Reviewer’s report

Title: Stroke with atrial fibrillation or atrial flutter: descriptive population-based study from the Brest Stroke Registry.

Version: 1 Date: 21 January 2015

Reviewer: Ben Lacey

Reviewer’s report:

Many thanks for asking me to review this article.

The article reports that 31.0% (n=264) of patients who presented with stroke in 2008 in Brest, Northern France, had atrial fibrillation (AF); strokes were identified by a population-based stroke registry. Of those patients with AF, 78.4% had been diagnosed prior to the stroke event. In stroke patients with AF assessed by the researchers as at high risk of thromboembolic stroke (using the CHADS2 score; n=152) 35.5% were being treated with a vitamin K antagonist, such as warfarin.

This is an interesting study with a number of strengths, including: good ascertainment of stroke events from a large population based registry; a thorough assessment of whether AF was present before, or at the presentation, of stroke; and collection of detailed information on medication use and medical history which allows the calculation of the CHADS2 score.

Major Compulsory Revisions:

1. Abstract: the results section needs to be rewritten to improve clarity. For example, line 39 - the ‘78.4%’ in parentheses uses those stroke patients with atrial fibrillation as the denominator, rather than all stroke patients, but this is not made clear; likewise, the denominator of the ‘35.5%’ in line 40 is patients with CHADS2 scores #2 rather than those with know AF at the time of stroke, but this is also not clearly expressed; it might help if the percentages were reserved for the key findings only (i.e. the overall and age-specific prevalences, the proportion previously diagnosed with AF and proportion being treated with vitamin K antagonist).

2. Methods: The methods needs a more lucid explanation of the second definition for stroke (lines 94-96): what constitutes an abnormal brain image, what is a clinically relevant picture, and does the abnormal brain imaging associated with a clinically relevant picture refer to both focal deficits lasting more and less than one hour? This is important for comparison with other studies as the definition may include events classified elsewhere as transient ischaemic attacks.

3. Results: Even though it is reasonable to report the overall proportion of strokes in which patients had AF, the strong association with age means that reliable comparisons which other studies cannot be made unless this proportion is standardised to the age distribution of standard population, or at least the
age-specific results are reported in the appendix.

Minor revisions
1. Abstract: line 35 - CHADS2 score needs to be described, however briefly.
3. Background: The background needs to make it clear in what population(s) the incidence and prevalences are calculated.
4. Methods: I could not find the definition for haemorrhagic stroke in the paper referenced on line 101, as proproted.
5. Results: the proportion given on line 146 is among all stroke rather than among the 835 strokes reported.

Discretionary revisions
1. The paper refers to cardiac arrhythmias but it is perhaps better to described these throughout the paper as atrial fibrillation (as in the title) and just make it clear that a very small proportion of events are atrial flutter.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests