 -20 to -48). 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 FEV1 of 53% predicted, oxygen saturation of 91%, mean age 68 years and 46 pack years of smoking.

This in turn suggests a hypothesis that ICS containing combination therapy may confer cardio-protective 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 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 non invasive biomarkers such as high sensitivity troponin and N-terminal pro-hormone B type natriuretic peptide.

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