

bracelet or card informing medical attendants during emergencies of their susceptibility.

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Warfarin in stroke prevention

Sir,
In their review of the use of warfarin in atrial fibrillation, Sweeney and colleagues have highlighted some of the practical difficulties in realizing the potential benefit of this treatment in general practice in the United Kingdom (March *Journal*, p. 153). We feel that they have understated the evidence of effectiveness from a recent meta-analysis¹ as well as overstated the risks by not always considering bleeding episodes in control populations. A number of apparent inaccuracies are listed at the end of this letter. In addition, there are three important clinical questions worth considering.

Is the reduction in incidence of strokes and death worthwhile? A useful way of considering this is by determining the number of patients that have to be treated with warfarin for one year to prevent one event (death, stroke, systemic embolus or transient ischaemic attack). We calculate from the meta-analysis that for patients aged over 64 years, this is between 14 and 56, depending on age and the existence of other risk factors, specifically hypertension, diabetes and previous cerebrovascular events (Table 3). This compares

favourably with treatment of hypertension where 469 patient-treatment years were necessary to prevent one stroke in the 16 trials reported in the meta-analysis by Collins and colleagues in populations with a mean age of 52 years.²

Is aspirin just as good as warfarin? For stroke and emboli prevention aspirin is approximately half as effective as warfarin and has no proven effect on overall death rate.¹ Warfarin reduces deaths by a third. This makes aspirin a second choice for most patients aged over 64 years who have atrial fibrillation, although it is certainly better than no treatment.

Are there ways of reducing the problems of warfarin therapy? Warfarin therapy is difficult to manage in general practice. The benefits outweigh the risks when therapy is carefully monitored in clinical trials; the challenge is to attain a similar quality of management in general practice. With only 15 patients with atrial fibrillation on an average general practitioner's list, and only one or two new cases per year, this should not be impossible. One option is the employment of specialist liaison nurses. We would welcome hearing from any readers who have experience of this, or any other, innovative organizational solution.

We also noted a number of important inaccuracies in the paper; these are listed in the order of the article rather than their potential importance.

The authors state that '40 patients with atrial fibrillation would have to be given anticoagulant treatment for one year to prevent one stroke. For every 1000 patients treated for one year, between 15 and 50 episodes of ischaemic stroke or systemic embolism would be avoided, at a cost of between four to six major episodes of bleeding over the same period'. According to our calculations, 33 patients would have to be treated for one year to prevent one stroke. For every 1000 patients treated for one year, between 26 and 42 strokes or systemic emboli would be prevented at the cost of three episodes of major bleeding.

On Table 1, the column heading 'relative risk of warfarin (%)' should read 'risk reduction with warfarin (%)'. The Boston

area anticoagulation trial for atrial fibrillation (BAATAF) study was not a comparison of warfarin and aspirin; the comparison was of warfarin and no treatment although the control group could take aspirin.

On Table 2, the data in the first and second columns relating to the percentage of study days where anticoagulant control fell above or below the stated range are transposed for both the Copenhagen study of warfarin and aspirin for the prevention of thromboembolic complications in atrial fibrillation (AFASAK) and the stroke prevention in atrial fibrillation study (SPAF). Also on Table 2, the data referring to minor bleeding are cumulative prevalence rates for the whole follow-up period which varied from 1.3 to 2.5 years. The column heading should state this clearly as the implication could be that it is an annual rate.

On Table 3, the final paper by Landefeld is a systematic review of 19 886 patients (3931 patients from randomized controlled trials, 4318 from inception cohorts and 11 637 from non-inception cohorts). The annual rates of fatal, major, and major and minor combined bleeding were 0.6%, 3.0% and 9.6%, respectively. Such a systematic review is likely to provide a stronger basis for discussion and action than the 10 much smaller studies quoted by Sweeney and colleagues.

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Table 3. Estimated number of patients with atrial fibrillation who have to be treated with warfarin for one year to prevent one event (death, stroke, systemic embolus or transient ischaemic attack).

Age (years)	No. of patients needing warfarin who have	
	No additional risk factors ^a	1+ additional risk factors ^a
<65	Infinite	31
65-75	31	25
>75	56	14

^aAdditional risk factors are a history of hypertension, diabetes, stroke or transient ischaemic attack.