

The management of diabetes should include efforts to prevent, or delay, the onset of cardiovascular disease.

Statins have been shown to lower cardiovascular risk in diabetes and their prescription is now part of standard care. Both diabetes, and other cardiovascular risk factors, are more common among older age groups, men and in lower socio-economic groups – all of which should be taken into account in risk scores used when considering the prescription of statins. Inequitable use of interventions, including statins, to reduce

That is why the Scottish Diabetes Research Network Epidemiology Group set out to investigate patterns of statin prescribing among those newly diagnosed with diabetes, and to ascertain what proportion of this population actually receive statins in accordance with clinical guidelines.

Statin prescribing guidelines

In 2005, the Joint British Societies (JBS) recommended that all people with diabetes (Type 1 or Type 2) aged 40 or more should be offered statins. The presence of diabetes alone, whether

Mining Scotland's diabetes database

The study drew on data from the Scottish Care Information–Diabetes Collaboration (SCI-DC), which supports a national population-based electronic diabetes register containing both clinical and demographic data for people with diabetes. This is updated daily and is used to support clinical care. Those who are treated for diabetes at either a Scottish general practice or in a Scottish hospital clinic will be on the register. The data used here comes from a 2008 extract containing records for 272,074 people with diabetes, with an updated



STATIN PRESCRIBING SHORTFALL REVEALED

Clinical guidelines recommend prescription of a statin for all patients with diabetes. However, a new study reveals that universal use of statins in diabetes is far from the norm. Therefore, some patients are missing out on an opportunity for cardiovascular prevention

cardiovascular risk, could contribute to health inequalities.

Clinical guidelines exist to support equitable care, but are not always followed. Previous research has shown that there are inequalities in the management of heart disease in the Scottish population, but it is not known whether this also applies to people with diabetes when it comes to prevention of cardiovascular disease with statins.

or not cholesterol is raised, is considered a risk factor for cardiovascular disease requiring management in this way. National guidelines from the Scottish Intercollegiate Guidance Network (SIGN) follow the JBS recommendations. The primary outcome of this new study was a simple one – are SIGN recommendations on the universal use of statins among the Scottish diabetes population actually being followed?

link to prescribing data in 2011. Age, sex, body mass index (BMI), smoking status, total serum cholesterol and type of diabetes were used as covariates. Socio-economic status was gauged according to the Scottish Index of Multiple Deprivation, which looks at several factors, including income, education and housing status. Prescription records were examined to see whether a statin had been

prescribed, or not, in the two years following diagnosis of diabetes.

The study population comprised individuals over 40, newly diagnosed with Type 1 or Type 2 diabetes between 1 January 2006 and 1 March 2008, and followed up thereafter for two years. Those who were already on statins, or who had previously been admitted to hospital with cardiovascular disease, were excluded from the study. Thus, 7,157 men and 5,601 women took part in the study.

Study findings

Analysis of the data showed that only 68 per cent of the men and 69 per cent of the women in the study were actually prescribed a statin in the two years after their diabetes diagnosis. This proportion varied by participant characteristics. Statin prescription was higher in the 55–64 age group, among those with Type 2 (as opposed to Type 1), among those who were overweight or obese and among current or former smokers. Those with total cholesterol ≥ 5 mmol/l were also more likely to be offered statins than those whose cholesterol was < 5 mmol/l. Finally, the proportion of those receiving statins was highest among the lowest socio-economic class.

Missing out on statins?

The finding that those with higher BMI, smokers, higher cholesterol and those of lower socio-economic status are most likely to be offered statin treatment does at least suggest that this intervention is being offered to those who may have the most to gain. It is also noteworthy that the Quality and Outcomes Framework (QOF) incentivises the prescription of statins to those with cholesterol ≥ 5 mmol/l. Nevertheless, SIGN does recommend universal prescription of statins to those with Type 2 diabetes, regardless of their cholesterol level.

Those with Type 1 were less likely to be offered a statin than those with Type 2. SIGN guidelines covering the period of this study actually suggest a lower risk threshold for Type 1 patients, because there is some potential for underestimation of risk in the current risk assessment methods for these patients. However, the current SIGN guidelines

“ SIGN does recommend universal prescription of statins to those with Type 2 diabetes... ”

say that statins ‘should be considered’ for those with Type 1, while they ‘are recommended’ for those with Type 2. The authors suggest that the difference in prescribing statins between patients with Type 1 and Type 2 may reflect lack of evidence of the effectiveness of statins in Type 1 or uncertainty about the cardiovascular risks in this group.

Although there is evidence that statin treatment can be beneficial up to the age of 80, this study found that men above 65 and women above 75 were less likely to be offered a statin prescription than those in other age groups. There are several possible reasons for this ‘age discrimination’: polypharmacy, co-morbidity, concern over side effects or effectiveness of statins, and recognition of the lower relative risks of diabetes mortality in the older age groups.

