Reviewer’s report

Title: Risk Factors for Medication Non-Adherence among Atrial Fibrillation Patients

Version: 0 Date: 07 Dec 2018

Reviewer: Josh Niznik

Reviewer's report:

Thank you for the opportunity to review this manuscript. This paper presents the findings of a cross-sectional analysis that sought to identify factors associated with medication non-adherence in patients with Atrial Fibrillation. The manuscript is well written and very clear to understand. There are, however, a few points in the methods that either require justification or additional detail per my comments below.

Abstract:

Please include a brief description of how medication non-adherence was defined, if possible.

In results, please include the reference categories were in the comparisons that you present to help with interpretation.

In conclusions section, I would avoid saying that "potentially modifiable" factors were associated with non-adherence as many of the factors presented are actually non-modifiable, or if they were, would not necessarily result in improved adherence.

Introduction:

Page 4, line 37 - The authors reference a study reporting rates of anticoagulation discontinuation to justify the significance of non-adherence in this population. However, discontinuation and non-adherence are two distinct concepts. I would suggest the authors acknowledge this distinction and refer to non-adherence consistently throughout the introduction and discussion.

In the introduction, the authors spend significant effort trying to justify why medication adherence is so important in AFib, yet this analysis addresses medication adherence generally, rather than focusing specifically on adherence to medications used to treat AFib. This seems to be a disconnect and puts into question the significance of these findings in this population. This should be addressed in the discussion.
Methods:

Study Population - Were patients required to be on treatment for AFib in order to be included in your sample? If not, why? This requires justification and discussion in the paper. In the results (Table 2), the distribution of CHADS2 scores falls below the threshold that usually warrants treatment for AFib, indicating there were probably a number of untreated patients in your sample. This again puts into question the significance of these findings since for some patients, medication adherence cannot be extrapolated to the medications used to treat AFib.

Results:

Please explicitly state the relationship between age categories and adherence in the results section. In the discussion section, the authors state that age 65-84 was associated with a lower likelihood of non-adherence, but they fail to mention this in the results. Please be consistent.

Tables are nice, however, please make columns left justified for reading.

Discussion:

Page 9-10, lines 162-180 - The authors discuss the low prevalence of non-adherence in their sample, compared to prior studies. Per my comment above, the authors need to address the fact that medication adherence in this study was not specific to anticoagulants or antiarrhythmic medications. This is important to consider when interpreting the overall rate of non-adherence as well as the implications of the findings presented in this analysis. Essentially, this analysis presents factors associated with medication adherence in a population with AFib, rather than factors associated with non-adherence in the treatment of AFib. The discussion section needs to reflect this. Again please be consistent with discontinuation vs. non-adherence. The studies referenced here are the same as what was referenced in the introduction and carry the same problem.

Page 10, lines 171-175 "Nonetheless, using a brief self-reported measure of medication adherence, such as the 3-question instrument used in this investigation may be advantageous in a clinical setting..." - This statement should be removed. Justifying whether a medication adherence tool is advantageous in a clinical setting is irrelevant to whether or not its use was appropriate in this investigation or whether it impacted results.

Page 10-11, lines 181-194 - These two paragraphs should be re-worked so that there is more discussion of the results and potential explanations for the findings of the analysis, rather than just listing them.
This statement regarding the time of data collection and new anticoagulants entering the market is somewhat irrelevant as assessments of adherence were not limited specifically to anticoagulants or antiarrhythmics.

Conclusions:

The authors mention risk factors for non-adherence that may be potentially modifiable, but fail to address in the discussion section. This should be included in the discussion and identify which are modifiable and which are not.

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

No

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

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