Holter Monitoring Is Useful

To the Editor:

It is important to examine accepted standards of care critically and ignore past assumptions as Schaer et al have done.1 We also routinely perform Holter monitoring for 24 hours on patients with stroke and transient ischemic attack (TIA), looking for evidence of paroxysmal atrial fibrillation (PAF), and like Schaer et al, we find it a test with a relatively low yield. Nonetheless, we disagree with their conclusion that routine Holter monitoring is not useful.

First, in their article, Schaer et al suggest that the prognosis of PAF is not known and that there is little evidence to guide its treatment. However, the Stroke Prevention in Atrial Fibrillation studies and, more recently, a patient-level meta-analysis of 6 randomized controlled trials (comparing aspirin with anticoagulation) have clearly shown that patients with PAF and previous ischemic stroke or TIA carry a risk of recurrent stroke and benefit from anticoagulation in an identical manner to patients with chronic AF.2,3 Furthermore, recent guidelines jointly issued by the American College of Cardiology, the American Heart Association, and the European Society of Cardiology state that the criteria used to select antithrombotic medication for patients with persistent and paroxysmal AF should be the same.4 As such, we believe that the suggestion by Schaer et al that, after ischemic stroke or TIA, the diagnosis of PAF has an uncertain impact on choice of antithrombotic medication to be very misleading.

Second, the analysis by Shaer et al appears to have focused on the cost of Holter monitoring rather than on its cost-effectiveness. Consider: the risks of sustaining a further and disabling stroke in patients with AF and a previous stroke or TIA are large;2 the costs associated with their care, both in-hospital and over the long-term in the community, are very high; yet anticoagulation is capable of preventing a considerable proportion of these recurrent events.3 Hence, even at a yield of only 2%, the estimated cost of about $10 000 per case of PAF found would appear to be good value for the money. Indeed, Shaer et al excluded 12 patients with runs of AF of up to 20 seconds from their definition of PAF. Further 24 hour (or longer) Holter examinations in these patients, and perhaps even in the entire study cohort, might well reveal further patients with definite PAF,5,6 further increasing cost-effectiveness. Certainly, our practice would be to anticoagulate patients experiencing ≥20 seconds of AF demonstrated on a Holter monitor tracing. As such, we suggest that the routine use of Holter monitoring in patients with ischemic stroke and TIA (especially in older patients, those with palpitations, and those where no other cause has been found)1,7 be reconsidered. We would welcome a formal economic analysis of this position.

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Response:

We thank the editor for giving us the opportunity to reply to the letter of Weir and Hill.

We stated that there are no clear-cut guidelines regarding the impact of paroxysmal atrial fibrillation (PAF) diagnosis on future treatment and prognosis, because there are no prospective studies that assess the benefit of anticoagulation for secondary prevention in patients with PAF and stroke or transient ischemic attack (TIA).

The problem of published AF prevention trials so far is (1) that patients with PAF as opposed to those with persistent AF were under-represented and (2) that PAF usually was not well defined in terms of frequency and duration (total AF-burden), which makes it difficult (if not impossible) to apply the findings of these trials to PAF patients in general.1

It is undisputed that the risk of recurrent stroke or TIA in patients with persistent AF is high. In the European Atrial Fibrillation Trial (75% persistent AF, patients with a history of TIA or minor stroke), the 1-year rate of recurrent strokes was 4% with anticoagulation, 10% with aspirin and 12% with placebo.2 Thus, the number-needed-to-treat in this particular secondary prevention trial was 16. Based on the findings of the primary prevention trial by van Walraven and coworkers,3 the reported stroke reduction by anticoagulation was 32% lower in patients with paroxysmal (1.5 events per 100 patient-years) compared with those with permanent AF (2.2 events per 100 patient-years), suggesting that for patients with PAF the number-needed-to-treat in secondary prevention would rather be around 20 or even higher. However, it should be emphasized that this number is not statistically proven, and hence may even be completely wrong. But given a number-needed-to-treat of 20 for PAF patients and a rough estimate of $17 000 for one drug regimen modification (to switch from
ASS to oral anticoagulation), these costs would wind up being $340,000 per prevented recurrent stroke, a sum that commonly is not recognized to be cost-effective.

We excluded patients with atrial bursts of less than 30 seconds, which per definition according to current guidelines cited in our paper is not classified as AF. We would strongly argue the statement of Weir and Hill that they certainly would treat patients with “AF” bursts of less than 30 seconds duration on Holter with oral anticoagulation, because there are no data at all in the literature to support their statement. We simply do not know, which is fair enough to explain to our patients.

In summary, we still believe that the additive value of routine Holter monitoring has only a very limited effect on the clinical management of patients with TIA or stroke and is not cost-effective at all.

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