Reviewer's report

Title: Brief episodes of rapid irregular atrial activity (micro-AF) are a risk marker for atrial fibrillation: A prospective cohort study

Version: 1 Date: 29 Dec 2019

Reviewer: Trygve Berge

Reviewer's report:

Thank you for the opportunity to read and review your manuscript, "Brief episodes of rapid irregular atrial activity (micro-AF) are a risk marker for atrial fibrillation: A prospective cohort study". The manuscript is well written, easy to read, and the language is generally good. The Background section provides a precise and to-the-point introduction to the topic. The term "micro-AF" is easy to understand. However, it does not seem completely clear to the reader whether this term has been used previously, or whether the term is presented by the Authors now. Although it becomes reasonably clear later, in the Discussion section; "...our micro-AF definition" (page 10, line 48), you may consider pointing this out more clearly (but briefly) earlier in the manuscript. The Methods section is good and well written, and it is of great value that you have explained advantages and disadvantages of the R-test device. The Results section is well written, with clearly presented results (including results tables). The only aspect of potential interest that I miss, is the prevalence of SVEBs and SVTs found on the R test readings. As currently presented, the R test is only used to identify "true" AF and AF burden (with the obvious limitations inherent in the R test). What about stored episodes of SVEBs and SVTs, which you according to Suppl Table 1 had preset the R test to store? Although many of these would have been missed, due to the limited 60-minute storage time, it could be of interest whether there was an observed difference in the prevalence of these findings between the micro-AF and control group. It may also be of some value to state whether any action was needed (or not) from other R test findings. E.g., did you identify any VT or pauses that prompted further investigations of the study participants? The Discussion section is also well written, however the section describing the Swedish cohort (Johnson et al, ref 15), at page 10 (line 31-51), is a bit detailed and the point could have been presented a bit shorter. Furthermore, the crucial point made on page 11 (line 10-17) could be elaborated a bit more, and I am not sure if I completely agree that these findings "indicate" that micro-AF is both a risk marker for AF and a sign for undetected AF? You may, at least, consider to tone down the statement by replacing "indicating" with "suggesting". Other minor/discretionary comments: Page 5, line 24-34: You have written both "one-lead" and "1-lead" ECG, and may decide for one of these phrases (the same applies for the rest of the manuscript, where both terms are used). I assume the "baseline" 1-lead ECG performed on all participants was also made using the Zenicor device? This is not completely clear as the manuscript is written now. Page 6, line 39: "significant arrhythmias"; according to the R test settings presented in Suppl table 1, it may be more correct to write "significant ECG characteristics/findings"?

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.
Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.
I declare that I have received minor honoraria/speaking fees from Boehringer-Ingelheim, Bayer and Pfizer/Bristol-Myers Squibb, for lectures related to AF screening and stroke prevention.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors’ responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal.