

Determinants of statin initiation and discontinuation in the secondary prevention of atherosclerotic cardiovascular disease in Scotland during 2009–2017

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Background

Previous studies have shown that use of statins for secondary prevention of cardiovascular disease (CVD) is suboptimal. However, the role of particular individual characteristics at different treatment stages is limited.

Purpose

To use large-scale population-wide individual patient data to investigate reasons for suboptimal use of effective CVD medications, in order to identify patient groups that could be targeted to improve medication adherence.

Methods

This observational longitudinal study used anonymised linked NHS Scotland administrative data (General/Acute Inpatient and Day Case, the National Records of Scotland and the Prescribing Information System) for all individuals hospitalised for an atherosclerotic CVD event (based on ICD-10 discharge codes) in Scotland between 1 April 2009 and 31 December 2017. Statin initiation was defined as individuals being prescribed statin therapy within 90 days from index discharge and dispensed within 60 days from that prescription. Discontinuation was defined as the start of first statin treatment gap of 180 days or more since initiation. Multivariate logistic regression and Cox proportional hazards models were used to study the relevance of patient characteristics (e.g. demographic, clinical, socio-economic) and admission calendar year to the likelihood of, respectively, initiating or discontinuing statin treatment. Findings are reported for all CVD events and, separately, for myocardial infarction (MI), ischaemic stroke (IS) and peripheral arterial disease (PAD).

Results

Of the 178,113 patients hospitalised for CVD, 19% did not initiate statin treatment. Among the 144,077 patients initiating (40% on high-intensity statins, as defined by NICE guidelines), 25% discontinued treatment within 2 years. Initiation was less common in women (29% less likely than men), older people (22% and 50% less likely for patients in their 70s and 80s respectively vs. 60s), people living in more deprived areas, people receiving specialist mental health care, people with multiple morbidities and people not taking statin prior to admission (Figure). Most of these characteristics were also associated with a decreased likelihood of initiating high-intensity statins, as well as an increased risk of discontinuing statin therapy. In later years, levels of statin initiation, including on higher-intensity statins (58% of statin initiators in 2015–17 vs. 32% in 2009–11), and statin persistence have improved.

Conclusions

Rates of statin initiation and discontinuation remain suboptimal, especially among women, older people and people with multiple morbidities or mental health illness.

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