Effectiveness of statins for secondary prevention in elderly patients after acute myocardial infarction: an evaluation of class effect

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Background: Clinical trials have shown the benefits of statins after acute myocardial infarction (AMI). However, it is unclear whether different statins exert a similar effect in reducing the incidence of recurrent AMI and death when used in clinical practice.

Methods: We conducted a retrospective cohort study (1997–2002) to compare 5 statins using data from medical administrative databases in 3 provinces (Quebec, Ontario and British Columbia). We included patients aged 65 years and over who were discharged alive after their first AMI-related hospital stay and who began statin treatment within 90 days
after discharge. The primary end point was the combined outcome of recurrent AMI or death from any cause. The secondary end point was death
from any cause. Adjusted hazard ratios (HRs) for each statin compared with atorvastatin as the reference drug were estimated using Cox proportional
hazards regression analysis.

Results: A total of 18 637 patients were prescribed atorvastatin (n = 6420), pravastatin (n = 4480), simvastatin (n = 5518), lovastatin (n = 1736) or
fluvastatin (n = 483). Users of different statins showed similar baseline characteristics and patterns of statin use. The adjusted HRs (and 95%
confidence intervals) for the combined outcome of AMI or death showed that each statin had similar effects when compared with atorvastatin:
pravastatin 1.00 (0.90–1.11), simvastatin 1.01 (0.91–1.12), lovastatin 1.09 (0.95–1.24) and fluvastatin 1.01 (0.80–1.27). The results did not change
when death alone was the end point, nor did they change after adjustment for initial daily dose or after censoring of patients who switched or stopped
the initial statin treatment.

Interpretation: Our results suggest that, under current usage, statins are equally effective for secocondary prevention in elderly patients after AMI.