Reviewer’s report

Title: Better clinical outcome with direct oral anticoagulants in hospitalized heart failure patients with atrial fibrillation

Version: 0 Date: 04 Aug 2017

Reviewer: Stelios Tzeis

Reviewer's report:

This is a single center retrospective study assessing the survival status of AF patients derived from a pool of hospitalized patients with heart failure based on the anticoagulant treatment prescribed at discharge. The patients have performed a meticulous follow up and have concluded that NOACs result in reduced mortality as compared to VKA after performing a propensity score analysis.

The study has methodological limitations that should be addressed by the authors.

The major caveat of this study that affects the main results is the variable selection in propensity score matching. The authors do not explain why they selected age, body weight, CHA2DS2-Vasc score, HAS-BLED score and creatinine clearance as "clinically relevant variables". This number of potential confounders is limited and seems highly likely that considerable confounding effect exists. The authors should explain the concept of selecting only these confounders and evaluate whether controlling more confounders influences the study results.

A major caveat of the analysis is whether the anticoagulant treatment administered at hospital discharge was continued during the follow-up period. The authors should report data regarding patients' adherence to the prescribed regimen, percentage of patients crossing over to other type of treatment or discontinuing their allocated treatment due to adverse events.

The authors should provide a more structured explanation than the one reported in the introduction, why they expect that the patients' hospitalization status may modify the prognostic effect of NOAC treatment as compared to outpatients with a history of heart failure. The latter patients, studied in the large megatrials, have been occasionally hospitalized due to decompensation of heart failure.

The discussion is wordy and should primarily focus on commenting the results and strengths of the study.
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.

No

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 recommend additional statistical review

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Please indicate the quality of language in the manuscript:

Acceptable

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