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Firma del richiedente

Letters

Anticoagulation to prevent stroke in atrial fibrillation

- ▼ It's still not clear whether results in secondary care translate to primary care
- ▼ Cohort was younger than many patients with atrial fibrillation in primary care
- ▼ General practitioners have to decide best ways of allocating their time
- ▼ Rapid anticoagulant testing is not available in general practitioners' clinics in Japan
- ▼ Comprehensive geriatric evaluation should be routine before treatment is started

It's still not clear whether results in secondary care translate to primary care▲

EDITOR—Kalra et al's paper looking at the efficacy of anticoagulation for stroke prevention in atrial fibrillation¹ essentially complements Copland et al's work in showing that an elderly population can be given adequate anticoagulation.²

As Kalra et al performed a cohort study with no control population, the study does not allow any estimate of the effectiveness of the treatment as is suggested in the paper. Thus we do not know if there was any treatment benefit. The cohort obtained similar therapeutic control to the original trial populations, but this is not a dramatic finding given that it represents a similar population—that is, patients selected from medical outpatient clinics. This point seems to have been lost on Connolly, who in his editorial states, "They screened 2547 patients in general practice clinics."³

As we have consistently argued, the findings of the original treatment studies and now these newer studies must be interpreted in the context of trials conducted on selected, secondary care, populations. It is still not clear how these findings translate to the general, primary care, population. We are currently undertaking a randomised controlled trial (Birmingham atrial fibrillation treatment with anticoagulation) of warfarin versus aspirin for patients aged 75 and over with atrial fibrillation who have been identified from general practice. This is a five year study and should answer the question of effectiveness within this defined population.

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Cohort was younger than many patients with atrial fibrillation in primary care▲

EDITOR —Kalra et al's paper extends our knowledge of how effectively research into stroke prevention in atrial fibrillation can translate into clinical practice.¹ However, the authors studied patients recruited in district general hospitals and whose anticoagulants were controlled in hospital outpatient clinics. As a result the patients differed greatly from the whole population of patients with atrial fibrillation. The cohort studied was considerably older than that in the pooled atrial fibrillation studies but was still younger than those patients who make up primary health care teams' population of patients with atrial fibrillation (48% were aged over 75, compared with 58-72% in studies based in primary care^{2 3}).

The information given about the frequency with which the international normalised ratio was measured implies a mean of about 27 hospital tests per patient over two years. This will have excluded from analysis all those who were unwilling or unable to meet this commitment, including many of the frailest patients, about whom general practitioners are especially concerned when it comes to deciding whether to start anticoagulation. Pragmatic studies of effectiveness must be based on the whole population of patients with atrial fibrillation and on the fact that blood samples for measurement of international normalised ratios will often have to be obtained in surgeries or in patients' homes and the results applied by primary health care teams.

A literature is beginning to develop which suggests that in unselected primary care populations about half of all patients with atrial fibrillation will be considered for anticoagulation and will accept that advice.^{2 4 5} This may be the level against which performance should be judged. If so, it sets a limit on our ambitions and may help us to be more realistic about the likely effectiveness of applying the evidence. It also means that, although there is undoubtedly scope for identifying more people who should be offered treatment, current levels of anticoagulation represent an existing penetration of evidence twice as great as the raw figures suggest.

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General practitioners have to decide best ways of allocating their time▲

EDITOR —In their study of warfarin for patients with high risk atrial fibrillation Kalra et al showed that 296 patient years of warfarin treatment reduced ischaemic stroke by an amount comparable to that in clinical trials.¹ Connolly's editorial

says that meta-analysis of trials shows that the risk of ischaemic stroke is reduced by two thirds and asks why warfarin is underused.²

In Kalra et al's study six ischaemic strokes occurred. Assuming a risk reduction of two thirds then around 12 were prevented. Five major bleeds and 16 "minor" bleeds occurred, the minor bleeds including epistaxes, rectal bleeding, haematuria, and haemarthrosis.

General practitioners are frequently asked to manage anticoagulation. Many areas have poor anticoagulant clinics, and patients in rural areas or in residential care may be unable or unwilling to travel. A blood test for these patients will need a home visit by the doctor. We can assume that seven blood tests are needed for initial stabilisation, and a further 23 per patient will be needed over two years at the 31 day intervals used by Kalra et al. Assuming 10 minutes each, this is five hours of a doctors' time, not including travel, "while you're here doctor" consultations, and dealing with complications (Kalra et al recruited 167 patients, of whom 18% dropped out), repeat prescriptions, and inquiries about coprescriptions, etc.

By doing the above for about 12 patients for two years we prevent one ischaemic stroke and generate 1.7 bleeding complications (in everyday practice the treatment may not be so well targeted, so results may be less impressive). As Moss points out in an editorial, the United Kingdom has fewer doctors and nurses than other developed nations, and general practitioners are not short of work.³ The problem is our underresourced system of care, which forces general practitioners to make difficult choices about how to allocate their time.

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Rapid anticoagulant testing is not available in general practitioners' clinics in Japan▲

EDITOR—Kalra et al reported that anticoagulation in non-valvular atrial fibrillation yielded comparable rates of stroke and major complication in clinical practice to those obtained in trials.¹ Pooled data from randomised controlled studies in patients with atrial fibrillation showed that anticoagulation reduced ischaemic stroke by two thirds.² Despite such a dramatic benefit, warfarin is underused in patients with atrial fibrillation in clinical practice,³ particularly in elderly rural patients.⁴

I wished to see why warfarin was not prescribed to patients with atrial fibrillation with risk factors for stroke in a clinical setting. A questionnaire was sent to 40 general practitioners in 30 clinics in Kochi, Japan; 30 doctors in 20 clinics responded. In 10 clinics, most of which provide primary care with no beds for admission or fewer than 20 beds, rapid anticoagulant testing in their own facilities was not available. Almost half of the doctors (14) prescribed warfarin for only a

tenth (or less) of patients with atrial fibrillation, and three of the doctors prescribed anticoagulation for half or more of their patients with atrial fibrillation.

Conversely, antiplatelet treatment was substantially used; just over half of the doctors (16) prescribed aspirin or ticlopidine for half or more of their patients with atrial fibrillation. The target therapeutic range for more than eight tenths of the doctors was an international normalised ratio of 1.5-2.5 if the prothrombin time was used and 10-30% if the thrombotest was used.

Many doctors were reluctant to prescribe warfarin to patients with atrial fibrillation who had risk factors for stroke, giving as reasons unstable anticoagulation due to bad compliance with warfarin (16), their fear of bleeding complications (12), and the unavailability of the rapid anticoagulant test (9). Patients' refusal to undergo anticoagulation (4) and the efficacy of antiplatelet treatment for stroke prevention (4) were also cited.

Many of the doctors partly ascribed underuse of warfarin to not having their own anticoagulant laboratories. If they manage patients with atrial fibrillation they request results of anticoagulant tests from laboratory services and receive the results a few days later; the time lag would make strict control of anticoagulation difficult.

Because atrial fibrillation is common⁵ and many cases are asymptomatic, not only specialists in hospitals but also general practitioners in primary care have to take responsibility for managing patients, especially in rural areas. Anticoagulant laboratory services should develop to be able to provide rapid results for general practitioners.

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Comprehensive geriatric evaluation should be routine before treatment is started▲

EDITOR—Kalra et al show that in their study the rates of stroke and major haemorrhage after anticoagulation were comparable to pooled results of randomised controlled studies.¹ The study therefore confirms that warfarin is more effective than aspirin for stroke prevention in chronic atrial fibrillation. The authors also claim that this treatment is feasible, safe, and effective in clinical practice even in elderly people. Because barriers to starting anticoagulation are not conclusively addressed, responsibility for underuse of warfarin could be blamed on doctors' lack of awareness about the benefit of anticoagulation.

We are not persuaded that this is true in all cases. Oral anticoagulation is a complex and labour intensive therapeutic modality; not only good dosing decisions but attention to detail and communication can make a difference between success and failure.² Doctors may have some concerns about starting this treatment as the risks linked to inadequate management are so large as to overwhelm the benefit of stroke prevention.³⁻⁵

Recent European studies showed that the prevalence of dementia among patients aged 65 or more is around 6.0%, doubling over each decade. On the basis of these data, we could expect that nearly three tenths of subjects aged 80 or more may have cognitive impairment affecting performance in activities of daily living. In this case, strong support by care givers and prompt availability of laboratory services are needed for regular measurement of patients' international normalised ratio. If this is not possible, doctors may legitimately opt for a less effective but more manageable thromboprophylaxis.

Kalra et al found that treatment with warfarin was stopped in 18% of patients, the reasons being death, major bleed, intracranial haemorrhage, disabling stroke, patients' choice, poor compliance, and interactions with other drugs. The authors did not assess the cognitive and functional status of their patients, but we speculate that withdrawal of warfarin was related in some cases to inadequate management of long term anticoagulation. We suggest that a comprehensive geriatric evaluation should become a routine procedure before a doctor starts this treatment.

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