Reviewer's report

Title: Management of oral anticoagulation after cardioembolic stroke and stroke survival – data from a population based stroke registry (LuSSSt)

Version: 2
Date: 26 June 2014

Reviewer: Isabella Canavero

Reviewer's report:

Thank you for the opportunity to review “Management of oral anticoagulation after cardioembolic stroke and stroke survival – data from a population based stroke registry (LuSSSt)”. This paper describes prescription rates of oral anticoagulants in cardioembolic AF stroke patients enrolled in the Ludwigshafen Stroke Study, stratified by multiple clinical factors including timing of prescription, and their association with mortality and stroke recurrence in a medium-term period. The authors report suboptimal implementation of anticoagulant therapy after discharge.

I have really appreciated the aim of this study, because the correct management of these drugs is still unclear, moreover it is very difficult to analyze.

However, I have some suggestions in order to improve the quality of the paper.

In my opinion, major essential revisions are the following:

Methods

I suggest to better explain why having considered only patient with a first ever stroke/TIA (I guess, to better evaluate the “recurrence rate” in naive patients?).

Was NIHSS assessed by trained personnel? Were all of the Ludwigshafen Klinikum patients admitted to the stroke unit or to other department? How many stroke units are cooperating in the Registry? Are there other treating specialists besides neurologists?

Neuroradiological findings:
- Why had you considered old lacunar infarction or SAE in the same item?
- In table 1 some “old lesions” have been reported, while the sample has been defined as made of “first ever stroke” patients. Did you meant first ever “symptomatic cerebrovascular event”? If yes, this has to be acknowledged at some point. If no, you should explain the finding or exclude those patients from further analyses.
- Why a CT/MRI has been repeated only within 5 days after the event? If a symptomatic bleeding occurred after this period, would it be recorded or not?

Could you provide the rate of early (=in hospital) ischemic stroke recurrence?
From Table n° 2, I can see that also antiplatelet treatment before stroke and thrombolysis have been recorded: insert this in the Methods section text.

For OAC-implementation, do you mean that patients finally received an OAC or an antithrombotic?

Antiplatelets post stroke is an important, but missing, data. I think that patients that receive antiplatelets cannot be equalized to the ones that do not receive an antithrombotic at all. If this info cannot be regained, you should specify the design of the study as investigating the adherence in prescription of the recommended therapy for CES secondary prevention, not considering the other antithrombotics. The same consideration for LMW heparin, that often is used as a bridging therapy.

Why having excluded patients who died early after stroke? Describe this subgroup of patient: number, causes of death, age, stroke severity… Have they been excluded because of an extreme clinical condition or comorbidity that would have influenced the whole statistics? In any case, this has to be explained and acknowledged.

Results

Please report the range of length-of-stay.

About recurrences within 500 days: specify the rate of recurrence in the subgroups of patients received OAC during vs after hospitalization, and compare the finding.

“OAC management post stroke” is not a precise interpretation of data in the text: No-OAC after discharge (not recommended or recommended but not given) is independently associated with stroke mortality, while OAC started after discharge does not reach the statistical significance.

Discussion

Patient receiving OAC during hospitalization seem to be “healthier” than the other (lower NIHSS and mRS, younger, lower HAS-BLED, …): this point could be discussed.

“Increased risk of bleeding under (insert: early) treatment with OAC in more severe strokes might be”…

Study limitations: Consider my previous statements if the required missing data are in fact unavailable, and report the lacks in this section.

Conclusions

I think the Authors should better explain and highlight, both in the Abstract and in the main text, the main finding of their work: “OAC non-treatment after CES is the main predictor of stroke mortality”.


In the Abstract: what do you mean for “eligible” patient? The previously called “healthier”? Perhaps “selected” patient would be more precise.

In the main text: Later initiation= post discharge?, and Early initiation= during in-hospital stay? The adjectives are intuitive, but in fact you do not report the exact timing (i.e., in days) of starting therapy.

Minor essential revisions

Background

Contributing to a similar project in my country setting, I am aware of the fact that studying anticoagulants management by means of a registry is very difficult, because many clinical variables affect doses, timing and need of therapeutic shifts, with a huge body of information that has somehow to enter in a scheme. I think you should report in the Introduction this critical methodological issue.

Methods

Neuroradiological findings:
- Almost the whole sample has a brain lesion on imaging. Can you provide the proportion of CT and MRI/DWI that were performed?

Please specify in the text what are the cardiovascular risk factors you have considered.

Reasons of non-OAC implementation after discharge have been recorded?

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests