Screening, optimization, support: a call for stroke prevention in atrial fibrillation

Every opportunity to prevent an atrial fibrillation-related stroke must be seized, and the expertise and resources available in secondary care make this an ideal place to screen and optimize individuals to appropriately reduce their stroke risk.

Atrial fibrillation increases stroke risk by five-fold, accounting for at least 20–25% of ischaemic strokes in all age groups and 30–40% in those aged over 80 years (Savelieva and Camm, 2000). Stroke care already makes up 5% of the total UK NHS expenditure (Saka et al, 2009) and evidence suggests that 7000 strokes and over 2000 lives could be saved in England alone if atrial fibrillation were adequately treated (Public Health England, 2015). Because cardioembolic strokes tend to consume double the resources of other stroke aetiologies as a result of increased morbidity and disability (Hannon et al, 2014), there is a clear need to identify individuals with atrial fibrillation and to start appropriate stroke preventative treatment.

By 2030, twice as many people will have atrial fibrillation than had it in 2010 (Colilla et al, 2013), primarily because of the sharp rise in prevalence of atrial fibrillation over the age of 75 years and the expectant rise in numbers of the older population. The difficulty with early detection of atrial fibrillation is that it is asymptomatic in around a third of patients (Healey et al, 2012), especially in the older population where atrial fibrillation can present ambiguously as dyspnoea, fatigue, dizziness or syncope (Savelieva and Camm, 2000). Therefore, a large number of at-risk individuals are not identified and not receiving appropriate stroke prevention treatment. In 2017 a staggering 47% of UK patients with a history of atrial fibrillation were not anticoagulated at the time of admission with a stroke according to the Sentinel Stroke National Audit Programme (2017). Therefore, emphasis must be placed on both systematic and opportunistic detection of atrial fibrillation and initiation of anticoagulation where indicated.

Dr Isuru Induruwa, Clinical Research Fellow, Department of Stroke Medicine, Cambridge University Hospitals NHS Foundation Trust, Cambridge CB2 0QQ

Dr Weiran Liu, Specialty Registrar, Department of Stroke Medicine, Cambridge University Hospitals NHS Foundation Trust, Cambridge

Dr Kayvan Khadjooi, Consultant in Stroke Medicine and Associate Lecturer, Department of Stroke Medicine, Cambridge University Hospitals NHS Foundation Trust, Cambridge

Correspondence to: Dr I Induruwa (ii231@cam.ac.uk)

Screening

Systematic screening programmes for atrial fibrillation, either of a general or at-risk population, do not exist in the UK at present. Instead current National Institute for Health and Care Excellence (2014) guidelines endorse checking for an irregular pulse, followed by an electrocardiogram, and consideration of longer-term monitoring for suspected paroxysmal cases. Large systematic screening studies such as STROKESTOP, which targeted 75–76-year-olds in Sweden, detected previously unknown atrial fibrillation in 3% of the participants using intermittent electrocardiogram recordings over a 2-week period (Svennberg et al, 2015). However, such screening can be costly to implement in large cohorts.

Evidence from UK primary care studies suggests that both systematic or opportunistic screening, using only pulse check and a single electrocardiogram, yields similar annual detection rates for atrial fibrillation (1.64% *vs* 1.62% respectively; no active screening 1.04%) (Hobbs et al, 2005), with cost effectiveness of screening increasing if targeted at the older population (Moran et al, 2016). Therefore, to improve atrial fibrillation detection, both opportunistic and systematic screening is recommended in the 2016 European Society of Cardiology guidelines (Kirchhof et al, 2016).

Admission to secondary care is an underused opportunity to screen for atrial fibrillation, to assess the stroke risk and to start optimal stroke prevention measures. Those admitted to hospital are different to community or primary care cohorts often included in large studies (National Institute for Health and Care Excellence, 2014) as they are older and carry a higher stroke risk as a result of having multiple comorbidities such as ischaemic heart disease, cardiac failure and diabetes. Therefore, patients admitted to medical and surgical wards are ideal candidates for cost-effective screening.