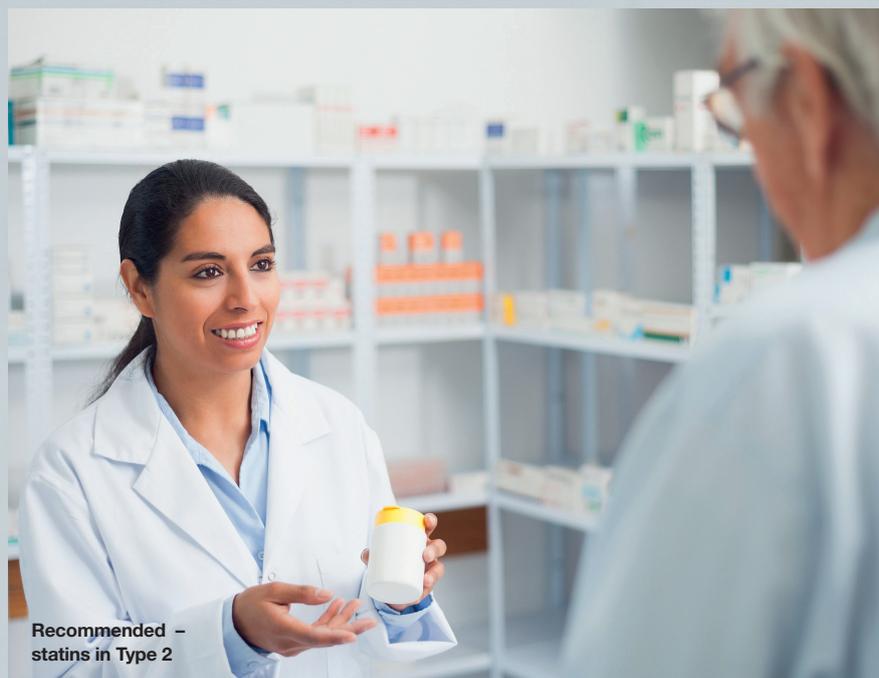
Meanwhile, the finding that those with lowest socio-economic status are more likely to receive a statin than those

in higher status groups actually contrasts with ‘inverse care law’ findings, which describe poorer treatment of those most at risk through socio-economic factors.

The study context

An earlier study on the use of statins to manage coronary heart disease found that the most deprived individuals were less likely to receive statins. The authors note that, although the time period and population differ, it is interesting that this is the opposite trend from that found in this new study. The difference might reflect growing awareness of deprivation as a risk factor and the impact of QOF, one of whose aims is to reduce health inequalities. These developments have certainly been linked to a marked increase in the prescription of lipid-lowering medication in Scotland between 2003 and 2007.

Other studies (from England, Norway and Denmark) have come to differing conclusions on the link between statin prescribing and socio-economic status. In some, statins are more likely to be offered to those in lower income groups, while in others the reverse is true. In short, the link between statin prescription and socio-economic status is complex, varying with time and place.



Recommended – statins in Type 2

Study strengths and weaknesses

This is the first study to investigate the prescribing of statins to people with diabetes in Scotland in relation to clinical guidelines. It draws upon a strong and comprehensive database that is truly representative of the diabetes population in Scotland.

However, the study did have some limitations. For instance, it does not tell us whether those not offered a statin received no treatment or advice on this aspect of their health, or whether the doctor suggested lifestyle changes, such as a healthier diet or cholesterol-lowering foods, as an alternative to a statin prescription. There are also other cardiovascular risk factors which could have been considered in relation to statin prescription, such as blood pressure, ethnicity and HbA1c. Nor does the study give any information about patients who are offered a statin prescription but refuse it, or do not actually take the medication that has been prescribed.

In conclusion

Statin prescribing to people with diabetes in Scotland seems to be broadly targeted towards those seen to be at greater risk of cardiovascular disease, such as smokers and those who are overweight or obese. There is also evidence that doctors are taking on board lower socio-economic status as a risk factor, as people from these groups were not disadvantaged when it comes to statin prescribing, which should contribute towards closing the health inequality gap. Nevertheless, it is clear from this new study that SIGN guidelines on statins and diabetes are not actually being followed, and there is a significant amount of undertreatment.

Further research is needed on cardiovascular outcomes to clarify the impact of not being on a statin. In the meantime, healthcare professionals should be aware that some of their diabetes patients could be missing an opportunity for cardiovascular risk reduction if they are not offered a statin prescription after diagnosis.

“...it is clear that SIGN guidelines on statins and diabetes are not actually being followed and there is a significant amount of undertreatment”

i This is a digested version of Jones NRV, Fischbacher CM, Guthrie B et al (2014). Factors associated with statin treatment for the primary prevention of cardiovascular disease in people within 2 years following diagnosis of diabetes in Scotland, 2006-2008. *Diabetic Medicine* 31 (6); 640-646. To download the article, go to <http://onlinelibrary.wiley.com/doi/10.1111/dme.12409/pdf>

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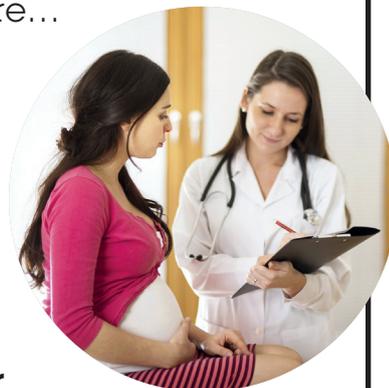
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