Anticoagulation and atrial fibrillation

Editor,—We would like to congratulate McNulty and colleagues on their excellent clinical audit of antithrombotic therapy in atrial fibrillation.1 Their approach to the methods of audit has been impeccable, comparable in audit cycles by instigating a process of readout after the results from the original data set had been intensively presented to hospital colleagues, itself leading to a highly effective intervention.

We would, however, appreciate this opportunity to provide a brief update in a few aspects of the current knowledge of stroke prevention in atrial fibrillation. The Lip and Lowe algorithm used for risk stratification was first published in 19962 and a refinement has since been proposed (box 1), which has been adapted for use in local and national guidelines.

The essential changes relate to the contribution of echocardiography and paroxysmal atrial fibrillation. In the Atrial Fibrillation Investigators overview on echocardiographic risk factors for thromboembolism, left atrial size per se does not appear to be an independent risk factor on multivariate analysis and is no longer used in the risk stratification schema; indeed, left atrial dilatation rarely occurs independent of other pathology, such as hypertension or heart failure which themselves constitute high risk features.3 In this analysis, moderate or severe left ventricular dysfunction on two dimensional echocardiography was the significant abnormality which appeared to be an independent risk factor for thromboembolic stroke in non-valvular atrial fibrillation.4 Other studies using echocardiography for risk stratification have rarely found that the investigation significantly contributed to antithrombotic therapy management decisions, as many patients already had clinical risk factors allowing effective risk stratification.5

Regarding other risk factors, hormone replacement therapy use may also increase risk while alcohol consumption may be protective.6 McNulty and colleagues do not specifically address the problem of paroxysmal atrial fibrillation. Atrial fibrillation with intermittent atrial fibrillation unless they can be classified as having “lone” atrial fibrillation or there are contraindications to the use of anticoagulation, where aspirin should be used instead.

The safety and tolerability of long term anticoagulation titrated to conventional levels (international normalised ratio (INR) 2–3) is less clear in the very elderly (age older than 75 years), which is the age group encompassing perhaps half of the atrial fibrillation associated stroke patients. The elderly are also prone to more co-morbidity, polypharmacy, cognitive problems and frailty; indeed, biological age in some ways is more important than chronological age, and the decision must be based on the risk-benefit ratio, as with many things in clinical medicine. There have also been suggestions that an INR range of 1.6–2.5 can provide substantial, if partial efficacy (estimated to be nearly 90% of the highest intensities), and could be used for elderly patients to minimise haemorrhagic complications, although this has not been verified by any prospective study.7 Given the uncertainty about the safety of INRs >2.5 for patients with atrial fibrillation over the age 75, a target INR of 2.0 (range 1.6–2.5) may be a reasonable compromise between toxicity and efficacy for this age group, pending further data about the safety of higher intensities. Further information from our ongoing Medical Research Council funded BAFTA (Birmingham Atrial Fibrillation Treatment Assessment) study in elderly patients aged >75 years, with non-valvular atrial fibrillation in primary care, would provide further information.

McNulty and colleagues extrapolate from their data the potential savings both in hospital admission days and financial cost,8 which may be achievable by a nationwide consensus approach to the problem. We wholeheartedly support this, and agree with their call for improved stroke prevention in atrial fibrillation, especially as there is now evidence the benefits and risks of anticoagulation seen in the clinical trials can realistically be translated into everyday clinical practice.9

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Box 1: Risk stratification and anticoagulation in non-valvular atrial fibrillation

ASSSESS RISK AND REASSESS REGULARLY:

1. High risk (annual risk of CVA = 8%–12%)
   - All patients with previous transient ischaemic attack or CVA
   - All patients aged 75 or over with diabetes and/or hypertension
   - All patients with clinical evidence of valve disease, heart failure, thyroid disease, and/or impaired left ventricular function on echocardiography.

2. Moderate risk (annual risk of CVA = 4%)
   - All patients aged under 65 with clinical risk factors: diabetes, hypertension, peripheral arterial disease, ischaemic heart disease.
   - All patients aged over 65 who are not in high risk group.

3. Low risk (annual risk of CVA = 1%)
   - All patients under 65 with no history of embolism, hypertension, diabetes, or other clinical risk factors.

TREATMENT

1. High risk: give warfarin (target INR 2.0–3.0) if no contraindications and feasible in practice.
2. Moderate risk: either warfarin or aspirin 75–300 mg. In view of insufficient clear cut evidence, treatment may be decided on individual cases. Referral and echocardiography may help.
3. Low risk: give aspirin 75–300 mg daily.

*Echocardiography: not needed for routine risk assessment but refines clinical risk stratification in case of impaired left ventricular function and valve disease. A large atrium per se is not an independent risk factor on multivariate analysis.

CVA = cerebrovascular accident.
Implementation of antithrombotic management in atrial fibrillation

Editor,—We read the above original article of McNulty et al with interest particularly the antithrombotic management algorithm in fig 1. There is no mention of the time when the retrospective study was conducted. As was submitted in January 2000 we assume that the study was conducted sometime in 1999. The algorithm originally published in 1999 should be considered outdated in 1999/2000 because: first, in atrial fibrillation of an age of 75 years or older is a high risk factor for thromboembolism. Secondly, a large left atrium in patients with atrial fibrillation but without mitral valve disease is not an independent risk factor for thromboembolism. Therefore left atrium size of more than 4.5 cm per se should not be used to decide for long term anticoagulation in these patients. Thirdly, patients with atrial fibrillation who are below 65 years of age but with hypertension/ischamic heart disease/diabetes mellitis are at high risk and should be given warfarin, not aspirin. Fourthly, patients with atrial fibrillation at high risk of thromboembolism in whom warfarin and aspirin are contraindicated should be considered for clopidogrel or at least dipyridamole. In patients with atherosclerotic vascular disease, clopidogrel has been shown to be more active than aspirin in reducing risk of ischaemic stroke, myocardial infarction or vascular death without increasing adverse effect. Patients intolerant of aspirin should be given modified release dipyridamole or clopidogrel. We believe that using such improved management protocol for atrial fibrillation either for audit purpose or clinical practice, is likely to further reduce the risk of ischaemic stroke.

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This is a four day residential course for those in the medical profession wishing to improve their understanding of the principles and applications of genetic engineering techniques. Further information: Dr Charlotte West, Department of Biological Sciences, University of Warwick, Coventry CV4 7AL (tel 029 765 3540, fax 029 765 3501, email Charlotte.West@warwick.ac.uk).

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