

RGH Pharmacy E-Bulletin

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A joint initiative of the Patient Services Section and the Drug and Therapeutics Information Service of the Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia. The RGH Pharmacy E-Bulletin is distributed in electronic format on a weekly basis, and aims to present concise, factual information on issues of current interest in therapeutics, drug safety and cost-effective use of medications.

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Statins and the lung

There is growing evidence from epidemiological studies that the HMG CoA Reductase Inhibitors (statins) may have dual cardiopulmonary protective properties, with apparent benefits observed in patients with chronic obstructive pulmonary disease (COPD), pneumonia and lung cancer. These effects have been attributed to the anti-oxidative and anti-inflammatory properties of statins. An alternative explanation is the healthy user effect, where people who are prescribed statins are more likely to have a range of health behaviours or characteristics which are protective against adverse outcomes. Randomised controlled trials are now needed to assess the potential role for statins in slowing the progression of COPD and in the primary chemoprevention of lung cancer.

COPD

A retrospective case-controlled cohort study from Canada raised the possibility that statins may benefit patients with chronic obstructive pulmonary disease (COPD) beyond reduction of adverse cardiovascular (CV) events. Population databases were used to identify two cohorts of elderly patients, one including COPD patients at relatively high risk of CV events having previously undergone coronary artery revascularisation, the other made up of low CV risk COPD patients. In the high risk group the relative risk of hospitalisation for COPD was 0.72 (95% CI 0.56 to 0.92, $p=0.0091$) if they were taking a statin, and 0.66 (95% CI 0.51 to 0.85, $p=0.0012$) if using both a statin and either an ACE inhibitor or angiotensin receptor blocker. Similar changes were observed for patients in the low risk group.

Lung function decline

A recent US longitudinal observational study investigated whether statin use affects the rate of lung function decline in elderly male smokers and non-smokers. The study included 803 subjects enrolled in the Veterans Affairs Normative Aging Study, whose lung function was measured at least twice over a ten year period. For non-users of statins the estimated decline in FEV₁ was 23.9ml/year, compared to 10.9ml/year for those taking statins. Benefit was seen irrespective of smoking status. Only a small proportion of patients in this study had confirmed COPD.

Pneumonia

Observational studies have suggested that patients taking statins at the time they develop pneumonia or other serious infections have a lower risk of sepsis, death from sepsis or need for intensive care. However a Canadian prospective, population based study of patients admitted to hospital with community-acquired pneumonia ($n=3415$) found no benefit. Information which might reflect healthy user status was collected. Statin users were more likely to be former smokers, have up-to-date immunisations and less likely to need advance directives or to be admitted from a nursing home. 624 (18%) of patients died or were admitted to an intensive care unit. The adjusted odds ratio for statin use and adverse outcomes was 1.12 (95% CI 0.77 to 1.64, $p=0.55$).

Risk of lung cancer

Using Veterans Affairs databases researchers analysed data on 483,733 patients from eight southern US states before conducting a case-control study. 1.5% of patients had lung cancer and 33.8% were receiving statins. Patients with missing smoking information (35.5%) were excluded from the analysis. Statin use >6 months was associated with a significant risk reduction of lung cancer by 55% (adjusted OR 0.45; 95% CI 0.42 – 0.48, $p<0.01$). The protective effect of statins increased with duration of use, with a 77% risk reduction in those using a statin for > 4 years. Similar risk reductions were seen across all age, race, BMI, smoking, alcohol and diabetes groups. The study had a number of limitations; the study population was predominantly male, adjustment for exposure to passive smoke, asbestos and other known risk factors for lung cancer was not made, and adherence to statin therapy was unknown.

References available upon request.

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FOR FURTHER INFORMATION – CONTACT THE PHARMACY DEPARTMENT ON 82751763 or email: chris.alderman@rgh.sa.gov.au
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