Reviewer's report

Title: Atrial fibrillation following cardiac surgery: Risk analysis and long-term survival

Version: 1 Date: 22 May 2012

Reviewer: Ari Mennander

Reviewer's report:

Thank you for the privilege to review the manuscript "Atrial fibrillation following cardiac surgery: Risk analysis and long-term Survival" by Dr Helgadottir et al.

This study provides additional information on postoperative atrial fibrillation occurring after cardiac surgery including patients undergoing CABG, off pump CABG, AVR with or without either CABG or off pump CABG. The main attempt is to describe a patient risk profile for postoperative atrial fibrillation after cardiac surgery. Extensive statistical analysis has been included. I would like to raise the following issues and for the sake of interest look forward for reviewing:

Major comments:

1. As the strength of the study is the large patient cohort included from a single institution, this fact also remains the weakness of the study: the heterogeneous demographics of the patients undergoing different surgery, not only CABG, but also off pump CABG, including patients with AVR. Certainly, the operational details such as aortic cross clamp time and perfusion time also affect outcome, as discussed in the manuscript. Why did the authors choose such a heterogeneous study group?

2. The Figures are excellent, why was gender and EF deleted from the risk profile/probability? Please explain.

3. Legends of figures do not match.

4. There is a rather high percentage of patients undergoing off pump CABG, what were the indications for off pump instead of traditional CABG?

5. How was cardioplegia administered, via ante-/ or retrograde? E.g. did you have warm or cold cardioplegia


7. Abbreviations could be included on Tables for clarification.

8. While some postoperative complications may be explained due to
postoperative atrial fibrillation, the incidence of arrhythmia in itself may also be the consequence of various complications after surgery. Would it be possible to categorize postoperative atrial fibrillation into paroxysmal, persistent and permanent?

9. Did the patients have thyroid disease or excess alcohol consumption, factors importantly affecting incidence of atrial fibrillation?

Minor comments:

10. Page 7 and 10, what is "sternal insufficiency"?

11. Please clarify 1rst sentence of Discussion.

13. Discussion, 2nd paragraph: "revascularization"?

14. Discussion, 4th paragraph: "recieved"?

15. Discussion, 6th paragraph: "potenially"?

16. Discussion, 7th paragraph, the wording "necessarily" of the sentence?

**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