With this in mind, the authors' group carried out a systematic atrial fibrillation screening programme at a tertiary hospital in Cambridge admitting 1500 medical patients per month, to both look at the burden of atrial fibrillation and to understand the barriers to anticoagulation. Under the guidance of two stroke physicians, an appropriately trained stroke prevention nurse actively screened the electrocardiograms of all patients admitted to general medicine for atrial fibrillation. The results exhibited a 15% prevalence of atrial fibrillation in acute medical admissions, a substantial rise from previously quoted hospital figures of 3–6% (Lip et al, 1994) in the 1990s, and community rates of 7–12% (Svennberg et al, 2015). Patients with atrial fibrillation were also at high risk of stroke with a median CHA_2DS_2VASc score 4.4 and HAS-BLED score 1.3. Using this simple method, at least one new case of atrial fibrillation was detected per day, equating to a detection rate of 3.1% (Induruwa et al, 2017).

Barriers to treatment

It is important not to forget the numerous barriers to commencing anticoagulation in hospital, which must also be overcome after detecting atrial fibrillation. For example, many diagnoses of atrial fibrillation are made

when patients are admitted for an unrelated cause such as sepsis, or perioperatively, and measures are not in place to identify and carefully consider anticoagulation in these situations. Furthermore, many colleagues fail to recognize that paroxysmal atrial fibrillation carries a similar stroke risk to permanent atrial fibrillation. There is also a lack of awareness and confidence in risk stratifying and anticoagulating older, frailer and multimorbid patients, despite evidence indicating that the very elderly patients with atrial fibrillation have the greatest net benefit from anticoagulation for stroke prevention (Patti et al, 2017).

Therefore, supporting both hospital teams and GPs in anticoagulation decision making must be also a priority in secondary care. The authors' work has shown that between 2012 and 2016 only around 40% of those newly found to be in atrial fibrillation in their hospital population were anticoagulated, with the majority of decision making left in the hands of GPs. Studies have shown that patients desire specialist input and support when making anticoagulation decisions in atrial fibrillation (Siouta et al, 2016) and given the availability of specialists from stroke medicine, haematology, cardiology and elderly care, admission to hospital must be viewed as an excellent opportunity to facilitate appropriate stroke prevention. Hospital clinicians should initiate careful discussions during admission where possible. This would not only produce consistent advice, it would lead to informed decision making and better compliance from patients, as well as supporting primary care in making difficult anticoagulation decisions.

Conclusions

Over a quarter of 40-year-olds will develop atrial fibrillation in their lifetime (Lloyd-Jones et al, 2004), therefore atrial fibrillation is a worthwhile target in an ageing population, putting society at risk of a widespread stroke epidemic. Until targeted screening for atrial fibrillation is routine, secondary care must play a substantial contribution in averting this epidemic. Screening for atrial fibrillation in secondary care comes at no extra cost (as almost all medical patients have an electrocardiogram), leads to good new atrial fibrillation detection rates and is cost effective by virtue of targeting a very high-risk patient cohort. If atrial fibrillation is detected, appropriate reduction of stroke risk must be considered in every patient and secondary care therefore represents a valuable opportunity for multidisciplinary decision-making, patient education and optimizing stroke prevention in atrial fibrillation. **BJHM**

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KEY POINTS

- Atrial fibrillation is a growing health and economic burden worldwide, but no national screening programme to detect atrial fibrillation currently exists.
- Atrial fibrillation is a major cause of ischaemic stroke but 47% of patients with atrial fibrillation in the UK are not on anticoagulation at the time of their stroke.
- The burden of atrial fibrillation in acute medical admissions is at least 15%, a substantial rise from previously quoted hospital figures of 3–6%.
- Secondary care is an important yet underused place to screen for atrial fibrillation. Admitted patients are at high risk of cardioembolic stroke, screening is cost-effective, and multidisciplinary support is available for complex and holistic decision making in order to anticoagulate appropriate individuals.

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