EDITORIAL

Strokes have declined but atrial fibrillation is still undertreated

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STROKE IS A MAJOR CAUSE OF MORBIDITY AND MORTALITY. PRIMARY CARE HAS A CENTRAL ROLE to play in prevention with the identification and management of hypertension, obesity, high cholesterol, atrial fibrillation (AF) and diabetes.[1]

A recent study has found that both the incidence of stroke and stroke deaths declined significantly over the past decade in the UK. This was accompanied by a notable increase in GP prescribing for primary and secondary prevention which is likely to have been a major contributing factor, the study authors conclude. However, the study also found underuse of anticoagulants in patients with AF at high risk of stroke, particularly in women.

'Anticoagulant prescribing did not increase with increasing $CHADS_2$ score'

The study used the General Practice Research Database (GPRD) to investigate the trend in strokes between 1999 and 2008. The GPRD contains anonymised data on demographics, diagnoses, referrals, prescribing and health outcomes for more than 3 million patients from 500 UK practices. It covers 6% of patients with a representative geographical distribution.

The authors identified patients aged 18 and older who had a first stroke coded into the GP record between 1999 and 2008. Because of the nature of the coding it was not possible to subdivide these into ischaemic and haemorrhagic. Patients were excluded if they had any coded cardiovascular event prior to stroke, except patients with a record of TIA.

Comorbidities were identified with hypertension defined as a BP >160/100 mm Hg. Pharmacological interventions in the year before the first stroke were recorded. Second cardiovascular events were defined as a second stroke or other cardiovascular event occurring more than 56 days after a first stroke. Stroke events were considered fatal if patients had death coded in their GP record within 56 days of the stroke. Patients with coded AF before first stroke had a $CHADS_2$ score calculated and the use of anticoagulants and antiplatelet drugs by $CHADS_2$ score in the year before, and after, the first stroke were recorded.

There were 32,151 index strokes in the study cohort. Stroke incidence fell by almost 30%, from 1.48/1,000 person-years in 1999 to 1.04/1,000 person-years in 2008 ($p<0.001$). In patients aged 80 years and over incidence fell by 42% from 18.97 to 10.97/1,000 person-years. There was a reduction in 56-day mortality after first stroke from 21% in 1999 to 12% in 2008 ($p<0.0001$). This trend was seen in both men and women.

GP prescribing of drugs to control cardiovascular risk factors increased over the study period, particularly for statins and antihypertensives. However, in patients with AF, use of anticoagulants before first stroke did not increase with increasing stroke risk. Average age at first stroke was 77 in women and 71 in men. As expected, patients were at high risk of a recurrent event after the index stroke with 24% having a second event, 75% of which were strokes. The most common risk factor for stroke was hypertension (65% of patients); 12% had diabetes and 11% had AF.

The AF cohort were older at the time of first stroke compared with the general cohort (82 for men and 77 for women). Furthermore, mortality was higher in patients with AF. In those aged >70, mortality after first stroke was 32% vs 23% in men without AF ($p<0.001$), and 36% vs 28% respectively in women ($p<0.001$).

Only 25% of AF patients (22% of women and 29% of men) were anticoagulated before their stroke. Anticoagulant prescribing did not increase with increasing $CHADS_2$ score. Antiplatelet therapy was prescribed to 52% of AF patients (54% of women and 47% of men) and prescribing increased steeply with increasing $CHADS_2$ score. Both men and women with AF were more likely to be prescribed anticoagulants after a first stroke, but while this rose from 29% to 48% for men, it only rose from 22% to 35% for women.

The authors conclude that the incidence of stroke in the UK fell by 30% between 1999 and 2008 and that the notable improvement in primary care management of cardiovascular risk was at least partially responsible.

However, there is still some way to go with regard to AF and the appropriate use of anticoagulation. More widespread use of risk scores such as $CHADS_2$ and CHA_2DS_2-VASc, increased awareness of the inadequacy of antiplatelet agents for thromboprophylaxis and the availability of novel anticoagulants as a more effective alternative to warfarin should continue to improve the outlook for this group of patients.

See also 'Lowering thromboembolic risk in atrial fibrillation', clinical reviews p7

REFERENCE
1 Lee S, Shafe ACE, Cowie MR. UK stroke incidence, mortality and cardiovascular risk management 1999-2008: time-trend analysis from the General Practice Research Database. *BMJ Open* 2011;2:e000269.doi:10.1136/bmjopen-2011-0000269