Neurological comment

The dilemma of whether anticoagulant treatment reduces the likelihood of ischaemic stroke (and embolism generally) in patients with non-rheumatic atrial fibrillation, without causing unacceptable risk has been around for decades. At long last there are enough good data for reviewers like Dr Nolan and Dr Bloomfield to write something other than an expression of opinion based on anecdote and non-randomised comparisons. The risks of anticoagulants have been well appreciated but now the recent randomised trials give us some idea of the benefit of treatment, though an even better idea would come from a formal overview (or meta-analysis) of all the available randomised trials, particularly if the trialists were to pool individual patient data to examine risk and benefit in subgroups of interest (for example, the elderly and those with chronic fibrillation rather than paroxysmal fibrillation). Of course the costs must be considered as well. I suspect that providers and purchasers in the reformed NHS have very little idea of what anticoagulant really costs (what price a gastrointestinal haemorrhage?) and no idea at all about the cost of a stroke (what price granny’s stroke if she can no longer look after the grandchildren to allow their mother to go out to work?). If treating 1000 fibrillating patients for a year does prevent about 25 of them from having a stroke, then 40 people must be treated to prevent one having a stroke during that period. “Is this worthwhile?” and “can we afford it?” are questions that providers and purchasers had better start working on fast, because I am certain that cardiologists and others will be anticoagulating a lot more patients, as Nolan and Bloomfield recommend. If aspirin is as effective or nearly as effective as anticoagulation then this treatment seems to be less risky and also more cost effective. This question re-emphasises just how extraordinarily important it is that recruitment into SPAF II and similar trials continues and that it is not assumed that for primary prevention of stroke in non-rheumatic atrial fibrilla-
tion it must be anticoagulation or nothing.

These, however, are not issues that neurologists are supposed to debate—because we see patients after the stroke. Of course, we certainly will debate them vigorously if anyone suggests that our clinics are turned over to anticoagulating thousands of fibrillating pre-stroke patients rather than allowing us to get on with neurology—which is not quite so therapeutically hopeless as some cardiologists seem to think. The main questions for neurologists and others who treat stroke patients are:

(a) In a fibrillating stroke patient was the stroke caused by cerebral infarction or primary intracerebral haemorrhage (PICH), a distinction that can only be made reliably in life with an early computed tomodogram (CT) scan. Scanning patients more than a week or two after onset does not exclude PICH because the high intensity signal of the haematoma may have gone by then. One cannot assume that the stroke must have been caused by an infarct (about 11% of patients with a first stroke caused by primary intracerebral haemorrhage are in atrial fibrillation).

(b) If the stroke was caused by an infarct, was this related to the atrial fibrillation or was it due to something else requiring quite different treatment (for example, carotid stenosis and embolism to the brain, vasculitis, or trauma to neck arteries)? Usually the diagnosis of cardioembolic stroke is one of exclusion of other more likely causes. Even echocardiography is no great help because seeing thrombus in the left atrium does not necessarily mean that a bit of thrombus has embolised or that another bit will embolise, and if there is no left atrial thrombus this may be because it is too small to be seen or because it has all embolised.

(c) If the patient has, we assume, embolised from the left atrium to the brain and was already taking anticoagulants we must consider whether the dose was adequate. If the patient was not being treated with anticoagulants, should this treatment be started for secondary prevention of stroke? This is difficult to answer because the risk–benefit relation (and cost) may be quite different from primary prevention. However, the European Atrial Fibrillation trial has now finished recruitment and an answer to the question may emerge after a few years of follow up. In the meantime, it seems reasonable to use aspirin for secondary prevention, because it is at least safe and reduces the risk of serious vascular events by about 25% in a broad range of “at risk” patients presenting with vascular disease, including ischaemic stroke.

(d) If the stroke was haemorrhagic and the patient was on anticoagulants should the treatment be stopped, and if so for how long? This is a very tricky question. Firstly, we must be quite sure that the haemorrhage was a primary event rather than haemorrhagic transformation of an infarct, a distinction that in some cases can be surprisingly difficult on computed tomography. The definitive test is to have an early computed tomodogram showing an infarct which on a later CT scan shows haemorrhagic transformation. Haemorrhagic transformation can occasionally occur remarkably early after stroke onset, perhaps within hours. This then is another reason to get a CT scan at once in a fibrillating stroke patient. If there is a primary intracerebral haemorrhage then I think anticoagulants should be stopped and the reason for using them at all in that patient reviewed. If there was, and still is, a really good indication for anticoagulation, and if the PICH was thought to be due to excessive anticoagulation, and if such an excess can be avoided in the future, then maybe cautious anticoagulation should be re-started after two or three weeks.

The recent randomised controlled trials of anticoagulation have been landmarks but like all good experiments they have raised more questions. The dilemmas are still there but they are different dilemmas, not so much to do with the effectiveness of anticoagulation for primary stroke prevention but with cost effectiveness: is aspirin just as good and much cheaper and how should fibrillating patients be managed after the stroke when primary prevention has failed?

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3 Sandercock P, Bamford J, Dennis M, Burn J, Slater J, Jones L, Boonyakarnkul S, Warlow C. Atrial fibrillation and stroke: frequency in different stroke types and influence on early and long-term prognosis. BMJ (in press)