

Can the NICE guidelines on the management of atrial fibrillation improve its management?

Chee W Khoo and Gregory YH Lip

Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia seen in clinical practice. The incidence of AF increases significantly with advancing age, with the prevalence being 8% for population of age 80 and above.¹ For those who are 40 years and older, the lifetime risk for the development of AF is 1 in 4 in both men and women.^{2,3} With an ageing population, an increase in the incidence and prevalence of AF has been reported worldwide.^{4,5} Indeed, AF has become such a common problem that it is now described as ‘a major epidemic’.

Due to the close relationship between AF, stroke and thromboembolism there has been a need for increased caution. Irrespective of applying a rate-control or rhythm-control strategy thromboprophylaxis remains the essential core of any AF management strategy. Given that AF is so common various management guidelines have been published over the last few years.^{6,7} In the UK, the evidence-based national guidelines for the management of AF were published by the National Institute for Health and Clinical Excellence (NICE) in June 2006.⁷ The methodology for the NICE guidelines differs from other expert consensus-based guidelines in that, following agreement and definition of a scope for the NICE guideline, pertinent questions on AF management are formulated and a formal systematic review undertaken by an information scientist who would retrieve, assess and organise sources of published evidence. The latter is then critically appraised and graded by a health service research fellow and, if needed, a health economist. The synthesised evidence is reviewed and debated by a guideline development group (GDG), which included multidisciplinary representatives from various learned bodies and specialist organisations.

Despite the published guidelines for the management of AF, this common arrhythmia remains poorly managed, both in primary and secondary care, with marked variation in the approach to investigation and treatment. Apart from the specific recommendations, the NICE guidelines have highlighted five key priorities for implementation as well as audit criteria and areas for future research (Box 1). The remit of the NICE guideline on AF management was to provide a practical, pragmatic and highly applicable national guideline to the UK clinical setting, which would be applicable for >80% of AF patients for >80% of the time. Given this aim, has the publication of these guidelines actually improved AF management?

In the current issue of *Clinical Medicine*, the paper by Loo and colleagues examines existing clinical practice in advance of pub-

lication of the NICE guidelines.⁸ Their study suggests that only 84% of 131 patients with diagnosis of AF had either electrocardiogram (ECG) documentation in primary and/or secondary care. Almost half of the patients with AF were managed in primary care alone and the diagnosis of AF was generally accurate. The use of echocardiography is an important part of management, and in the paper by Loo *et al* only 44% of the study population underwent an echocardiogram.⁸ However, this percentage increases in those who were diagnosed with AF after 2000 and those who had cardiology input from secondary care. This could probably be explained by a better understanding of the management of AF, better educational efforts and, perhaps, a better provision of echocardiography services from secondary care.

The overall rate of anticoagulation was higher than other studies, but there remains a discrepancy, with only about half of

Box 1. Priorities for implementation in the National Institute for Health and Clinical excellence guidelines for the management of atrial fibrillation (AF).

The following five recommendations have been identified as priorities for implementation:

1. An electrocardiogram should be performed in all patients, whether symptomatic or not, in whom AF is suspected because an irregular pulse has been detected.
2. As some patients with persistent AF will satisfy criteria for either an initial rate control or rhythm control strategy:
 - the indications for each option should not be regarded as mutually exclusive and the potential advantages and disadvantages of each strategy should be explained to patients before agreeing which to adopt
 - any comorbidities that might indicate one approach rather than the other should be taken into account
 - irrespective of whether a rate control or a rhythm control strategy is adopted in patients with persistent AF, appropriate antithrombotic therapy should be used.
3. In patients with permanent AF, who need treatment for rate control:
 - beta-blockers or rate-limiting calcium antagonists should be the preferred initial monotherapy in all patients
 - digoxin should only be considered as monotherapy in predominantly sedentary patients.
4. In patients with newly diagnosed AF for whom antithrombotic therapy is indicated, such treatment should be initiated with minimal delay after the appropriate management of comorbidities.
5. The stroke risk stratification algorithm should be used in patients with AF to assess their risk of stroke and thromboembolism, and appropriate thromboprophylaxis given.

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patients in the 'high-risk' group, according to NICE guidelines for thromboembolic risk, being prescribed warfarin.^{9,10} When comparing the NICE stroke risk score with the CHADS2 score, Loo and colleagues found that 50% of the patients recruited fell into the 'high-risk' category using the NICE schema, while only 28% of the same patients would be considered to be 'high risk' if the simpler CHADS2 scoring schema was used, despite the latter being published earlier (2001) than the NICE schema.⁸

Also, the large number of patients categorised in the intermediate/moderate-risk group by the CHADS2 schema reflects the limitation of the published stroke risk stratification schema in assisting clinicians' antithrombotic therapy decision making. In the recent Stroke in AF working group analysis, the proportion classified as high risk could vary substantially – between 11% and 77% – depending on which schema was used.¹¹ Given that current AF management guidelines recommend the use of either warfarin or aspirin in the intermediate-risk patient group, this potentially leads to the dilemma of whether anticoagulant therapy or aspirin should be used, and may create indecision for clinicians managing such patients.¹² Also, the predictive value of various schema for stroke events is modest (C statistic values approximately 0.60–0.65) and efforts to improve this are clearly needed.¹³

