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## **Cardioprotective effects of inhaled corticosteroid-containing combination therapy in COPD**

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**Cardio-protective effects of inhaled corticosteroid  
containing combination therapy in COPD**

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3 Cardio-protective effects of inhaled corticosteroid containing combination  
4 therapy in COPD  
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7 To the editor  
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9 The pooled post hoc analysis of three randomised controlled trials by Vestbo et  
10 al [1] found that combinations containing inhaled corticosteroid (ICS)  
11 significantly reduced non respiratory related mortality in COPD compared to  
12 long acting bronchodilator therapies alone, the difference amounting to -35%  
13 (95% CI -57 to -3). These studies did not adjudicate on cause of death and only  
14 followed patients for up to one year. In the IMPACT trial all cause mortality was  
15 42 % lower and cardiovascular attributed deaths were 52% lower when  
16 comparing triple therapy to combined long acting bronchodilators over one year  
17 [2].  
18

19 Another real life analysis used record linkage data from Tayside Scotland among  
20 4133 COPD patients who were studied over a period of 4.6 years [3]. Comparing  
21 patients taking any ICS containing combination regimens to those with long  
22 acting bronchodilators alone showed an overall significant difference in all cause  
23 mortality of -36% (95% CI -20 to -48). Moreover those patients taking triple  
24 therapy had a significant difference in both all cause and cardiovascular  
25 mortality amounting to a -49% difference (95% CI -59 to -36) and -44%  
26 difference (95%CI -65 to -10) respectively. Such patients had a mean FEV1 of  
27 53% predicted, oxygen saturation of 91%, mean age 68 years and 46 pack years  
28 of smoking.  
29

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