Reviewer's report

Title: Scarcity of atrial fibrillation in a traditional African population: a population-based study

Version: 2  Date: 14 February 2014

Reviewer: Jared Magnani

Reviewer's report:

The authors have made significant revisions to the manuscript. Thank you for incorporating a range of suggestions. In my perception, this presentation is stronger than the prior version. The manuscript is well written and informative. Further considerations for the authors are:

1. Please change the wording in the abstract conclusion by removing the word "essential." As you point out in your responses, causes for AF are diverse. It is hard to argue in the epidemiology of AF (or any disease, for that matter) that an exposure is essential. There is a lot of residual confounding in the cohort being studied; we don't know if there is a protective effect from lifestyle, environment, or perhaps genetics that informs the low prevalence of AF that was observed.

2. In Western AF literature (meaning essentially the U.S.), there has been a growing recognition that AF has been less commonly identified in individuals of African ancestry. It is particularly interesting because African-Americans have a higher prevalence of diabetes, hypertension and obesity (in general) than whites. These racial differences have been studied in the REGARDS Study, for example. However, AF has been shown to be less prevalent in American blacks. Some have called this dissonance between risk factor burden and AF prevalence a "racial paradox." (For further discussion, please see Soliman EZ, Alonso A, Goff DC Jr. Future Cardiol. 2009 Nov;5(6):547-56. PMID: 19886781 doi: 10.2217/fca.09.49). The authors may consider integrating what is known about racial differences in other populations into their introduction and discussion. Including this material may contribute to the manuscript.

3. The last sentence of the introduction is again troubling. As an epidemiologist, I am always aware of the unknown, the burden of residual confounding. In my view it is a hollow argument to say that taking away the western lifestyle takes away the disease. These measured, defined exposures (obesity, hypertension, etc.) are surely not the only differences between this cohort and those who have a "western lifestyle."

4. Further, in keeping with my prior concerns about generalizability, I find it difficult to refer to a "western lifestyle." The world is far too complex and while differences do exist, and are profound, between nations and cultures and hemispheres, it seems like a vast over-simplification to compare a limited-sized cohort to the West.
5. On the contrary, the authors may use the introduction to establish a hypothesis or objective for performing the assessment. Identifying risk factors and cardiovascular disease prevalence in an African cohort is informative.

6. The statistical analysis section can be enhanced.

7. The comparison with the U.S. cohort regarding AF prevalence is problematic. In the ATRIA study, individuals may have had more than one electrocardiogram and had opportunities for serial monitoring. ATRIA is data from a health maintenance organization, so is also difficult to compare to this cohort. In that study also, sicker individuals, those with a greater number of AF risk factors, would likely selection for more likely detection of AF. My stance is that the comparison with ATRIA is very limited and -- in my point of view-- without meaning. Instead, I think these data are informative on their own. My opinion is that comparing to ATRIA, because of the markedly different methods and design, has limited validity and is a distraction.

8. The concluding paragraph again backs into implicit causality that this western lifestyle is causative for AF. The findings here do not explain the high prevalence of AF in Asian countries. These findings do not control for many factors that contribute to AF risk.

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

**Quality of written English:** Acceptable

**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.