Author's response to reviews

Title: The health care setting rather than medical speciality impacts on physicians adherence to guideline-conform anticoagulation in outpatients with non-valvular atrial fibrillation: a cross sectional survey.

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Author's response to reviews: see over
Dear Dr. Whalley and Professor Brunner-La Rocca,

Thank you for evaluating our manuscript No. MS: 1671488316568108 by Gerber et al. entitled “The health care setting rather than medical specialty impacts on physicians adherence to guideline-conform anticoagulation in outpatients with non-valvular atrial fibrillation: a cross sectional survey.” for publication in *BMC Cardiovascular Disorders*. We thank Professor La Rocca for his helpful comments and we are pleased that he considers our work to be ‘an article of importance in its field’. Here, we submit the revised version of the manuscript taking all the reviewers suggestions into consideration as described below in a point-by-point revision. We hope that this revision has improved the quality of the manuscript and has sufficiently strengthened the key points of our survey to render it suitable for publication in *BMC Cardiovascular Disorders*.

Thank you for your time and consideration in this matter.

Sincerely yours,

Bernhard Gerber, MD

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Zürich, 23rd November 2011

Re: MS: 1671488316568108

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Bernhard Gerber, MD
Point-by-point revision

Major Compulsory Revisions

1. **The authors speculate with respect to potential factors for relatively poor guideline adherence for initiation of OAC. Most of these speculations are not really supported by the data. Most importantly, it would be interesting to know if the authors asked why guidelines were not followed. In general, it is not precisely clear which questions were asked. To be able to better interpret the results, it would be interesting to see the questionnaire as appendix to this paper.**

   As suggested by the reviewer, interpretations were supported by more data whenever possible and conclusions that were drawn without a solid body of evidence were more clearly indicated as being speculative in the Discussion section. We fully agree with the reviewer that reasons for non-adherence are an interesting topic. However, when we designed the questionnaire, we focussed on clinical practice and did not specifically address the reasons why physicians do not follow the guidelines. We think, that additional studies highlighting the interdependence of guideline adherence and the health care setting would be of major interest.

   To enable the reader to better interpret the results we added the questionnaire as appendix to the paper.

2. **Depending on the actual answers/results, the interpretation of the results should be tempered and clearly mentioned as speculative (or if more data are available, they may be presented in a less speculative way).**

   We agree with the reviewer and tempered the more speculative interpretations in the Discussion section as mentioned above.

3. **The conclusion is also rather speculative and not really related to the results of the survey. I would skip a large part of it.**

   We agree with the reviewer and skipped the more speculative statements in the conclusion section. Furthermore we focussed our conclusion on the main topic of our survey, namely the anticoagulation and its initiation regimens.

4. **I would like to see some comparison with previous surveys using the methods used on other topics and, if there are no comparable studies, the authors should address the question why they think the used the right method.**

   Assessing the clinical practice by case vignettes is an approved and methodologically widely accepted tool in survey-based health care research [1-3]. McCrory and coworkers addressed a similar question as we did based on a case vignette in 1995 with the focus on long term anticoagulation for stroke prophylaxis [4]. They did not find a statistically significant difference in the use of anticoagulation for stroke prophylaxis in atrial fibrillation between primary care physicians, cardiologists and neurologists. However, neither the issue of the initiation of anticoagulation nor the impact of the health care setting on prescription practice were covered by this study.

5. **Furthermore, it would be interesting to hear the authors view on the representativeness of their results. Thus, how do the results of this study compare with clinical reality? What are the results on adherence in registries (ideally from the same region, but this is probably not possible). Maybe, however, there are data on other topics where the method used was accompanied with registry data. This would improve the validity of the findings significantly.**

   The reviewer raises the important question of the clinical reproducibility and representativeness of the results of our survey. It was the aim of our survey to assess the theoretical clinical practice on anticoagulation and atrial fibrillation which does of course not necessarily represent the clinical reality regarding the management of thromboembolic prophylaxis. A survey never fully represents reality. We stated this more precisely in the manuscript.

   It is known that many patients with atrial fibrillation, risk factors for stroke and no obvious contraindications do not receive oral anticoagulation. In an observational study conducted by Zehnder et al. at the University Hospital of Basel, located in the third-biggest urban center in
Switzerland (after Zurich and Geneva), 484 consecutive patients with paroxysmal or permanent atrial fibrillation were studied for risk factors for stroke, contraindications for anticoagulation and the thromboembolic strategy prior to admission. The authors found, that 31% of all patients with atrial fibrillation did not receive anticoagulation and calculated that the estimated rate of preventable cerebrovascular events was 4.9%/year [5]. This finding is in line with data from many different countries and research groups [6]. We included a sentence regarding the ‘real world setting’ in the discussion Limitations section.

6. Obviously, there was a difference between the reporting of using guidelines (e.g. CA in outpatient care 90.3% and the actual use of guideline conform OAC of 58.2%, which did not significantly differ from other groups). It would be interesting to see this difference in more detail and to hear the authors’ interpretation on this.

We agree with the reviewer that the discrepancy between the reported use of guidelines and the current clinical practice regarding the initiation of anticoagulation in the non-hospital cardiologist subgroup is striking. On the one hand the reported frequency of guideline use by the subgroup of cardiologists was high and did not differ between hospital (94.7%) and ambulatory care cardiologists (90.3%). On the other hand cardiologists working in the hospital setting reported a correct OAC initiation regimen in 89%, which was significantly higher compared to their counterparts in ambulatory care (58.2%). We presented this important finding more clearly in the Result section.

This subgroup analysis restricted to cardiologists suggests that other factors related to the health care setting impacts on clinical practice. The literature demonstrates that practicing physicians have an attitudinal-behavioral discordance concerning their positive attitudes towards clinical practice guidelines and the implementation of these guidelines into clinical practice patterns [7]. However, we can only speculate on the reasons for this discrepancy: (i) even though the cardiologists may usually be familiar with many guidelines, this might not be the case regarding this particular topic (ii) the CA disagree with the guidelines (iii) there is a lack of outcome expectancy when adhering to these guidelines as e.g. none of the cardiologists in ambulatory care has witnessed an anticoagulation induced skin necrosis which is in contrast to the other specialists. We discussed this in more detail in the Discussion section.

7. There was a huge difference in guideline use between CA, IM, and GPs in outpatient care. Any comments on this? The reported guideline adherence by GPs is anxiously low! Any comparable results by other studies?

We agree with the reviewer’s comment on the low guideline use of GPs in our study. The factors commonly influencing guidelines adherence are known and published [8, 9]. It is known that specialists usually declare a relatively high use of clinical practice guidelines (>80%) which might have to do with their usually well described clinical field involving a ‘single’ organ. However, as our data and data from others show, this does not necessarily translate into practical guideline adherence (reply #6) thus resulting in the so called ‘evidence-performance-gap’. The low use of guidelines in the GP fraction may on the one hand reflect the difficulty in keeping up with a high level of published data in a large and heterogenous medical field (e.g. >100 pages on antithrombotic therapy and VKA in the ACCP 2008 guidelines) but might on the other hand also reflect the impact of the high prevalence of multimorbid patients in family practice [10]. Multimorbid patients are often not covered in the studies underlying the clinical practice guidelines and some interventions that are beneficial in otherwise healthy individuals (e.g. intensive glucose lowering in diabetes) might proof harmful for patients with comorbidities [11, 12]. These patients present with more than one chronic condition requiring a medical intervention that would ideally be based on strong evidence and a clear-cut recommendation. In a special communication published by JAMA in 2005, Boyd and coworkers addressed this problem by creating a hypothetical patient (79 year old women with osteoporosis, osteoarthritis, type 2 diabetes mellitus, hypertension and chronic obstructive pulmonary disease). The recommendations for this patient were abstracted from the relevant clinical practice guidelines and a comprehensive treatment schedule was created: This treatment plan consisted in 12 different medications requiring 19 doses a day plus 14 non-pharmacological interventions [13]. This illustrates the limitations of current single-disease guidelines for GPs caring for multimorbid patients and might in parts explain a certain reluctance to use of guideline in clinical practice.
Minor revisions
1. It would be interesting to see if any of the factors used for adjustment (table 3 and 4) were significantly related to the correct use of OAC.

   In the final regression model 10 to 15 years of clinical experience in comparison to less than 10 years of experience (OR 3.4; p=0.061) and the case load (>5 vs. none within the previous 6 months) (OR 3.4; p=0.09) did reach a borderline association with OAC initiation adherence. To reduce the risk of a type I error due to multiple testing our analysis focused on the independent association between OAC initiation adherence and the determinant of interest (i.e. health care setting). The other factors were put into the model to control for potential confounding.

   No other factors in the regression model were independently associated with longterm OAC adherence (Table4)

Editorial requests
1. Experimental research that is reported in the manuscript must have been performed with the approval of an appropriate ethics committee. Research carried out on humans must be in compliance with the Helsinki Declaration (http://www.wma.net/e/policy/b3.htm), and any experimental research on animals must follow internationally recognized guidelines. A statement to this effect must appear in the Methods section of the manuscript, including the name of the body which gave approval, with a reference number where appropriate.

   The survey was based on voluntary participation. No financial incentives were provided. Hence, no formal informed consent was obtained from the participating physicians. This information was added in the Methods section.

2. Consent: Please mention whether written informed consent was obtained from the patients. A statement to this effect must appear in the Methods section of the manuscript.

   No patients were involved in this survey.

3. Please change/reword Contributors to AUTHORS' CONTRIBUTIONS SECTION

   The title of this section was changed accordingly.

4. Please make the following formatting changes during revision of your manuscript. Ensuring that the manuscript meets the journal's manuscript structure will help to speed the production process if your manuscript is accepted for publication.

   We made the requested formatting changes to ensure that the manuscript meets the journals structure.
References


