Primary prevention of cardiovascular disease: study finds that statins were often initiated with no knowledge of the person’s risk

A study has used the THIN database to look at the pattern of cardiovascular risk estimation and statin initiation for primary prevention in 248 general practices in England and Wales (2012–2015). Only 11% of people suitable for risk estimation had their cardiovascular risk recorded, and 73% of people who started a statin for primary prevention appear to have done so without knowing their risk (and hence the possible benefits from statins). A potential limitation is that only QRISK2 scores entered into the clinical record automatically or manually were recorded, so it is possible that the study underestimated the proportion of patients whose risk was known. Healthcare professionals should follow NICE guidance on lipid modification: risk assessment should be offered in a systematic way and decisions about starting statin therapy should be made after an informed discussion between the clinician and the person about the risks and benefits of statin treatment, taking into account their clinical circumstance and informed preferences. The NICE patient decision aid can help this discussion.

Overview and current advice

NICE guidance on cardiovascular disease: risk assessment and reduction, including lipid modification recommends offering formal risk assessment using QRISK2 to most people who are likely to be at increased risk of cardiovascular disease (CVD). Statins are recommended as an option for people whose 10-year estimated risk is 10% or greater (note, risk estimation is not recommended for people aged 85 years and older, people with type 1 diabetes and people with an estimated glomerular filtration rate [eGFR] less than 60 ml/min/1.73 m² and/or albuminuria: they are considered to be at increased risk and statin therapy should already be an option for them). The guidance states that, before offering statin treatment for primary prevention, healthcare professionals should discuss the benefits of lifestyle modification with the person and optimise the management of all other modifiable CVD risk factors if possible. The decision whether to start statin therapy should be made after an informed discussion between the clinician and the person about the risks and benefits of statin treatment, taking into account additional factors such as potential benefits from lifestyle modifications, informed patient preference, comorbidities, polypharmacy, general frailty and life expectancy.

The current guidance was updated in 2014; previous guidance from 2008 had set the recommended 10-year risk threshold for statin treatment at 20%. Changes in prices of statins meant that it had become cost-effective to offer statin therapy to people at lower risk, if they chose to take it.
New evidence

A historical cohort study has examined the relationship between QRISK2 scoring and statin initiation in primary care, using data relating to 1,422,664 patients from 248 general practices in England and Wales (Finnikin et al. 2017). Using the THIN database, the authors looked at recorded QRISK scores and statin initiation between 2012 and 2015. The cohort consisted of people without established CVD suitable for risk estimation according to NICE guidance (for example, excluding people with type 1 diabetes).

A total of 151,788 people (11%) in the cohort had at least one QRISK2 score recorded but there seemed to be little relationship between QRISK2 scoring and statin initiation. Most people (90%) who had a QRISK2 score recorded did not have a statin initiated within the following 60 days. More than half (60%) of those with a recorded QRISK2 score had an estimated 10-year risk less than 10%, and among the people with a 10-year risk greater than this, only 21% were initiated on a statin within 60 days. Conversely, nearly three-quarters (73%) of the 217,860 people initiated on a statin did not have a QRISK2 score recorded at any time.

The authors looked at the 14,949 people who had a QRISK2 score recorded and were initiated on a statin. When the pattern of statin initiation and QRISK2 scores before and after the guideline change in 2014 was compared, there was a slight increase in the proportion of people with a 10-year CVD risk between 10% and 19.9% who started a statin (from 12.8% to 14.4%). However, there were fewer people starting a statin among those with a CVD risk less than 10% (from 3.6% to 2.1%) and in those with a CVD risk greater than 20% (from 36.7% to 33.1%).

The study authors note a potential limitation in that only QRISK2 scores entered into the clinical record automatically or manually were recorded. If health professionals calculated a person’s risk using QRISK2 or another risk calculator but did not record it, this would underestimate the proportion of statin initiations that followed a risk estimation. In addition, if a statin was initiated more than 60 days after a person’s QRISK2 score was recorded this would not be linked to the score having been done.

Commentary

Commentary provided by NICE

The findings of this study are interesting and significant for practice in several ways. The proportion of people who could have had a CVD risk assessment using QRISK2 in line with NICE guidance who actually went on to have one was very small – only about 11 people in 100. NICE guidance recommends discussing the process of risk assessment with the person identified as being at risk, including the option of them declining this. However, this is unlikely to account for this low proportion. This possible explanation is also not congruent with the higher proportion of the whole cohort who initiated statin therapy, and the high proportion of these people who did so without a recorded QRISK score.

The authors note an important possible limitation relating to recording of QRISK scores. Notwithstanding this, and also noting the high proportion of people who did not start a statin following a recorded QRISK2 score, one is left with the impression that GP practices in the study:

- were far more likely to prescribe statins to people when, according to the clinical record, neither the person nor the prescriber knew the person’s baseline risk than when it was known (which could mean they were overtreated)
- did not prescribe statins to many people when their 10-year risk was known to be greater than 10% (which could mean they were undertreated, but for at least some people, this could have been because they did not think the chance of benefiting outweighed the downsides of treatment)
• did not target risk estimation particularly well, since a large proportion of the people who had a QRISK score calculated and recorded had a 10-year risk less than 10%.

Starting a statin for primary prevention without apparently knowing the person’s risk of CVD is particularly concerning. Choosing to take a statin or not is a highly preference sensitive decision, so NICE guidance recommends that the decision about starting statin therapy should be made after an informed discussion between the clinician and the person about the risks and benefits of treatment, taking into account their clinical circumstance and informed preferences. The NICE patient decision aid can help this discussion.

Taking a statin involves a trade-off between possible benefits, possible harms from side-effects and the disutility of taking a daily medicine. For example, and as illustrated in the decision aid, for people at 15% 10-year risk, taking a statin at a dose recommended by NICE reduces the risk of cardiovascular events from 15 in 100 to 9 in 100; taking it makes no difference to what would have happened to 94 people in 100 had they all not taken a statin. As discussed in another medicines evidence commentary Patient preferences: minimum likely benefits required from cardiovascular preventative medication, when presented with a hypothetical scenario many people required a substantial risk reduction before they would consider taking daily preventative medication. Yet there is good evidence that doctors and patients often overestimate the likely benefits of treatments and underestimate harms (Hoffmann et al. 2015, Hoffmann et al. 2017). Unless the person and their healthcare professional know the person’s baseline risk, and hence the potential benefits from statin therapy, their decision will not be properly informed and might well be based on false assumptions.

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References

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