To illustrate this issue, a cut-off point of age >75 is probably too simplistic, given that there is a relative risk for stroke of 1.5 per decade with increasing age, as documented by the AF working group.¹⁴ The recent Birmingham Atrial Fibrillation Treatment of the Aged (BAFTA) study, which considered patients with AF aged ≥75 years in the primary care setting, also showed that warfarin was significantly more effective than aspirin in preventing stroke (by over 50%, with nearly 2% annual absolute risk reduction), without any excess in the risk of major bleeding.¹⁵ Similarly, 'hypertension' as one of the criteria in the CHADS2 schema is ambiguous, given that history of hypertension (but now well controlled) may well carry a different stroke risk to uncontrolled hypertension. In an analysis from the SPORTIF trial dataset, for example, there was a clear difference in stroke and systemic embolism with poorly controlled hypertension, compared to well-controlled blood pressure levels.¹⁶ Indeed, stroke events were low and fairly constant when mean systolic blood pressure was <140 mmHg, but when levels exceeded this threshold, event rates for stroke and systemic embolism rose substantially.

Thus, there remains scope for better use of stroke risk stratification and improvements in the current schema to target stroke and thromboembolism prophylaxis appropriately, and a need for refinement of subjects classified at intermediate risk. Clearly, the article by Loo and colleagues illustrates that AF in general is still relatively poorly managed in primary and secondary care despite well-established principles and protocols.⁸

Can the NICE guidelines for the management of AF overcome this issue and ultimately improve patient care? Guidelines are simply recommendations for best practice given the best evidence available at the time. Indeed, new data mean that some recommendations in the NICE guidelines need to be revisited.

For example, NICE suggest that rhythm control may be the best initial option for subjects with congestive heart failure. However, the AF–congestive heart failure trial recently reported that there was no significant difference in a rate control or rhythm control strategy for patients with AF and associated heart failure.¹⁷ Also, new antiarrhythmic drugs, such as dronedarone, may well change the approach to rhythm control, for cardioversion of AF and the maintenance of sinus rhythm.¹⁸ The BAFTA trial has also shown that elderly AF subjects aged ≥75 years would substantially benefit from anticoagulation therapy rather than aspirin, and even the NICE stroke risk stratification schema may need refinement to reflect this new evidence.¹⁵ New oral anticoagulants, such as the oral direct thrombin inhibitors and oral factor Xa inhibitors, are on the horizon, and may also revolutionise the approach to providing thromboprophylaxis in AF, and even remove the confusion for moderate-risk subjects with AF, as a safe anticoagulant without the necessity for monitoring could well be prescribed for all those AF patients at moderate to high risk of stroke, thus avoiding the ambiguity of published stroke risk stratification schema and the perception that aspirin is a true alternative to anticoagulation for stroke prevention in patients with AF.

Clearly, revisions to the NICE guidelines for AF management may soon be needed. For now, at least, the guidelines provide a backbone of evidence-based medicine for clinicians in the UK in the management of AF.

Competing interests

GL has received funding for research, educational symposia, consultancy and lecturing from different manufacturers of drugs used for the treatment of atrial fibrillation and thrombosis. He was clinical adviser to the guideline development group of the atrial fibrillation guidelines,⁷ and is a coauthor on the 8th American College of Chest Physicians guidelines on antithrombotic therapy for atrial fibrillation (2008).

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NCC-CC GUIDELINES

Atrial fibrillation

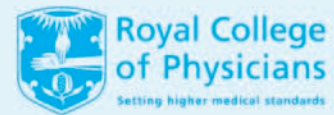
National clinical guideline for management in primary and secondary care

This evidence-based guideline provides complete best practice guidance on the diagnosis and management of atrial fibrillation (AF) in most clinical situations related to this common cardiac arrhythmia. The guideline:

- covers paroxysmal, persistent and permanent AF
- considers AF developing after surgical procedures
- offers advice on haemodynamically unstable AF
- gives recommendations for referral to specialist services
- provides full details of systematic reviews of the AF evidence base and health group modelling and considerations of the Guideline Development Group who were drawn from the country's leading experts in the field.

Many of the recommendations relate to control of AF and the important decision of whether to attempt to restore sinus rhythm or to concentrate on control of the heart rate. In a linked set of recommendations, the importance of considering anticoagulation in all patients is emphasised. This is sometimes neglected in clinical practice even though anticoagulation is of enormous potential benefit because of its role in stroke prevention. One of the key recommendations in the guideline is that the risk of thromboembolism should be formally assessed, and a simple clinical model which includes advice on appropriate prophylaxis is suggested for this purpose. Other key recommendations cover the use of ECG in diagnosis, and the preference in most patients for beta-blockers or rate-limiting calcium antagonists over digoxin for rate-control.

The guideline provides selected recommendations as key priorities for implementation, algorithms for everyday practice use and suggests topics for clinical audit as well as future research priorities.



The National Collaborating Centre
for Chronic Conditions

This guideline is part of a series commissioned by NICE which aims to ensure that standards of care throughout England and Wales are uniformly high.

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