Medicines Evidence Commentary

commentary on important new evidence from Medicines Awareness Weekly

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Primary prevention of stroke and transient ischaemic attack: UK observational study suggests under-prescribing of prevention medicines

An observational study using a UK database found that 17,680 people with a first ever stroke or transient ischaemic attack (TIA) had a clinical indication for primary prevention with an anticoagulant, a lipid-lowering medicine or antihypertensive. In total, over half the people with a clinical indication were not prescribed prevention medication prior to the stroke. The authors estimate that approximately 12,000 first strokes may be prevented each year in the UK by optimal prescribing of prevention medicines. Clinicians should aim to be impartial and supportive in helping people decide whether they want to take medication to prevent cardiovascular diseases like stroke. Patient decision aids, such as those from NICE, can go some way to support informed shared decision making.

Overview and current advice

Stroke is a major health problem in the UK, accounting for over 56,000 deaths in England and Wales in 1999, which represents 11% of all deaths. Each year in England, approximately 110,000 people have a stroke, and a further 20,000 people have a transient ischaemic attack (TIA). More than 900,000 people in England are living with the effects of stroke, with half of these being dependent on other people for help with everyday activities (NICE guideline on stroke and transient ischaemic attack).

Primary prevention through treatment of modifiable risk factors (such as hypertension, atrial fibrillation and dyslipidaemia) can reduce the global burden of stroke and TIA. NICE has published a number of guidelines that make recommendations on the primary prevention of stroke and TIA. The NICE guideline on hypertension in adults recommends offering antihypertensive medicines to all people with stage 2 hypertension and to people aged under 80 years with stage 1 hypertension who have existing cardiovascular disease (CVD) or who have an increased CVD risk. The NICE guideline on atrial fibrillation recommends considering anticoagulation for men with a CHA2DS2-VASc score of 1 and offering anticoagulation to people with a CHA2DS2-VASc score of 2 or above, taking bleeding risk into account. The NICE guideline on cardiovascular disease recommends statins for people with existing CVD and those at increased CVD risk. 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 NICE Pathway on stroke brings together all related NICE guidance and associated products in a set of interactive topic-based diagrams.

New evidence

A UK observational study analysed electronic primary care medical records to investigate the proportion of people with a first stroke or TIA who were eligible for primary prevention of stroke or TIA with lipid-lowering, anticoagulant, and antihypertensive medicines but not prescribed these treatments.

The study used The Health Improvement Network (THIN) database, which covers approximately 6% of the UK population and includes accurate and comprehensive prescribing data. People were included in the study if they had a diagnosis of first stroke, first TIA or first stroke with a history of TIA between 1 January 2009 and 31 December 2013, and were 18 years or over at time of diagnosis. People with clinical indications for lipid-lowering, anticoagulant or antihypertensive medicines who were not prescribed these treatments prior to the stroke or TIA were classified as being ‘under-prescribed’. Clinical indications for these treatments were based on NICE guidelines used during the study period.

During the 5-year study period, 29,043 people with stroke or TIA met the inclusion criteria, of whom 17,680 people had an indication for 1 or more stroke prevention medicines at the time of their TIA or stroke. In total, 54% of people (9,579/17,680) with a clinical indication were not prescribed prevention medication. Under-prescribing of stroke prevention medicines in people with a clinical indication was observed in 49% (7,836/16,028) of people for lipid-lowering medicines, 52% (1,647/3,194) for anticoagulant medicines and 25% (1,740/7,008) for antihypertensive medicines.

The researchers investigated whether prescribing patterns changed over time, finding that under-prescribing of anticoagulants decreased from 2009 (58%) to 2013 (45%), although there was no change in the under-prescribing of lipid-lowering or antihypertensive medicines during the same period.

Extrapolating proportions of underuse of prevention medicines within the THIN database to estimates of the UK population and stroke incidence, the authors approximate that 41,405 people with a first stroke are eligible for but not prescribed lipid-lowering, anticoagulant or antihypertensive medicines each year. Based on the effectiveness of these medicines, the authors suggest that about 12,000 first strokes may be prevented each year in the UK by optimal prescribing of prevention medicine.

It should be noted that the clinical indications for lipid-lowering medicines and anticoagulants were based on NICE guidelines that have subsequently been updated (CG67 and CG36 respectively). A number of key changes were made to the updated NICE guidelines. The authors performed an exploratory analysis that investigated the impact of updated guideline recommendations regarding use of the CHA2DS2-VASc and QRISK2-2014 risk scores, and lowering the threshold for starting statins from a 20% 10-year CVD risk to 10%. The proportion of under-prescribing of lipid-lowering medicines and anticoagulants was similar to the main findings.

There are some important limitations to the study. We do not know why the medicines were not prescribed; there may be legitimate reasons for this, for example bleeding risk or the person choosing not to take them after an informed discussion. In addition, the definition of under-prescribing used in
the study does not address important factors such as adherence, appropriate prescribing of medicine combinations, or targets, for example blood pressure levels.

Commentary
Commentary provided by Dr Martin Duerden, Honorary Senior Research Fellow, Bangor University, North Wales

In 1992 Julian Tudor Hart discussed evidence that approximately half of most common chronic disorders in UK general practice were undetected, that half of those detected were not treated, and that half of those treated were not controlled. This is the ‘rule of halves’. Hopefully this is no longer the case, but this important new database study suggests another rule of halves may now apply in the UK: only a half of people who had a stroke or TIA, with previously identified and remediable risk factors, were receiving drug treatment to reduce risk. Extrapolating these data to the UK the researchers estimate that around 12,000 strokes could be prevented each year.

Does this mean that prescribers in the UK are reluctant to offer primary preventative treatments? When the NICE guidance on cardiovascular disease: risk assessment and reduction, including lipid modification was published in 2014 there was a concern from some quarters that offering a statin to those who have a greater than 10% risk of CV disease would medicalise a large number of people; this was even described as “mass statinisation”. The dilemma is that the number needed to treat to prevent one CV event is relatively high for statin use in this group. Interestingly for hypertension, the number needed to treat with antihypertensives, to prevent an event, is of a similar order of magnitude as for statins.

Lifestyle advice is crucial, but so is exploring the patient’s values and preferences about drug interventions and determining what information they would like to receive on the risks and benefits for them. Clinicians should aim to be as impartial and supportive as possible and present this information in an understandable and impartial way. Patient decision aids, such as those produced by NICE for lipid modification and atrial fibrillation, can help facilitate person-centred decision making. What this study is unable to measure is how many of the people who had a stroke or TIA had been offered a choice of treatments, and then had this kind of informed discussion. In a future with clinical codes set up to capture this information we may be in a position to know this. The evidence is that these drug interventions reduce risk, but ultimately the choice to take them or not must remain with the patient.

Declaration of interests:
Dr Martin Duerden has done consultancy work for Eli Lilly and Company Ltd and Reckitt Benckiser. Dr Duerden was on the guideline development group for the NICE guideline on cardiovascular disease: risk assessment and reduction, including lipid modification (published July 2014), and is currently involved in a surveillance review to determine if this guideline should be updated.

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References


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