LETTER

Effect of statins on cancer in chronic obstructive pulmonary disease

We read with interest the article by van Gestel et al reporting a protective effect of statins on cancer mortality in chronic obstructive pulmonary disease (COPD) patients and suggest here a plausible explanation.

Consistent with the literature, the study shows that COPD is associated with an elevated risk of lung cancer. Recently, we reported that COPD is pre-existing in 70% of lung cancer cases compared with 15% in unselected matched smokers. We agree with van Gestel et al that this link is likely to be secondary to a pro-inflammatory disposition resulting from both smoking and genetic susceptibility. In this regard serum interleukin (IL)-6, which is elevated by genetic and smoking effects, has been shown to be inversely correlated with the forced expiratory volume in 1 s in prospective studies. In a murine model, overexpression of IL-6 resulted secondary to a pro-inflammatory volume in 1 s in prospective studies. In a murine model, overexpression of IL-6 resulted secondary to a pro-inflammatory disposition resulting from both smoking and genetic susceptibility.

In a recently published review of statins in COPD,3 we suggest that the anti-inflammatory effects of statins, through inhibition of GTPases, may explain the protective effect of statin use on lung cancer incidence as reported in three large observational studies (OR 0.45–0.70) and also by van Gestel et al (OR 0.46–0.74). Studies show that statins can directly inhibit EMT through GTPase inhibition and inhibit the effects of IL-6, an effect that has been shown to block tumour progression.4,5 We suggest that the anti-inflammatory actions of statins (eg, anti-IL-6 activity) could underlie the protective effects for both lung cancer and extrapulmonary malignancies (figure 1). These observations add considerable weight to existing data that suggest that statins may be very beneficial to patients with COPD.

R P Young, R J Hopkins
Schools of Medicine and Biological Sciences, University of Auckland, Auckland, New Zealand
Correspondence to Dr R P Young, University of Auckland, 73 St Stephens Avenue, Parnell, Auckland 1, New Zealand; robertyoung@adhb.govt.nz

In a recently published review of statins in COPD,3 we suggest that the anti-inflammatory effects of statins, through inhibition of GTPases, may explain the protective effect of statin use on lung cancer incidence as reported in three large observational studies (OR 0.45–0.70) and also by van Gestel et al (OR 0.46–0.74). Studies show that statins can directly inhibit EMT through GTPase inhibition and inhibit the effects of IL-6, an effect that has been shown to block tumour progression.4,5 We suggest that the anti-inflammatory actions of statins (eg, anti-IL-6 activity) could underlie the protective effects for both lung cancer and extrapulmonary malignancies (figure 1). These observations add considerable weight to existing data that suggest that statins may be very beneficial to patients with COPD.

R P Young, R J Hopkins
Schools of Medicine and Biological Sciences, University of Auckland, Auckland, New Zealand
Correspondence to Dr R P Young, University of Auckland, 73 St Stephens Avenue, Parnell, Auckland 1, New Zealand; robertyoung@adhb.govt.nz

Figure 1  Relationship linking chronic obstructive pulmonary disease (COPD), lung cancer, extrapulmonary cancer and inflammation.

In a recently published review of statins in COPD,3 we suggest that the anti-inflammatory effects of statins, through inhibition of GTPases, may explain the protective effect of statin use on lung cancer incidence as reported in three large observational studies (OR 0.45–0.70) and also by van Gestel et al (OR 0.46–0.74). Studies show that statins can directly inhibit EMT through GTPase inhibition and inhibit the effects of IL-6, an effect that has been shown to block tumour progression.4,5 We suggest that the anti-inflammatory actions of statins (eg, anti-IL-6 activity) could underlie the protective effects for both lung cancer and extrapulmonary malignancies (figure 1). These observations add considerable weight to existing data that suggest that statins may be very beneficial to patients with COPD.

R P Young, R J Hopkins
Schools of Medicine and Biological Sciences, University of Auckland, Auckland, New Zealand
Correspondence to Dr R P Young, University of Auckland, 73 St Stephens Avenue, Parnell, Auckland 1, New Zealand; robertyoung@adhb.govt.nz

In a recently published review of statins in COPD,3 we suggest that the anti-inflammatory effects of statins, through inhibition of GTPases, may explain the protective effect of statin use on lung cancer incidence as reported in three large observational studies (OR 0.45–0.70) and also by van Gestel et al (OR 0.46–0.74). Studies show that statins can directly inhibit EMT through GTPase inhibition and inhibit the effects of IL-6, an effect that has been shown to block tumour progression.4,5 We suggest that the anti-inflammatory actions of statins (eg, anti-IL-6 activity) could underlie the protective effects for both lung cancer and extrapulmonary malignancies (figure 1). These observations add considerable weight to existing data that suggest that statins may be very beneficial to patients with COPD.

R P Young, R J Hopkins
Schools of Medicine and Biological Sciences, University of Auckland, Auckland, New Zealand
Correspondence to Dr R P Young, University of Auckland, 73 St Stephens Avenue, Parnell, Auckland 1, New Zealand; robertyoung@adhb.govt.nz

In a recently published review of statins in COPD,3 we suggest that the anti-inflammatory effects of statins, through inhibition of GTPases, may explain the protective effect of statin use on lung cancer incidence as reported in three large observational studies (OR 0.45–0.70) and also by van Gestel et al (OR 0.46–0.74). Studies show that statins can directly inhibit EMT through GTPase inhibition and inhibit the effects of IL-6, an effect that has been shown to block tumour progression.4,5 We suggest that the anti-inflammatory actions of statins (eg, anti-IL-6 activity) could underlie the protective effects for both lung cancer and extrapulmonary malignancies (figure 1). These observations add considerable weight to existing data that suggest that statins may be very beneficial to patients with COPD.

R P Young, R J Hopkins
Schools of Medicine and Biological Sciences, University of Auckland, Auckland, New Zealand
Correspondence to Dr R P Young, University of Auckland, 73 St Stephens Avenue, Parnell, Auckland 1, New Zealand; robertyoung@adhb.govt.nz

Competing interests None to declare.
Provenance and peer review Not commissioned; not externally peer reviewed.
Accepted 11 December 2009
Thorax 2010;65:1. doi:10.1136/thx.2009.131250

REFERENCES