Reviewer's report

Title: Trends in the use of electrical cardioversion for atrial fibrillation: influence of major trials and guidelines on the clinical practice

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Reviewer: Luca Santini

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Major compulsory Revisions

The authors present an interesting population study regarding the use of ECV in AF in Catalonia. Aim of the study was to assess the frequency of ECV performed, the characteristics of the population and the influence of major clinical trials and guidelines to clinical practice. The initial survey was conducted in 2003 and the follow-up in 2010.

This is a well written manuscript, nevertheless has an important defect (clearly stated by the authors themselves in the limitation section) which anyway does not prevent publication : in the manuscript is not reported the total number of AF patients that actually arrived in the hospitals for treatment.

Such a data is not available and the authors assume that, as AF shows an increasing prevalence, due to the aging of population, the reduction of ECV performed in 2010 compared to 2003, indicates anyway a decrease in the proportion of patients treated with rhythm control strategy.

1. Actually I agree these findings clearly show a significant decrease of the using of ECV in 2010 compared to 2003, but they are not sufficient to assume a clear reduction in choosing the rhythm control strategy in 2010.

In fact, in order to assess that in 2010 there was also a lower use of the rhythm control strategy (including also AF ablation, which significantly spread out in the last decade) it would be important, at least, to include a brief report of the numbers of AF ablation performed in 2003 and 2010 in the same centers in Catalonia, in order to have a complete picture of the difference concerning the choice of the rhythm control strategy between 2003 and 2010.

2. In addition in the manuscript is not reported the number of patients treated (in 2003 and 2010) with antiarrhythmic drugs before ECV and how many of them where converted to SR only by pharmacological treatment.

3. Another issue is that it is not reported whether the same physicians in 2003 ad 2010 enrolled for the study.

I believe it would be to great interest if authors could in some way gain access and added the information to the manuscript. In this way the manuscript would be more complete and really represent the population and the choice of treatment in Catalonia.
4. Moreover, at the beginning of discussion, authors refer to AFFIRM and RACE trials as they correlate, few lines later, the results of these studies with the findings of their survey in 2010. They correctly underline how the analysis of these trials demonstrated no difference in mortality or stroke rate between patients assigned to rhythm or rate control strategy. These results are generally interpreted as showing that either rate control or rhythm control is a suitable strategy in a patient with AF. However, I would suggest to add few lines to underline also the important limitations of these trials, which have been showed by several following sub-studies (such as: Corley, SD., Epstein, AE., DiMarco, JP., Domanski, MJ., Geller, N., Greene, HL., et al. (2004) Relationships between sinus rhythm, treatment, and survival in the Atrial Fibrillation Follow-Up Investigation of Rhythm Management (AFFIRM) Study. Circulation. 109:1509–1513) that clearly showed that it would be incorrect to extrapolate it is not worthwhile to attempt to restore sinus rhythm for a multitude of reasons (low percentage of SR patients in the rhythm control group, low efficacy of AAD, quite high percentage of SR patients in the rate control group, the increased risk of death due to AAD, lower use of betablockers in rhythm control group, exclusion from the trial of patients with severe symptoms that would most benefit from sinus rhythm). In fact, when the data from these trials are analyzed according to the patient’s actual rhythm, the benefit of sinus rhythm over AF becomes apparent. Therefore authors could state that results of these studies may reflect the ineffectiveness of the rhythm control methods used and that they are not a comparison of sinus rhythm and AF.

Minor essential revisions.

1. Change “Feb” with February
2. Add a table reporting data regarding success rate, biphasic vs monophasic shock in 2003 and 2010, number of shock and energy used.

**Level of interest:** An article of importance in its field

**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' below